

How Do Households Respond to Expected Inflation? An Investigation of Transmission Mechanisms*

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Abstract

We disentangle the economic channels through which inflation expectations, over short and long horizons, affect households' spending on durable and non-durable goods. To do so, we design a survey instrument featuring hypothetical scenarios that generate a controlled change in inflation expectations. We elicit spending decisions before and after the change and ask mechanism-elicitation questions to explore respondents' reasoning. For most households (74%), spending is unresponsive to increased inflation expectations, typically due to fixed budget plans or irrelevance of inflation expectations for current spending. About 20% of households reduce spending, often because of saver's wealth effects and nominal income rigidity. Only 6% of households increase their spending, mainly citing intertemporal substitution or stockpiling. Respondents whose expectations about other economic variables deteriorate following higher inflation expectations are significantly more likely to reduce their planned spending. Our findings suggest manipulating inflation expectations is an ineffective policy tool to boost spending.

Keywords: survey, inflation expectations, consumption, transmission channels

JEL Classification: D84, D15, E2, E52, E7

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1 Introduction

In standard economic models, inflation expectations play a key role in the pricing decisions and wage negotiations of firms, and the consumption and savings choices of households. Understanding if these theoretical relationships are empirically supported is particularly important now given the elevated inflation rates in many countries. High inflation has sparked concerns about short- and long-run inflation expectations rising and how agents' actions will respond in turn. For example, if firms set higher prices or households stockpile goods in response to higher expected inflation, higher inflation expectations can be a self-fulfilling prophecy resulting in higher realized inflation. Furthermore, understanding how firms and households will respond to a change in inflation expectations is crucial to discussions about using inflation expectations as a monetary policy tool.¹

In this paper, we investigate how and why household spending decisions react to higher inflation expectations. Existing economic theory proposes a variety of channels for how consumption may respond to changes in inflation expectations. For instance, intertemporal substitution suggests higher inflation expectations will result in a lower real interest rate and therefore more consumption today. However, there are other mechanisms that predict current consumption will fall in response to higher expected inflation. For example, higher future inflation will act as a tax on savings and erode wealth, or sticky nominal wages may result in a decrease in real income. Given that there are various mechanisms (which we will review in detail in Section 3), that have different predictions, the overall sign of the relationship between expected inflation and current spending is theoretically ambiguous.

Existing work has studied the empirical relationship between inflation expectations and household spending; however, the evidence is mixed in terms of the sign and magnitude of the effect (see [Weber et al., 2022](#) and [D'Acunto et al., 2023b](#) for reviews of this literature). Previous studies have estimated the *combined* effect of all mechanisms. Given that several—sometimes contradictory—channels may work simultaneously, and could affect different groups of people in heterogeneous ways, it is not surprising that existing work has produced varied and inconsistent findings. To better understand the aggregate effect of inflation expectations on spending, we need to know the *different* transmission mechanisms at work, which channels are empirically important, and if there is any response heterogeneity between households. Moreover, existing empirical studies mostly focus on consumption

¹Following the Great Recession and the COVID-19 pandemic, policy rates across advanced economies were constrained by the zero-lower-bound. So, economists and policymakers contemplated stimulating current spending by engineering higher private sector inflation expectations ([Coibion et al., 2020](#); [Yellen, 2015](#)).

responses to changes in short-run inflation expectations. However, central banks have emphasized the importance of long-run inflation expectations because the “anchoring” of these expectations helps to stabilize realized inflation (Yellen, 2015; Powell et al., 2020; Binder and Kamdar, 2022).

Our paper systematically studies the different economic channels through which inflation expectations affect households’ spending decisions. We also assess the differential impact of increases in short-term versus long-term inflation expectations on household spending decisions for both durable and non-durable goods. To reduce confusion and the cognitive load on the respondents, we have four between-subject treatments differing along two dimensions. Respondents are either asked about durable or non-durable consumption, and are either allocated to a hypothetical scenario featuring higher short-term (1-year) or long-term (10-year) inflation expectations.

Our survey instrument has two key innovations. First, we generate a controlled, exogenous hypothetical change in household inflation expectations and estimate the planned change in their *real* consumption. This is achieved by initially soliciting respondents’ inflation expectations for (i) the next quarter, (ii) the year following that quarter, and (iii) the annual average in the decade after that quarter, as well as their consumption plans for the upcoming quarter. Then, respondents report how their consumption plan in the next quarter would change in response to a hypothetical scenario that increases their inflation expectations.² In the short-term treatments, respondents increase their 1-year inflation expectations (after the next quarter) by three percentage points while keeping their 10-year inflation expectations unchanged. In the long-term treatments, respondents increase both their 1-year and annual average 10-year inflation expectations (after the next quarter) by three percentage points. In all treatments, we also inform subjects that their inflation expectations over the next quarter remain the same; this allows us to detect the *real* consumption change and prevents spending plans from increasing mechanically because of higher expected inflation.³

Recent studies, particularly Mei and Stantcheva (2022) and Kumar et al. (2023), have affirmed the efficacy of using hypothetical questions in the macroeconomics context, demonstrating that the responses they elicit are consistent with those obtained from extensive policy

²See Ameriks et al. (2020), Andre et al. (2022), Armantier et al. (2022), and Aidala et al. (2023) for applications of hypothetical scenarios in survey studies in macroeconomics and Fuster and Zafar (2023) for a review of the literature.

³In survey pre-tests, respondents often stated that they would (mechanically) increase their spending in response to an increase in future expected inflation. That is, even though they planned to purchase the same bundle of goods, they believed they would spend more because inflation would accelerate in the “current” period, captured by the next quarter.

implementations or randomized controlled trials. Moreover, the use of hypothetical scenarios in our study offers significant advantages for identification purposes by generating controlled, exogenous variations in inflation expectations across different time horizons. In contrast, it is challenging to produce such variation in naturally occurring settings or information-feeding experiments (e.g., [Coibion et al. 2023](#) and [Armantier et al., 2022](#)). In addition, our hypothetical scenarios guarantee that all respondents obtain the same information and update their inflation expectations by three percentage points while emphasizing that there is no new information about other aspects of the economy. This approach eliminates confounding factors and removes reverse causality concerns that are common in observational data.

Our second key innovation is that the survey is designed to identify the different economic channels underlying the spending response. We integrate several methods to elicit the mechanisms driving respondents' spending decisions. First, we rely on unstructured textual responses: after a respondent provides their updated spending plan, the respondent answers an open-ended question. The question asks them to describe the main considerations that played a role in making (or not making) changes to their consumption plan. Second, we use a more structured approach by providing a list of mechanisms to respondents. We ask respondents whether each channel was a consideration in their thought process or not. Note that the list of mechanisms shown is in line with their qualitative change in consumption (e.g., increase, decrease, no change). This reduces the cognitive load by shortening the list of possible channels respondents must review. Finally, to quantify the relative importance of each channel, we ask respondents to rank the considerations that applied to them by allocating a total of 100 points across the mechanisms.

We also ask respondents for their beliefs about their household income growth, federal funds rate, and uncertainty about their financial situation before and after the hypothetical scenario. These questions enable us to evaluate whether these variables are affected by the hypothetical scenario, as well as to tailor the channels that are presented to respondents accordingly. For instance, if a respondent indicated that their spending would decrease but expects their income to keep up or outpace inflation, then they would not be asked if income rigidity played a role in their decision to decrease spending.

Our analysis begins with an investigation of how respondents update their beliefs about their household's income growth, their financial situation uncertainty, the federal funds rate, and the overall economic outlook. Following an increase in short-term inflation expectations, most households expect their income to remain unchanged, implying a lower real income. This observation aligns with [Jain et al. \(2022\)](#) and [Hajdini et al. \(2022\)](#), who find that the transmission from short-term expected inflation to anticipated income growth is incomplete.

In long-term treatments, however, households are significantly more likely to think their income will rise or even outpace inflation. While the majority of households do not change their beliefs about the federal funds rate, approximately 40% of households have beliefs consistent with the Taylor rule and expect the Fed to increase interest rates. Households in long-term treatments are significantly more likely to expect a change in the federal funds rate. The differential evidence of responses across the short-term and long-term treatments suggests that the hypothetical manipulation was successful. While approximately 25% believe elevated inflation expectations increase their financial uncertainty, the scenario does not change the majority of respondents' sense of financial predictability. However, most individuals associate higher expected inflation with a worsening economy, consistent with the findings of [Kamdar \(2019\)](#).

We then investigate how inflation expectations change spending plans. Along the extensive margin, we find that most households (63%) do not change their current spending or consumption basket in response to an increase in their inflation expectations. Another 11% say they would maintain their spending but change their consumption bundle. About 20% state that they would decrease spending, and the remaining 6% would increase spending. Turning to the change in spending, we find that an increase in long-term inflation expectations significantly reduces durable goods spending. In contrast, higher inflation expectations in the short run (while fixing long-run inflation expectations) have an inconsequential effect. Notably, the spending on non-durable goods is not significantly affected by the increase in either the long-run or the short-run inflation expectations. Overall, higher inflation expectations either have no effect or a small negative effect on consumption. This means that trying to raise inflation expectations as a policy tool to increase consumption may be an ineffective approach at best or counterproductive at worst.

Next, our analysis turns to investigating the underlying mechanisms for these spending choices. The majority of respondents who selected not to change their spending plans indicated that they have a fixed budget or that future inflation does not affect their current spending decisions. There is also some evidence that liquidity constraints played a role in keeping spending plans unchanged. Primary reasons for decreasing spending included general wealth effects (savers' wealth effect and rigid income), followed by putting money in assets that provide an inflation hedge. Higher financial uncertainty and variable-rate debt considerations also played a role. Among the small group of respondents who stated they would increase spending, intertemporal substitution and stockpiling were the main considerations.

Additionally, we analyze the heterogeneity across households in terms of the direction of the spending response. Some of the differences are associated with respondents' demograph-

ics, financial situation, and subjective models of the economy. For example, respondents who have low liquid savings, are female, or have a stagflationary view of the economy are more likely to decrease current consumption in response to higher expected inflation.

Finally, we conduct an additional survey to assess the robustness of the results to a larger shock to inflation expectations. In particular, we assess how a hypothetical 10 percentage point increase in short-run inflation expectations would affect current durable spending (keeping long-run inflation expectations unchanged). This treatment addresses potential concerns that the three percentage point increase in our main experiment could be perceived as small and thus driving inaction in consumption changes. The results confirm the central findings of our main treatments. Approximately 76% of subjects do not alter their spending, suggesting that the channels that drive individuals to be unresponsive to inflation expectations are tied to fixed budget planning, behavioral biases, or financial constraints, which are unlikely to change given a bigger shock. The proportions of subjects who increased or decreased their spending are similar to the main experiments, and there was a significant negative impact on average durable spending. Overall, these results confirm that increasing inflation expectations, regardless of the magnitude of the increase, is unlikely to boost current consumption.

Section 2 provides more details on the contribution of our paper relative to existing literature. Section 3 provides details on potential channels through which inflation expectations may affect spending decisions. We discuss the survey design and implementation in Section 4 and our results in Sections 5 and 6. Section 7 concludes.

2 Related Literature

Our primary contribution is to provide the first comprehensive analysis of the channels through which both short-run and long-run inflation expectations influence current spending on durable and non-durable goods. This advances the existing body of research that studies the impact of consumers' inflation expectations on their spending. Prior work offers mixed results concerning the relationship between household inflation expectations and consumption, often relying on survey data to assess the correlation between spending and inflation expectations. For example, several papers have reported a positive, economically significant correlation between inflation expectations and spending or planned spending (Vellekoop and Wiederholt, 2019; Duca-Radu et al., 2021; Andrade et al., 2023; Binder and Brunet, 2022). Others have found that the positive correlation between inflation expectations is only found

among high-cognition individuals or good inflation forecasters (Bachmann et al., 2015; Burke and Ozdagli, 2020; D’Acunto et al., 2023). Recently, papers have started incorporating experiments or randomized control trials to better understand the causal relationship between expectations and spending decisions. For example, Coibion et al. (2023) creates exogenous variation in expectations by providing information to a subset of subjects. They found no causal effect of higher inflation expectations on non-durable spending but a sharp negative effect on durable spending. Similarly Galashin et al. (2020) provide respondents with expert inflation forecasts, and find the treatment does not affect credit-card spending and has a negative effect on durable spending. Beyond the impact of inflation expectations on spending decisions, randomized control trials are also used to study the impact of other macroeconomic expectations on economic decisions, (e.g., Coibion et al., 2018, 2021; Roth and Wohlfart, 2020).

Our work complements existing research by studying the causal effect of salient and higher short-run and long-run inflation expectations on stated spending for durable and non-durable goods. We find that most respondents do not change their current spending in response to higher inflation expectations, with a significant fraction decreasing and a small fraction increasing their spending. Such differences highlight that households may exhibit varied reactions to the same policy interventions—an aspect that representative-agent models struggle to explain. Moreover, the insights drawn from these diverse responses are integral for designing and implementing effective policies and interventions.

Our findings about the impact of inflation expectations on spending are consistent with some previous research. Namely, Coibion et al. (2023) highlight that higher inflation expectations have a negligible effect on non-durable spending but durable spending contracts significantly. Our results unveil finer nuances of this result: the reduction in durable consumption manifests predominantly when long-term inflation expectations rise yet dissipates when only short-term inflation expectations rise. This result highlights a gap in the existing literature on inflation expectations and spending: an emphasis on the effects of short-term inflation expectations. While this focus may be motivated by the one-period consumption Euler equation, many monetary policymakers focus on long-term expectations and their anchoring and economic effects (Bernanke, 2007; Draghi, 2014.) To the best of our knowledge, our study provides the first empirical investigation of how changes in long-run inflation expectations affect current spending decisions.

Perhaps most importantly, we advance this line of work by investigating the various mechanisms that drive spending plans in response to higher inflation expectations. Our approach distinguishes which mechanisms are empirically important by directly eliciting re-

spondents’ underlying thought processes. In doing so, we advance the understanding of how respondents perceive the relationship between inflation expectations and spending decisions. Recognizing the propagation mechanism(s) is essential for generalizations (or identifying the boundaries of such generalizations), prediction, and the analysis of counterfactual scenarios. In addition, the channel analysis is of particular relevance for policy making. Understanding the underlying mechanisms—the economic forces propelling households to adjust their spending plans in response to changes in inflation expectations—is a prerequisite for using inflation expectations as a policy tool.

We find limited evidence of intertemporal substitution, a classical theoretical channel posited in macroeconomics. Instead, we find strong evidence in support of channels that lead to no changes in current spending, such as having a fixed budget or inflation expectations being irrelevant for current decisions. These channels are consistent with mental accounting (Thaler, 1999) or hand-to-mouth consumption (Aguiar et al., 2020). Furthermore, we find support for channels that result in a decrease in spending, such as the erosion of savings and nominal income rigidity. These mechanisms are consistent with papers that have found households view inflation as a bad outcome (Kamdar, 2019; Coibion et al., 2023) due to the wealth effects (Schnorpfeil et al., 2023) or the belief that income will not keep up (Shiller, 1996).

Our paper also contributes to the literature that investigates the relationship between inflation expectations and expectations of other economic variables. We confirm that households often associate higher inflation expectations with (i) expectations of a deteriorating economy (Kamdar, 2019), (ii) limited pass-through to income expectations over the short horizons (Jain et al., 2022; Hajdini et al., 2022; Shiller, 1996), and (iii) higher interest rates (Dräger et al., 2016; Carvalho and Nechio, 2014). However, our results provide additional insights relative to these results. The longer the duration of higher expected inflation, the more likely respondents are to think their income will keep up or exceed inflation. Also, the longer the inflation is expected to stay high, the more likely households believe interest rates will rise.

Finally, our methodology builds on the new and growing literature that uses hypothetical scenarios in surveys to investigate macroeconomic questions. These experimental methods make it possible to identify causal relationships by introducing controlled exogenous variation. Prior work has focused on health-dependent utility and life cycle consumption (Ameriks et al., 2020), consumption theory (Fuster et al., 2021; Christelis et al., 2019; Mei and Stantcheva, 2022) and firm decisions (Kumar et al., 2023). The “vignette” or “strategic survey” approach has also been used to study the causal effect of hypothetical shocks (e.g., to

past inflation, oil supply, or monetary policy) on inflation expectations (Andre et al., 2022; Armantier et al., 2022; Aidala et al., 2023). Additionally, Pilossoph and Ryngaert (2022) use hypothetical scenarios about future inflation to understand what labor market actions consumers would take (e.g., look for other jobs or ask for a raise). Similar to other research, our study benefits in several ways from using the strategic survey method. Specifically, it enables us to design controlled exogenous scenarios that are tailored to address the question of interest. Such scenarios do not frequently occur in field settings (see Armantier et al., 2022 for a thorough discussion of the strategic survey methodology). To the best of our knowledge, we are the first to implement controlled changes to *future* inflation expectations using hypothetical scenarios to examine systematically the transmission mechanisms between inflation expectations and *consumption* decisions. Our results also demonstrate that this approach can be useful in identifying the importance of various economic channels behind households’ spending decisions, which we discuss next.

3 Potential Channels

There are several channels through which inflation expectations may influence households’ current spending decisions. We categorize these channels into “direct” and “indirect” channels. Direct channels operate without any change in expectations of other economic variables. In contrast, indirect channels work through households adjusting their expectations of other economic variables, such as household income growth, household financial uncertainty, or interest rates which, in turn, impact household spending decisions.⁴ This section systematically reviews the channels through which higher expected inflation may affect current consumption. The identified channels will then inform our survey design.

We begin with direct channels through which elevated inflation expectations increase current spending. First, higher inflation expectations reduce the real interest rate through the Fisher equation (if the nominal interest rate does not rise as quickly), and a lower real interest boosts current spending through the Euler equation. This is the standard *intertemporal substitution* channel frequently discussed in macroeconomics. Given that durable consumption exhibits greater sensitivity to real interest rates, the intertemporal substitution channel may be especially important for durable consumption (Bachmann et al., 2015).

⁴Direct and indirect channels are reminiscent of the concepts of partial and general equilibrium effects, respectively; however, they are distinct concepts. In particular, each direct and indirect effect captures a single particular partial effect. However, no single direct or indirect effect would be accurately described as general equilibrium.

Second, according to the literature on infrequent purchasing, households consume a predetermined, constant quantity of a specific good per unit of time (Robin, 1993; Boizot et al., 2001). Households that anticipate future price increases may begin *stockpiling* goods prior to anticipated increases in price to reduce the adverse impact of inflation on purchasing power.

Other mechanisms suggest that an exogenous increase in expected inflation may lead to a decrease in current spending. First, higher future inflation acts as a tax on nominal assets, and accordingly, elevated inflation expectations represent a negative *savers' wealth effect*. Second, households may engage in *inflation-hedging* by acquiring assets such as real estate that are partially protected from higher inflation, thereby diminishing their spending on consumption goods.

Moreover, there are several reasons why inflation expectations may have no effect on current spending. First, household borrowing or *liquidity constraints* could curtail the intertemporal substitution effects of increased inflation expectations, akin to how they dampen the efficacy of forward guidance on interest rates (McKay et al., 2016). That is, households may not be able to increase spending due to being liquidity constrained or unable to borrow. Additionally, households may operate on a *fixed budget*, adhering strictly to a predetermined plan, e.g., as a result of behavioral mental accounting (Aguar et al., 2020; Thaler, 1999). These two mechanisms could explain why subjects either purchase the same bundle of goods under elevated inflation expectations or acquire a different bundle of goods while maintaining constant total dollar spending. Lastly, some households may not incorporate inflation expectations into their current spending plan at all, due to present biases, cognitive limitations, or other considerations and thus do not respond to inflation expectation shocks by adjusting their consumption. Put another way, this channel suggests future inflation is *not a consideration* when making current consumption choices.

Next, we discuss the indirect channels, which require a change in an economic expectation other than inflation. For example, an increase in inflation expectations may be associated with a change in household income growth expectations. Some households may expect, consistent with the classical Phillips curve, that higher future inflation will be correlated with lower unemployment and higher income growth. As a result, some households may anticipate their income to grow at a faster rate than inflation (*flexible income*), and thus increase current spending. Conversely, high expected inflation may be associated with a negative outlook about the economy's future (Volcker, 2011; Kamdar, 2019). If households believe their income growth rate will not keep pace with the inflation rate, they may perceive higher prices as an erosion of their real purchasing power, leading to a decrease in current spending. We call this mechanism the *rigid income* channel. It is also plausible that individuals may

simply assume their income growth rate will remain in line with inflation, thereby keeping their *real income unchanged* and maintaining current consumption. Note that households could increase their current spending even if they expect their income growth rate not to keep pace with inflation due to *nominal illusion* (Bachmann et al., 2015). Finally, any future income growth also implies expected wealth gains for fixed-rate debt holders, as higher inflation erodes the real value of the debt. Consequently, as in Fisher (1933), current spending increases through a *debtor’s wealth effect*.

An increase in inflation expectations might induce expectations about other economic variables to change. First, higher future inflation may be associated with increased *uncertainty* about the economy (Friedman, 1977; Ball et al., 1990; Binder, 2017). Thus, individuals may reduce current spending due to precautionary savings motives. Second, as households contemplate the implications of elevated expected inflation, they may also consider a traditional forward-looking Taylor rule. As prices are expected to rise further, the central bank may increase interest rates over this period to curtail inflation. Consequently, households must allocate more funds to service their *variable-rate debt* in the future, leading them to augment their savings and reduce current spending.

For three indirect channels—uncertainty, variable debt, and debtor’s wealth effect—we include a reverse counterpart. Regarding uncertainty, economic theory predicts that higher inflation expectations are associated with higher uncertainty. Nevertheless, some households may hold the opposite view. To account for that possibility, we include the channel *uncertainty (reverse)* which posits that higher expected inflation decreases uncertainty and thus increases spending. Similarly, regarding the variable debt channel, while it is reasonable to presume that households will expect the nominal interest rate to go up (if they think it will change at all), it may be possible that they expect a decline in rates which would result in lower payments for variable debt. This contingency is captured in the *variable debt (reverse)* channel. Finally, regarding fixed-rate debtor’s wealth effect, economic theory predicts a positive wealth effect. However, some households may juxtapose their fixed debt obligations with a lower income; for which we include the *debtor’s wealth effect (reverse)* channel.

Tables 1 and 2 describe all the channels discussed in this section, divided by whether the mechanism implies a change in spending or not, respectively. The same channels were considered for non-durable goods. The first column lists the terms we will use throughout the paper to refer to the different channels. Column (2) presents how we describe each channel to survey respondents in simple terms without economics jargon. Column (3) classifies each channel as either direct or indirect.

Table 1: Description of Underlying Channels for Spending Changes

Name	Explanation	Effect
	<i>As prices will rise even more after the next 3 months, ...</i>	
Current Spending: Increase		
Intertemporal Substitution	the return on savings won't be worth as much after the next 3 months , thus, saving over the next 3 months becomes less attractive. So, I will buy more durable goods over the next 3 months .	Direct
Stockpiling	I will buy more durable goods over the next 3 months before prices go up even more.	Direct
Nominal Illusion	my household income will increase over this period. So, I will buy more durable goods over the next 3 months .	Indirect
Flexible Income	my household income will rise faster than price increases over this period. So, I will buy more durable goods over the next 3 months .	Indirect
Uncertainty (reverse)	my household will face lower financial uncertainty over this period. So, I will buy more durable goods over the next 3 months .	Indirect
Variable Debt (reverse)	the Fed (the central bank of the U.S.) will decrease interest rates over this period. Thus, my household can pay less for our variable rate loans over this period. So, I will buy more durable goods over the next 3 months .	Indirect
Debtor's Wealth Effect	given that my debt payments are fixed and my income will increase over this period, I will have more money left after paying my fixed debts. So, I will buy more durable goods over the next 3 months .	Indirect
Current Spending: Decrease		
Savers' Wealth Effect	my existing savings over this period won't be worth as much. So, I will buy less durable goods over the next 3 months .	Direct
Inflation Hedge	I will move more money to assets not as affected by rising prices, such as real estate, and buy less durable goods over the next 3 months .	Direct
Rigid Income	my household income will not keep up with the price increases over this period. So, I will buy less durable goods over the next 3 months .	Indirect
Uncertainty	my household will face higher financial uncertainty over this period. So, I will buy less durable goods over the next 3 months .	Indirect
Variable Debt	the Fed (the central bank of the U.S.) will raise interest rates over this period. As a result, my household must pay more for our variable rate loans over this period. So, I will buy less durable goods over the next 3 months to save up for the higher future payments.	Indirect
Debtor's Wealth Effect (reverse)	given that my debt payments are fixed and my household income will decrease over this period, I will have less money left after paying my fixed debts. So, I will buy less durable goods over the next 3 months .	Indirect

Table 2: Description of Underlying Channels for Unchanged Spending

Name	Explanation	Effect
	<i>As prices will rise even more after the next 3 months, ...</i>	
Current Spending: Unchanged, but Bundle Changes		
Liquidity Constraint	I don't have money and cannot borrow to increase my spending over the next 3 months.	Direct
Fixed Budget	I have a fixed budget plan and stick with it.	Direct
Current Spending: Unchanged, and Bundle Unchanged		
Liquidity Constraints	I don't have money and cannot borrow to increase my spending over the next 3 months.	Direct
Fixed Budget	I have a fixed budget plan and stick with it.	Direct
Not a Consideration	When I plan my spending over the next 3 months, the price changes after the next 3 months do not matter.	Direct
Real Income Unchanged	My household income will keep up with price increases over this period. So, I will not change my spending decisions over the next 3 months.	Indirect

To understand household spending decisions, it is important to quantify the relative significance of each of the channels discussed above. From a theoretical standpoint, the relative importance of each channel is often ambiguous. However, in some instances, theory does provide hypotheses regarding if a given channel's importance will vary based on (i) the types of goods under consideration—durable vs. non-durable, and (ii) the duration of the rise in inflation expectations—long-run vs. short-run.

For example, [Bachmann et al. \(2015\)](#) theoretically illustrates that an increase in expected inflation, holding the policy rate fixed, would lead to a larger increase in durable spending relative to non-durable spending. In other words, intertemporal substitution considerations may be stronger for durable goods. Additionally, the inflation hedge channel (which posits that individuals will decrease spending in order to invest in assets protected from inflation) may be more applicable to non-durables than to durables because durables naturally provide a higher degree of inflation hedging. Finally, one would expect liquidity constraints to be a more important consideration for durable good spending because durables tend to be big-ticket items.

Additionally, some channels may be more or less important based on the duration of the increase in expected inflation. For example, in the long treatments (relative to the short treatments), the erosion of savers' wealth could be more severe and that channel is therefore

likely to be stronger. Another example is intertemporal substitution based on the Euler equation. Take the consumption Euler equation from the standard New Keynesian model (Galí, 2015) and solve it forward, as in Equation (1) below:

$$\begin{aligned} c_t &= \mathbb{E}_t c_{t+1} - \sigma [i_t - \mathbb{E}_t \pi_{t+1}] \\ &= \mathbb{E}_t c_\infty - \sigma \sum_{j=0}^{\infty} \mathbb{E}_t [i_{t+j} - \pi_{t+j+1}]. \end{aligned} \tag{1}$$

The current deviation of consumption from long-run levels (c_t) is related to the expected real interest rate in the current ($i_t - \mathbb{E}_t \pi_{t+1}$) and future periods. When inflation expectations are high, the expected real rate is low. So assuming a fixed nominal rate, current consumption should rise in response to higher expected inflation. Notice that the longer the agent expects inflation to be high, the larger the effect on current consumption.

Furthermore, changes in inflation expectations may trigger people to change their expectations of other economic variables, such as the federal funds rate, income growth, economic outlook, and financial uncertainty. The effects of these changes may depend on whether the rise in inflation expectations is transitory or persistent. For example, people may be more likely to expect their financial predictability to worsen, their income to keep up with inflation, or changes in nominal interest rates if higher expected inflation is persistent. These beliefs will in turn affect the applicability of the associated indirect channels. For instance, in the long-term treatment (relative to the short-term treatment), the rigid income channel is less applicable while the uncertainty channel is more applicable.

4 Survey Design and Implementation

Our main survey consists of four treatments. Each treatment either asks about spending on durable goods or non-durable goods and services, and the rise in inflation expectations is either short-term (over a year) or long-term (over 10 years). In the following, we abbreviate the treatments to SD (standing for short-term durable), SN (standing for short-term non-durable), LD (standing for long-term durable), and LN (standing for long-term non-durable). To check the robustness of our findings, we conduct an additional treatment to assess the effects of a large, short-term shock to inflation expectations on durable spending. This section provides an overview of the structure and the implementation of the main survey experiments and concludes with a description of the additional robustness treatment.

4.1 Survey Structure

Across all treatments in our main experiment, our survey consists of four modules: a pre-hypothetical scenario module, a hypothetical scenario module, a post-hypothetical scenario module, and a demographics module. The pre-hypothetical scenario module obtains respondents’ “priors” about expected inflation, (non)durable spending, household income growth, household financial uncertainty, and the federal funds rate. We refer to them as “priors” because the expectations about these variables are elicited before respondents are exposed to the hypothetical scenario. The hypothetical scenario module describes a hypothetical situation where the respondent’s inflation expectations are raised for either a short period (1 year) or for a long period (10 years). Then the post-hypothetical scenario module obtains the respondents’ “posteriors” of (non)durable spending, household income growth, household financial uncertainty, the federal funds rate, and the change in the general outlook for the economy. In addition, the post-hypothetical scenario module works towards understanding respondents’ changes in (non)durable spending by using an open-text box as well as allowing respondents to select mechanisms from a list consistent with each respondent’s posteriors. The final module asks standard demographics questions, as well as cognitive reflection and financial situation questions. The complete survey (for the SD treatment) can be found in Appendix C.

4.1.1 Pre-Hypothetical Scenario Module

We begin the pre-hypothetical scenario module by presenting respondents with a concise and non-technical explanation of price changes in percentages, fostering a common understanding of the concept and mitigating potential misinterpretation of subsequent questions. Specifically, we tell respondents, “The following questions ask you about your perceptions and expectations about price changes in general. For instance, a 2% increase in prices over a certain period means that a typical bundle of goods and services, which costs \$100 at the beginning of a period, costs \$102 at the end of the period.” Subsequently, we elicit respondents’ percent price change expectations over the next three months, over the 12 months following the next three months, and over the 10 years following the next three months. We also ask for a qualitative measurement of their uncertainty over each horizon. These questions are designed to be aligned with established consumer surveys, such as the University of Michigan Survey of Consumers.⁵ To ensure that subjects understand the time horizons, we

⁵Existing consumer surveys ask about either “inflation” or “prices in general,” and which approach is more effective is still under debate (Armantier et al., 2017). Our survey asks about the percent change

provide exact dates and visual timelines. For example, for surveys fielded in early February 2023, for the 12-month horizon starting in three months, we state that we are interested in the period May 2023 to May 2024 and provide Figure 1a as a visual guide. For the 10-year horizon starting in three months, we state we are interested in the period May 2023 to May 2033 and provide Figure 1b as a reference.

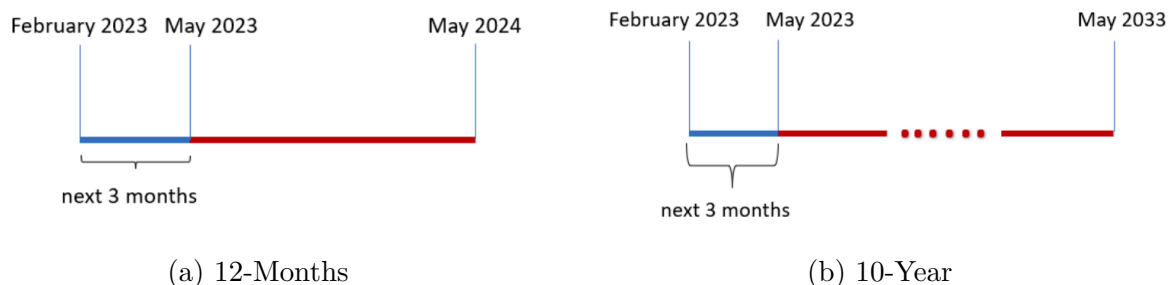


Figure 1: Visual Guide Timelines

Notes: Timelines respondents would see in February 2023 to indicate the next three months, the 12-month horizon or the 10-year horizon three months from now.

The specific hypothetical scenarios will be discussed in the next subsection. We elicit the respondents’ beliefs about a variety of economic outcomes over the 12-month period or the 10-year period (depending on whether they are in a short-term treatment or a long-term treatment), starting after three months. Again, we provide the exact dates and a timeline highlighting the horizon we are asking about. The reported expectations serve as households’ priors (beliefs before the introduction of the hypothetical scenario). In the following, we illustrate the questions using the short-term treatment. The long-term treatment is similar but asks for the average, annual value over a 10-year period and the dates are adjusted accordingly. First, we define total household income, and we ask respondents, “*Over the 12-month period from May 2023 to May 2024, by what percent do you think your household income will go up/down?*” Next, we define the federal funds rate, inform them of the approximate current value, and ask, “*Over the 12-month period from May 2023 to May 2024, what do you think the federal funds rate will be on average?*” Additionally, we ask, “*Currently, how difficult is it for you to predict your household’s financial situation over the 12-month period from May 2023 to May 2024.*” The qualitative responses are: very difficult to predict, moderately difficult to predict, and not at all difficult to predict. Note that both the federal funds rate and the household financial situation questions follow the phrasing of questions in the Bank of England Inflation Attitude Survey.

in prices rather than “inflation” to avoid difficulties arising from the annualization of expectations over a three-month interval.

Next, depending on the treatment, a respondent would either see a non-technical explanation of durable goods (e.g., cars, electronics, furniture) or non-durable goods and services (e.g., food, gasoline, clothing, haircuts). Respondents report their average monthly spending over the last three months and their expected average monthly spending plan over the next three months. The expected consumption plan over the next three months will serve as our measure of “current” consumption. These survey questions follow the wording from the CentER Internet panel (Coibion et al., 2023).

4.1.2 Hypothetical Scenario Module

The hypothetical scenario asks survey participants to think about a hypothetical situation in which their inflation expectations are higher than estimated in the initial module of the survey. In the short-term treatments, we tell respondents to imagine that they have received credible, new information about future inflation. Thus, they now expect inflation in the year following the next three months to be three percentage points higher than in their initial estimation. The average annual rate of 10-year inflation remains stable. Alternatively, in the long-term treatments, the three percentage point increase in expected inflation is long-lived. Respondents are asked to imagine that, after the next three months, the expected average annual rate of 10-year inflation also increases by three percentage points. In what follows, we provide the wording used in the short-term scenario:

Now, imagine that you have received some information about future prices from a reliable source that you trust. In response to this new information, you update your expectations on prices as follows:

- (1) Over the next 3 months from February 2023 to May 2023, you expect the percentage change in prices to be $A\%$ (this is the same as your initial expectation).*
- (2) Over the 12-month period from May 2023 to May 2024, you expect the percentage change in prices to be $(B+3)\%$ (this is 3% higher than your initial expectation).*
- (3) Over the 10-year period from May 2023 to May 2033, you expect the percentage change in prices per year on average to be $C\%$ (this is the same as your initial expectation).*

The table below summarizes your initial expectations and updated expectations on future prices.

Expectations on changes in future prices	Over the next 3 months February 2023 to May 2023	Over the 12-month period May 2023 to May 2024	Over the 10-year period May 2023 to May 2033
Initial	A	B	C
Updated	A	B+3	C

In the hypothetical scenario, there are several items worth noting. First, to ensure that we only directly change respondents' inflation expectations while keeping everything else constant, we clearly explain to the respondents that in the new scenario, there is no new information about other aspects of the economy. Respondents, however, are free to make any associations they would like. For instance, some may associate higher expected inflation with an increase in expected income or an increase in the federal funds rate. Second, we use blue text to indicate the next three months and red text to indicate horizons after the next three months. This coloring is consistent with the timelines used as visual guides throughout the survey. Third, as we use consumption in the next three months to proxy *current* consumption, we tell subjects that in the alternative scenario, prices in the next three months will remain the same as expected in the initial scenario. That is, excess price increases occur only after the next three months. The change in consumption in the next three months can therefore be interpreted as a change in real consumption. Indeed, in our survey, we elicit inflation expectations for the next three months in the pre-hypothetical scenario module and we remind respondents that those are not affected in the hypothetical scenario. This is because, in the process of designing the survey, we found that when we formulated the hypothetical scenario as prices would be higher in the next 12 months, many respondents said that their consumption would increase in the next three months. However, according to their open-text explanation, the increase was mostly mechanical. That is, they thought inflation would already be higher in that three-month period. We then would have to infer whether the change in consumption represented a change in real spending, and to do that, we would have to assume that subjects understand that the price change in the next three months would be a fraction (e.g., 1/4) of the expected price change in the next 12 months. Our design choice minimizes mechanical increases, enabling us to interpret the change in consumption as a change in real spending. Finally, following the description of the hypothetical scenario, respondents must pass a quiz to demonstrate their understanding of the scenario before they can move to the next page.

4.1.3 Post-Hypothetical Scenario Module

The preceding module generates a hypothetical, controlled, and exogenous increase in household inflation expectations. Following that, the post-hypothetical scenario module (i) solicits posterior beliefs about other economic variables including spending, and (ii) examines the underlying mechanisms that drive the changes in household consumption spending. Soliciting posterior beliefs about other economic variables serves a dual purpose. It allows us to investigate whether higher inflation expectations affect respondents’ outlook on other economic variables, potentially enhancing our understanding of the relationship between inflation expectations and spending. Furthermore, it allows us to shorten the survey as we can tailor channels presented to respondents.

Specifically, the post-hypothetical scenario module begins with questions on how respondents would update their forecasts about economic variables, including household income growth, household financial uncertainty, the federal funds rate, and the general outlook of the economy. For each question, we provide the respondent with their prior answer and a summary of the hypothetical scenario. As discussed in Section 3, understanding how respondents adjust these economic expectations—transitioning from their prior to posterior expectations—contributes to our comprehension of the indirect channels through which inflation expectations influence consumption decisions.

As an example, for household income in the short-term treatment we ask, *“Earlier, you expected your household income to change by $X\%$ over the period from May 2023 to May 2024. In response to the change in your price expectations over the same period (see table below for a recap), how will you adjust your expectations about how much your household income would change?”* The response options are “adjust upwards by more than 3 percentage points”, “adjust upwards by 3 percentage points”, “adjust upwards by less than 3 percentage points”, “no change”, “adjust downwards by less than 3 percentage points”, “adjust downward by 3 percentage points”, and “adjust downward by more than 3 percentage points.” Note that respondents in the long-term treatments are asked for the average annual expectation over the 10-year period following the next quarter (e.g., May 2023 to May 2033).

Similarly, we elicit the posterior beliefs for how the federal funds rate would change. Respondents can select if they would “adjust upwards”, “no change”, or “adjust downwards” their expectation for the federal funds rate under the hypothetical scenario. Next, we assess if predicting the future financial situation of their household would “become more difficult”, “as difficult as before”, or “become less difficult” in the hypothetical scenario. Additionally, we ask about their general outlook of the economy under the hypothetical scenario where

options were “improve”, “no change”, or “worsen”.

As the last posterior, we ask respondents how their household’s planned spending in the next three months would change in the new scenario compared with their initial plan.⁶ Respondents are first presented with a qualitative question asking whether they expect to purchase the same amount and types of goods. If the answer is no, they then are asked whether their dollar spending will stay the same. If the answer is no, then they respond to the question of whether their spending will “increase” or “decrease.” This series of up to three questions allows us to separate respondents into four groups: households that will not change anything about their spending plans, households that will spend the same amount but change their basket of goods, households that will increase their spending, and households that will decrease their spending. The qualitative questions are then followed by a quantitative question which asks for their estimated spending under the hypothetical scenario.⁷

There may be concerns about whether survey respondents fully understand the hypothetical scenario and whether they are able to respond from the perspective of that setting. In order to ease the burden on survey participants, we paid close attention to the presentation of the material. We developed the survey with feedback from survey design experts at the Center for Survey Research at Indiana University, Bloomington. They provided input on the design of the survey as well as the phrasing of questions.

In asking for spending plans under a hypothetical scenario, we implicitly assume that the responses will be informative of actual behavior if the hypothetical were to arise in reality. While some have raised concerns about the plausibility of this assumption (Diamond and Hausman, 1994), there is growing, recent evidence that using stated choices or actual choices yield similar decisions in settings similar to ours. For instance, Fuster et al. (2021) suggest that when respondents face realistic and relevant hypothetical questions, as is the hypothetical situation in our survey, their responses are meaningful and informative. In addition, in the context of consumption decisions, Kreiner et al. (2013), Coibion et al. (2023), and D’Acunto et al. (2022) find that reported future spending plans in surveys align with actual spending.

⁶Respondents are informed that there is no right or wrong answer to survey questions, and we are only interested in their personal and subjective views on their actions in hypothetical scenarios. This information is to avoid participants interpreting the questions as an economics test with right and wrong answers.

⁷Their point estimate must be consistent with their qualitative answers. For instance, if the respondent’s initial plan for durable goods spending is \$X, in the qualitative question, the respondent states that their consumption will “increase” in the new scenario, if the respondent’s quantitative answer is then \$Y and $Y \leq X$, the respondent will see an error message that must be resolved before being allowed to move to the next page.

Channel Identification. We use two methods to investigate the mechanisms that guide how and why respondents alter their consumption plans in response to changes in inflation expectations. First, on the same page where we ask respondents how their household planned spending will change in response to the change in inflation expectations, we also ask respondents to write down considerations that played a role in their decision in an open-ended text box.

The open-ended questions elicit respondents’ considerations without priming them with information about any theoretical mechanisms. However, the open-ended questions have some limitations. Respondents’ answers may contain measurement errors due to their unwillingness to exert effort or their inability to fully describe their thought process. This leaves the interpretation and categorization of the responses to researchers’ subjective judgment (Andre et al., 2022). Furthermore, even when respondents can describe parts of the underlying mechanism(s) that drove their decisions, the descriptions are often insufficiently detailed to fully understand their views on all mechanisms. That is, we do not know whether and to what extent each mechanism plays a role.

To address these concerns, we complement the first method with a more structured approach. Respondents are shown individual channels sequentially—channels consistent with their previous responses—and asked whether each channel was a consideration in their thought process. Participants are shown all mechanisms that are consistent with their qualitative changes in consumption and their posterior expectations of other economic variables.⁸ For instance, respondents who state they would increase spending in the hypothetical scenario will exclusively see the channels that are consistent with an increase in current spending. With regard to posterior beliefs, again considering respondents with increased spending, they would be presented with the flexible income channel only if their income growth rate increased by more than the rise in inflation, or the nominal illusion channels only if their posterior income growth rose but less than the rise in inflation. This methodology mitigates the cognitive demands on respondents to evaluate all channels while preserving consistency within their survey responses.

Then, for the channels deemed relevant, we ask respondents to allocate 100 points across the listed mechanisms, to capture the extent to which each channel influenced their decision-

⁸There exists a possibility that channels counteracting the direction of consumption changes may also exert influence but are merely dominated by the principal channels. The rationale for exclusively inquiring about mechanisms consistent with the direction a household says their spending would change is twofold. First, in our pilot study, less than 10% of individuals report having counteracting considerations, and even fewer regard these opposing factors as somewhat significant in their decision-making. Second, assessing channels in both directions imposes excessive cognitive demands on respondents.

making. To avoid potential order effects, the sequence of the channels is randomized. We include, “Other reasons, as I mentioned in the previous open-text question,” always at the bottom of the list, in case we omitted a mechanism that a respondent feels is important. The responses provide us with a quantitative measure of how much each mechanism influences current consumption decisions.

4.1.4 Demographics Module

Next, the demographics module collects basic information about respondents including age, gender, education, working status, marital status, homeownership status, and household income. Besides these typical demographic questions, we also collect information on respondents’ financial characteristics and cognitive reflection abilities to understand and validate the workings of different mechanisms. For instance, we ask whether respondents have and how much they have in checking, savings, money market accounts, or certificates of deposit. We also ask respondents how much they can borrow from credit cards. Furthermore, we collect respondents’ information on various assets and debt holdings. Overall, these questions reveal respondents’ liquidity conditions, asset and debt positions which have been shown to matter for how inflation expectations affect consumption (McKay et al., 2016 and Doepke and Schneider, 2006). Finally, we ask three cognitive reflection test questions that measure respondents’ ability to override incorrect, reflexive answers (Frederick, 2005). The score in this test is positively correlated with other measures of intelligence and behavioral biases (e.g., D’Acunto et al., 2019 show that cognitive skills play a role in shaping inflation expectations and consumption decisions).

4.2 Survey Implementation

We recruited respondents through Dynata, an online sampling company, and conducted the main survey experiments in late February and March 2023. To participate in our survey, respondents were required to live in the United States and be at least 18 years old. Dynata provides a balanced sample that matches the average characteristics of the U.S. population in terms of gender, age, race, and census region. Dynata is a leading online sample provider with more than 62 million panelists who receive compensation in the form of cash and vouchers for completing surveys. As Haaland et al. (2020) discuss, Dynata is a commonly used platform for researchers to conduct survey research. Our respondents filled out an online questionnaire written in Qualtrics.

The median completion time for the survey was 19 minutes. Following data collection, we removed 49 incomplete responses and 10 responses with identical IP addresses. Additionally, we evaluated the potential for straight-lining bias in the demographic questions, whereby respondents consistently select the first or last option. Our analysis found that no respondents displayed such consistent behavior across all questions. Furthermore, we excluded respondents who did not provide relevant reasoning in the open-text box questions. To ensure that the quality of the responses was adequate, each open-box response was reviewed, independently, by two co-authors and designated as low, medium, or high quality. Low quality responses were answers such as “4”, “very nice”, or “searyha<rg.” We disqualified and removed responses as long as one of us labeled them as being low quality. Furthermore, two observations with extremely high prior monthly spending (\$100,000 and \$250,000) were discarded as outliers. We also removed three observations with negative posterior spending.⁹ This results in a cleaned sample of 2,003 observations.

Table 3: Comparison of Survey Participants and the U.S. Adult Population

	Main Experiment					Robustness	U.S. Pop.
	SD	SN	LD	LN	All	SD-10	
Demographics							
Age	60.97	61.37	58.41	59.85	60.15	60.29	47.96
White	0.85	0.92	0.89	0.9	0.89	0.84	0.64
Female	0.51	0.55	0.56	0.53	0.54	0.54	0.51
Has at Least a 4-Year College Degree	0.52	0.53	0.49	0.49	0.51	0.52	0.33
Married	0.65	0.63	0.61	0.63	0.63	0.57	0.53
Northeast	0.21	0.26	0.21	0.21	0.22	0.20	0.18
Midwest	0.18	0.21	0.22	0.26	0.22	0.22	0.21
South	0.4	0.38	0.41	0.39	0.39	0.38	0.38
West	0.21	0.15	0.15	0.14	0.16	0.21	0.23
Financial Characteristics							
Household Income \leq 50k	0.35	0.4	0.43	0.37	0.39	0.41	0.39
Household Income 50k-100k	0.36	0.33	0.33	0.31	0.33	0.33	0.3
Household Income 100k+	0.29	0.27	0.24	0.31	0.28	0.25	0.31
N	504	504	497	498	2003	2005	

Notes: This table compares the characteristics of the survey participants with the average characteristics of the U.S. adult population. For demographics and financial characteristics, comparisons are with the 2021 American Community Survey.

Table 3 presents the demographic and financial characteristics of our survey respondents and compares them with their adult population counterparts sourced from the 2021 American Community Survey. Various characteristics of the respondents in our sample correspond closely with their corresponding demographic features in the U.S. adult population. For instance, the female respondents constitute 54% of our sample and 51% of the overall U.S. population. The proportions of households within different income brackets and regional

⁹We did not restrict the posterior consumption to be non-negative, which we will control in future studies.

distributions also similar to their nationally representative counterparts.¹⁰

Nevertheless, there are some demographic differences between our sample and the general U.S. adult population. Households in our sample are more likely to have a college degree, be older, be married, and be White. To be able to make statements about the general U.S. adult population and control for these differences, we consistently present weighted statistics in Section 5. The weights applied in our analysis are designed to align the sample with the 2021 American Community Survey across multiple dimensions, including race, age, gender, marital status, region, household income, and education.¹¹

4.3 Robustness: Large Shock to Expected Inflation

In addition to our main treatments, we implemented a robustness check of our results using a larger shock to inflation expectations and a larger sample size. Specifically, we introduced a treatment identical in design to the SD treatment, with a key distinction in the hypothetical scenario module: inflation expectations for the year following the next three months were increased by *ten* percentage points instead of *three*. The sample size of this treatment, which we will refer to as SD-10 (standing for short-term, durable, 10 percentage point shock), was over 2,000 observations.

The SD-10 treatment addresses two potential concerns. First, the three percentage point change in inflation expectations in the main treatments could be perceived as small, especially given recent high inflation, and drive respondent inaction in spending changes. To mitigate this concern, we increased the magnitude of the shock to ten percentage points. Second, the initial sample size per treatment may have been insufficient to reveal significant differences.

¹⁰The observed mean differences across treatments for most individual characteristics are small. A pairwise Mann-Whitney U test was implemented to compare the equality of mean values of these characteristics across the four treatments. Out of 72 comparative analyses, 16 exhibited significant differences at the 10% significance level, which are nine more instances than would be statistically anticipated by random variation (See Appendix Table A1 for detailed results). This can be attributed to two potential factors. First, the survey firm Dynata did not incorporate stratification based on individual characteristics during the randomization process. Second, our sample size is big relative to traditional lab experiments; this tends to increase the likelihood of statistical significance between treatments. Our analysis controls for these characteristic differences by using demographics-weighted data. We also find that our main results remain unaffected by the re-weighting.

¹¹In our analysis, we employ the numerical iterative method known as “raking” to compute the weights. This technique is aimed at all demographic variables including race, age, gender, marital status, region, household income, and education. The process iteratively modifies the weight attributed to each subject until there is convergence between the sample distribution and the overall population across the specified variables. We then winsorize the weights at the 99th percentiles. After centering, the weights vary from 0.11 and 8.00, a range that is reasonable within this context.

Thus, we substantially increased the sample size for the SD-10 treatment. Note that we choose to amplify the shock in the SD treatment, because central banks, when intending to influence inflation expectations as a policy intervention, are more likely to adjust short-term rather than long-term expectations. Furthermore, as discussed in Section 3, durable goods tend may be more sensitive to changes in inflation expectations than non-durable goods.

We recruited participants through Dynata in early December 2023, following the same recruitment procedure and data-cleaning process as our main survey treatments.¹² In total, our robustness check treatment consists of a sample of 2,005 respondents. Table 3 shows the demographic and financial characteristics of participants in the SD-10 treatment are similar to the main survey samples. Thus when presenting the results of the SD-10 treatment, we apply the same weighting procedure and report weighted statistics.

5 Results

This section presents our main survey findings. We begin by examining respondents' prior expectations regarding price changes, outline their planned spending on durable and non-durable goods for the following three months, and further explore their expectations concerning various economic variables. Subsequently, we investigate how households update their economic expectations and planned consumption, in response to a hypothetical increase in expected inflation. We then assess which mechanisms are empirically important. Furthermore, the analysis delves into the relationship between individual characteristics and spending decisions. Finally, we investigate the treatment effects on belief updating, spending behavior, and the choice of underlying mechanisms.

5.1 Prior Expectations

Inflation expectations. Table 4 provides summary statistics for respondents' prior expectations. In our survey, respondents provided their inflation expectations over three distinct horizons: (i) the coming three months, (ii) the year following the next three months, and (iii) the average, annual inflation rate in the ten years following the next three months. The median expectation for these three periods was 2.5%, 4%, and 2%, respectively. For refer-

¹²Dynata employed the same sampling method. Following data collection, we excluded nine respondents who did not complete the survey's main questions, six duplicate IP addresses, and two participants reporting extreme monthly spending (over \$100,000). Additionally, we checked for straight-lining and unreasonable open-box responses.

ence, in March 2023 (when our survey was conducted), the University of Michigan Survey of Consumers reported similar median inflation expectations for comparable time intervals: 3.6% for the next year and 2.9% for the next five years.

Respondents expressed notable confidence in their short-run inflation expectations for the immediate three-month period, with 72% of participants being “sure” (57%) or “very sure” (15%) about their forecasts. Confidence levels were also high for price expectations over the year following the next three months, as 69% of respondents felt “sure” (54%) or “very sure” (14%) about their forecasts. However, for the ten-year forecast, confidence declined to 26% of respondents being “sure” or “very sure”. We find significant cross-sectional dispersion in inflation expectations. The 90th percentile exceeds 20% for all three horizons (see Appendix Figure A1 for the density distribution of the three inflation expectations forecasts). Due to outliers, which are common in survey-based inflation expectations, we also compute moments resilient to extreme observations, specifically Huber-robust means.¹³ The Huber-robust means, 3.38%, 4.76%, and 2.46%, are overall comparable to the median values.

Other economic expectations. In the pre-hypothetical scenario module, respondents were asked to forecast their average monthly expenditure on either durable or non-durable goods over the next three-months, depending on the treatment. The average values for the expected monthly expenditures on durable and non-durable goods were \$536 and \$858 (see Table 4 for more details). The observed cross-sectional spending differences are substantial, with a right-skewed distribution. Approximately 10% of respondents anticipated their monthly expenditure to exceed \$2,000 in the subsequent three months, and a handful of respondents reported expected monthly consumption to exceed \$5,000.¹⁴ The Huber-robust means for durable and non-durable goods were \$320 and \$763, respectively. The median values were \$160 for durable goods and \$500 for non-durables. In addition, participants were asked about their confidence in their expenditure projections. A substantial fraction—72% for durable goods and 79% for non-durable goods—articulated strong certainty, qualifying their forecasts as either “sure” or “very sure.”

¹³In our computation of the Huber robust mean, we incorporate demographic weights consistent with our approach for other summary statistics and analyses. Drawing from the standard Huber-robust method (as detailed in Hamilton 1992), demographic weights are integrated at two critical junctures. First, throughout the iterative process of determining the Huber weight, we apply both demographic and down-weighting factors to attenuate the influence of extreme values. Secondly, in the computation of the scaled residuals, which account for the median absolute deviation from the median residual, demographic weights are employed to ascertain the representative sample’s true median value.

¹⁴The density distribution of the expected spending of both durable and non-durable goods over the next three months is depicted in Appendix Figure A2.

Next, let us consider respondents’ expected income growth. We find that under the long-term scenario, respondents, on average, align their anticipated income growth trajectory closely with prevailing inflation expectations (e.g., the Huber means are 2.48% and 2.46% for income growth and inflation expectations, respectively). However, in the short-term scenario, both the Huber-robust mean and median for projected income growth are lower than concurrent inflation expectations (e.g., the Huber means are 3.15% and 4.76% for income growth and inflation expectations, respectively). This suggests households believe income-rigidity is stronger in the short-run than over the long-run, and indeed this difference is significant as we show in Section 5.6 when we discuss treatment effects.

Regarding the federal funds rate, most respondents expect interest rates to remain elevated over both short- and long-term horizons. Specifically, the median projection for the average federal funds rate over the decade following the immediate three months is 5%. Finally, in regard to financial predictability, a dominant share of the respondents perceive their future financial stability as either moderately or highly unpredictable.

Table 4: Descriptive Statics for Prior Expectations

Expectations for:	N	Mean	St. Dev.	Huber Mean	Huber St. Dev.	Median
<i>(A) Price Change (%)</i>						
over the next 3 months	2,003	6.41	13.08	3.38	5.36	2.50
over the 12 months following the next 3 months	2,003	7.83	15.77	4.76	7.64	4.00
over the 10 years following the next 3 months	2,003	6.41	17.63	2.46	5.39	2.00
<i>(B) Household Spending (\$)</i>						
durable goods per month over the next 3 months	1,001	535.86	1725.25	320.26	465.89	160.00
nondurable goods per month over the next 3 months	1,002	857.59	1117.45	762.50	776.42	500.00
<i>(C) FFR (%)</i>						
over the 12 months following the next 3 months	1,008	8.02	16.94	5.46	3.55	5.00
over the 10 years following the next 3 months	995	8.90	19.36	5.634	4.78	5.00
<i>(D) Income Growth Rate (%)</i>						
over the 12 months following the next 3 months	1,005	7.58	17.40	3.15	6.79	3.00
over the 10 years following the next 3 months	995	6.79	15.93	2.48	5.32	2.00
<i>(E) Household Financial Uncertainty</i>						
over the 12 months following the next 3 months	1,008	0.75	0.44			
over the 10 years following the next 3 months	995	0.88	0.32			

Notes: This table presents moments of various expectations observed prior to the hypothetical scenario module. For “household financial uncertainty,” responses indicating perceptions of “very difficult” or “moderately difficult” to predict are classified as one. Regarding expected household income growth rate over the 12 months following a three-month period, we exclude three observations exceeding a value of 5,000 due to their extreme nature. For continuous variables, Huber-robust means are reported to account for potential outliers.

5.2 Effects of Inflation Expectations on Expectations on Other Variables

Before investigating how changes in inflation expectations affect spending decisions, we explore the impact of increased inflation expectations on other relevant economic expectations: household income growth, household financial predictability, the federal funds rate, and the broader economic outlook. Recall we elicited responses on how households would adjust their expectations in the hypothetical scenario that their inflation expectations were higher.

We start by assessing the reaction of household income growth expectations following an increase in inflation expectations in Table 5 Panel A. Overall, only 7% of respondents anticipate their nominal income to fall below their initial expectation. In contrast, 47% of households expect their income would not change in the hypothetical scenario. About 11% would increase their income growth expectations by less than the rise in inflation expectations, while 35% expect their income to keep up with or even exceed the rise in inflation expectations.

With respect to the federal funds rate, the majority of respondents believe it will remain unchanged post-scenario (see Table 5, Panel B). Nonetheless, a substantial segment of about 39% of households expect interest rates will rise. This sizable fraction holds beliefs consistent with the Taylor rule which suggests the monetary authority should raise rates in response to higher inflation. Only a few households anticipate the federal funds rate to fall.

Next, in Table 5 Panel C we assess how households' own financial situation predictability changes following the hypothetical scenario. We find that 24% of respondents associate increased future inflation expectations with amplified financial unpredictability for the corresponding period. This aligns with the insights of [Friedman \(1977\)](#); [Ball et al. \(1990\)](#); [Binder \(2017\)](#). Yet, for the majority, an increase in future inflation expectations does not affect their perceptions of their financial stability.

Lastly, we turn to the change in the general economic outlook of respondents under the hypothetical scenario (see Table 5 Panel D). About 40% of the responses echo the stagflationary views of [Volcker \(2011\)](#) and [Kamdar \(2019\)](#). That is, many respondents correlate heightened inflation expectations with a deteriorating economic environment. The next largest group expects no change in the economic environment, and a minority anticipates an improvement in the economy.

Table 5: Posteriors of Economic Beliefs, by Treatment and Overall

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
<i>(A) Household Income Growth</i>					
Adjust downwards	4.9	10.3	6.7	5.4	6.6
No change	49.0	50.9	39.9	50.4	47.4
Adjust upwards by less than 3	12.0	12.1	10.9	10.7	11.4
Adjust upwards by 3	18.0	17.4	22.2	18.0	18.9
Adjust upwards by more than 3	16.1	9.2	20.4	15.5	15.6
<i>(B) Federal Funds Rate</i>					
Adjust upwards	34.9	39.8	43.0	40.2	39.4
No change	61.3	55.3	50.4	52.6	55.0
Adjust downwards	3.8	4.8	6.6	7.2	5.6
<i>(C) Financial Predictability</i>					
More difficult	19.4	25.3	23.6	28.6	24.1
As difficult as before	65.6	65.9	65.9	63.7	65.3
Less difficult	15.0	8.8	10.6	7.6	10.6
<i>(D) General Economic Outlook</i>					
Improve	25.3	20.7	25.9	22.6	23.7
No change	40.0	33.3	33.2	34.9	35.5
Worsen	34.8	46.0	40.9	42.6	40.8
N	504	504	497	498	2,003

Notes: Following the hypothetical scenario, respondents were asked how their expectations would change for their household income growth rate, the federal funds rate, their household’s financial predictability, and the general economic situation in the year following the next quarter (short-term treatments) or on average over the 10 years following the next quarter (long-term treatments). The table reports the percentage of respondents in each scenario that gave each possible response. The last row indicates the number of respondents in each treatment.

5.3 Effects of Inflation Expectations on Spending

Next, we analyze the effects of the hypothetical scenario on planned spending, considering both the extensive and intensive margins. Table 6 summarizes how respondents would adjust their spending plans in the hypothetical scenario. Regardless of the treatment, the majority (74%) expressed that an increase in expected inflation would not affect their spending over the upcoming three months. Approximately 20% would decrease spending, while a mere 6% would increase spending. The substantial fraction of respondents whose spending is unaffected challenges traditional perceptions about the interplay between inflation expectations and spending choices.

One may be concerned that the prevalence of ‘no change’ consumption responses is due to respondents’ fatigue or low effort in completing the survey. However, several indicators

suggest that this does not seem to be a material concern. First, the share of respondents choosing their posteriors would not change differs across economic variables. For example, only 35% of respondents stated there would be no change in their economic outlook while 65% of respondents said the predictability of their household financial situation would not change (see Table 5 Panels C and D). Second, the percentage of respondents selecting no change in various economic beliefs does not increase as the survey unfolds over time indicating that they do not choose the option because of fatigue. Third, respondents indicating ‘no change’ in consumption spent an average of 1,420 seconds, only 119 seconds less than the time spent by those signaling a change of any type, and this difference is not significant. In addition, this difference would overestimate the difference in effort because those who indicate that their spending would increase or decrease must respond to a few more questions in the survey: they must give a new spending number and often read and respond to more channels than those who indicate a ‘no change’ consumption response (although it was very unlikely that a subject would expect this at the point when they provided their consumption changes; that is, they could not intentionally choose ‘no change’ in order to reduce their response time). The comparison between ‘no change’ and ‘same spending different bundle’ captures the difference in effort level in more meaningful way. The response duration for the ‘same spending, different bundle’ group is 1,415 seconds, nearly identical to the ‘no change’ group. Finally, we examine the word counts in the open-ended responses. The word counts are similar across the consumption response groups, averaging 20.6 for respondents who make no change and 20.4 for respondents who make any change.¹⁵

As for the change in dollar spending (intensive margin), in the SD treatment, there is a small average increase in the expenditure on durable goods in the face of increased short-term inflation expectations. All the other treatments see a decrease in average spending. In terms of statistical significance, only the change in spending under the LD treatment is different from zero.¹⁶ These results are consistent with [Coibion et al. \(2023\)](#), who find higher inflation expectations have an inconsequential effect on non-durable expenditure but result in a pronounced decline for durable outlays. Our results also reveal a finer nuance: the reduction in durable consumption occurs when long-term inflation expectations rise yet dissipates when only short-term inflation expectations increase.

¹⁵Another concern may be the higher fraction of older people in our sample may bias responses toward ‘no change.’ While we do address this by applying sample weighting throughout the paper; we also present additional analyses in the Appendix. In Appendix Tables A2 and A3, we show the consumption response categories for respondents who are younger than 55 and 55 and over. The spending decisions of these age groups are not significantly different. For example, 75% of the 55 plus group choose not to change their dollar spending, and 74% for the 55 below group.

¹⁶We conduct a demographics-weighted ordinary least squares regression with robust standard errors. The dependent variable, the change in dollar spending, is regressed on a constant.”

Table 6: Spending Response

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Extensive Margin (Percentage)					
No Change	70.3	57.4	57.2	66.5	63.2
Same Spending Different Bundle	7.2	11.9	14.7	9.8	10.8
Increase	5.7	5.6	6.7	5.8	6.0
Decrease	16.8	25.0	21.4	17.9	20.0
Intensive Margin (Dollar Spending)					
Prior Spending	533.10	888.46	538.75	831.72	687.39
Spending Change	11.59	-6.40	-44.27**	-16.35	-13.86
Percentage Change	2.17%	-0.72%	-8.22%	-1.97%	-2.02%
N	504	504	497	498	2,003

Notes: After being presented with the hypothetical scenario, respondents indicated potential changes in their spending plan over the subsequent three months. The first part of the table presents the proportion of participants from each treatment group that aligned with each potential response (extensive margin). Furthermore, participants provided their revised spending plans post-scenario (intensive margin). The second part of the table shows the initial spending plans, changes in these plans, and the percentage changes at the aggregate level. The row “Spending Change” also indicates whether the number is significantly different from zero. The last row indicates the number of respondents in each treatment. ***, **, * denotes statistical significance at 1, 5, and 10 percent levels, respectively.

5.4 Underlying Channels

In this subsection, we explore the underlying channels through which inflation expectations affect spending decisions. We discuss separately each of the four possible consumption response categories: no change, same dollar spending but different bundle, decrease, and increase. For each response category, we discuss insights from all steps of the channel elicitation: open-text entries, selection from a list of proposed mechanisms about whether they are applicable, and weight assignment to all applicable mechanisms.

To analyze the open-text entries, we read each entry and categorize it into a channel. We find that some responses can easily be mapped into the mechanisms shown in Tables 1 and 2. Some explanations cannot be classified into any proposed mechanism, and we label those “other.” Other entries do not clearly explain why their spending responds to higher inflation or contain self-contradictory messages; we classify these as “uninformative”. We discuss the results of the classification below and present detailed results in appendix tables. We also present word clouds of the most commonly used words in the open-text boxes to get a complementary perspective of relevant considerations in the respondents’ thinking.

Regarding the second elicitation step, we present the fraction of households that select each proposed mechanism (as a percent of households in each spending response category).

Finally, we report the results of the weights applied to each applicable mechanism. Recall, the last option was “other”; i.e., other reasons they mentioned in the previous open-text question. As we analyzed the open-text input, we tried to match the reasons to our proposed mechanisms. In most situations, we identify only one single listed mechanism; in which case we think it is reasonable to move the weight assigned to “other” to that identified mechanism. Sometimes we identify two listed mechanisms, in which case we split the weights assigned to “other” to the two identified mechanisms equally. We summarize the average weights assigned to each mechanism below (see the appendix for more details).

5.4.1 Channels for ‘No Change’ Responses

Recall, we identified four potential mechanisms for why a respondent may not make any change to their current consumption in Table 2. Indeed, for the respondents who would not make any changes, we find the open-text responses can be classified into each mechanism (see Appendix Table A4). For example, one respondent wrote, “Prices are going to go up no matter what. I’m not going to change my spending on what I want,” which corresponds to our “not a consideration” channel. Another response read, “Having a budget and sticking to that budget,” which is consistent with the “fixed budget” channel. One subject explained, “With the general rise in percentage of my salary and my wife’s salary, I don’t think we would have much trouble keeping up with the rising costs,” and this is close to the “real income unchanged” channel. Among the identified mechanisms in the open-text boxes, the most common explanation is “not a consideration” followed by “fixed budget.”

While we read each response to categorize them into mechanisms, word clouds provide an objective sense of the open-box responses. Figure 2 presents a word cloud of the most commonly used words in the open-text box by respondents who make no changes in spending in the hypothetical scenario. While “change” is a commonly used word, it is unsurprisingly associated with negation (62% of the observations have a negation within the three words before or one word after). “Need” is also frequently used and typically used to describe how the respondent has to make purchases to meet their current needs and future inflation does not affect this. Words such as “plan”, “fixed”, “budget”, and “habit” are used often and suggest many of the respondents, even before any mechanisms were shown to them, were already thinking about their “fixed budget.”

For those who do not change their current consumption plans, the majority of the open text entries can be identified with our proposed channels. However, about a third of responses were classified as uninformative, which shows the importance of complementing the open text

budget,” with an average weight ranging from 30% to 36%. “Liquidity constraint” is assigned an average weight between 9% and 16%. “Real income unchanged” received an average weight ranging from 4% to 10%. Finally, 8% to 10% of the weight is assigned to “other” mechanisms.

Table 7: Households that Select Each Mechanism as a Percent of ‘No Change’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Fixed Budget	66.6	61.4	69.1	63.2	65.3
Not a Consideration	64.6	67.7	66.2	59.7	64.2
Liquidity Constraint	46.8	32.9	53.8	38.1	43.4
Real Income Unchanged	13.1	16.4	21.3	11.7	15.3
N	364	305	310	319	1,298

Notes: The table reports the percent of households in each treatment that selected that a given channel applies to them. Note that respondents could select more than one channel so the columns could add to above 100%. The last row indicates the number of respondents in each treatment that selected ‘no change’ in spending.

In summary, the reasons most predominately given for not changing consumption were: future inflation is “not a consideration” and having a “fixed budget” plan. This was the case in all mechanism-elicitation approaches. Some households also select “liquidity constraint” from the list of mechanisms, but infrequently mention it in the open-text box and put little weight on it in terms of importance. Households rarely indicate, in any context, that they expect their real income to remain unchanged.

5.4.2 Channels for ‘Same Spending, Different Bundle’ Responses

For individuals who would maintain their spending but alter their bundle, we identified two possible mechanisms: “fixed budget” and “liquidity constraint” in Table 2. Appendix Table A6 shows our classification of open text entries. The most mentioned reason is that they have a fixed budget. For example, one subject wrote, “Living on a fixed income the amount of money spent will stay the same. However the amount of items we buy will go down. I will be looking for cheapest options available.” The percent of open-text explanations that we identified to be consistent with “fixed budget” reasoning ranges from 30% (in treatment SD) to 66% (in treatment LN). Very few households, under 5% in all treatments, discussed “liquidity constraint” considerations. Figure 3 presents the words most commonly used in the open-text boxes. Consistent with our reading of the open-text boxes, there are indications

Table 8: Households that Select Each Mechanism as a Percent of ‘Same Spending, Different Bundle’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Fixed Budget	73.2	82.7	65.9	75.5	73.4
Liquidity Constraint	48.8	46.6	53.1	59.9	52.4
N	31	52	52	65	200

Notes: The table reports the percent of households in each treatment that selected that a given channel applies to them. Note that respondents could select more than one channel so the columns could add to above 100%. The last row indicates the number of respondents in each treatment that selected ‘same spending, different bundle’ in spending.

sumption basket are mostly driven by the fact they use a “fixed budget”. We find this across all mechanism-elicitation approaches. While respondents do select that the “liquidity constraint” channel applies to them, they rarely mention it in the open-text box and put little weight on it in terms of importance. Notice that these results are similar to those in the previous subsection. That is, the main reason households give for not changing their dollar spending, regardless of whether they keep their consumption basket the same or not, is fixed-budget plans. The main difference between the two groups’ mechanisms is that households that do not change anything often select “not a consideration”; however, households that keep their spending the same but change their basket inherently are making a change in their choices.

5.4.3 Channels for Decrease Responses

In Table 1 we identified six mechanisms for why households may decrease spending. We found evidence for five of these channels in the open-text entries (see Appendix Table A8). The only channel for which there was no evidence was the “debtor’s wealth effect (reverse).” The most identifiable channel is “rigid income”, and it is consistent with 7-20% of text entries. An example of this is, “Since the price of goods is increasing at a higher rate than I anticipated & my income will not keep pace with that increase in must decrease what I am spending.” A small percent alludes to “uncertainty” with comments like, “To cut back on my spending in order to save up for future preference and plan ahead in case of economic situation.” The majority of the entries cannot be clearly classified into the proposed mechanisms. Among the “other” mechanisms, the most significant explanation is what we call the “general wealth effect”: subjects feel they are poorer and they must spend less or find cheaper options in response to the higher prices. For example, one subject explained, “i will have to buy less

Table 9: Households that Select Each Mechanism as a Percent of ‘Decrease’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Savers Wealth Effect	79.2	92.4	79.3	97.5	87.0
Rigid Income	45.7	67.2	44.5	63.9	55.3
Variable Debt	22.8	30.1	35.1	49.5	34.3
Inflation Hedge	68.4	67.3	55.0	64.9	63.6
Uncertainty	26.6	36.6	37.0	52.9	38.1
Debtors Wealth Effect (reverse)	13.3	19.8	9.5	8.6	12.9
N	81	117	105	91	394

Notes: The table reports the percent of households in each treatment that selected that a given channel applies to them. Note that respondents could select more than one channel so the columns could add to more than 100%. The last row indicates the number of respondents in each treatment that selected ‘decrease’ in spending.

In summary, households that would decrease their consumption in response to higher expected inflation appear to be motivated by a decrease in their expected real wealth. The decrease in their wealth may be the result of the deterioration of their savings (“savers wealth effect”) or concerns about their future income keeping pace with inflation (“rigid income”). While almost never mentioned in the open-text, households did select “inflation hedge” motives from the mechanism list but then put low weight on this channel.

5.4.4 Channels for Increase Responses

In Table 1 we identified seven possible mechanisms for increasing spending in response to higher inflation expectations. From the text entries, we identify only two such mechanisms, “stockpiling” and “nominal illusion.” One respondent wrote, “If prices will go up it makes more sense to buy long-lasting items sooner than later,” which can be interpreted as stockpiling (see Appendix Table A10). A large fraction (40%) of subjects did not provide an informative explanation about their decision-making process. Relatedly, Figure 5 shows limited consensus in terms of words used in the open box. Among “other” mechanisms, a substantial fraction is what we labeled as a “mechanical increase” response. We asked subjects about their plans for spending in the next three months, and we emphasized that the prices in the next three months are as initially expected; however, some subjects still said something like, “I am expecting gas prices to rise more than 3% and food prices to rise more than 3%, so i adjusted my proposed spending accordingly.”

Table 10 shows the households that select each proposed mechanism in step two of the

Table 10: Households that Select Each Mechanism as a Percent of ‘Increase’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Intertemporal Substitution	71.2	41.5	76.4	56.1	62.9
Stockpiling	68.8	45.6	75.7	54.3	62.5
Debtors Wealth Effect	33.3	27.1	21.8	53.1	33.6
Flexible Income	5.2	9.4	20.8	48.6	21.4
Nominal Illusion	37.8	21.7	5.9	5.1	17.2
Uncertainty (reverse)	8.4	0.0	6.8	3.9	5.1
Variable Debt (reverse)	1.4	0.0	0.0	5.9	1.8
N	28	30	30	23	111

Notes: The table reports the percent of households in each treatment that selected that a given channel applies to them. Note that respondents could select more than one channel so the columns could add to above 100%. The last row indicates the number of respondents in each treatment that selected ‘increase’ in spending.

nels respondents overwhelmingly agreed with “stockpiling” and “intertemporal substitution”.

5.5 Effects of Individual Characteristics

While the majority of respondents keep their spending the same in light of higher expected inflation, about 20% of households would reduce spending and about 6% of households would increase spending. Why may this heterogeneity arise? To answer this, next we investigate the characteristics of individuals who decide to adjust their current consumption. For this, we conduct logit regressions to assess characteristics of the respondents who decrease consumption. We limit our logit analyses to those who decrease consumption because the sample size for those who increase consumption is too small for meaningful investigation.

The logit regression includes three sets of variables. The first set is comprised of demographic variables, including the respondent’s average cognitive reflection test (CRT) scores, education, gender, race, political affiliation, and age. The second set has selected financial variables: liquid savings and income. The third set contains the changes in economic beliefs following the hypothetical scenario (the change in the federal funds rate expectations, the change in own financial predictability, the change in own income growth expectations, and the change in general economic outlook). The regression results are shown in Table 11.

Among the demographic variables, we find that two factors, being female and being middle aged, significantly increase the likelihood of decreasing spending in response to higher

Table 11: Decrease in Consumption

Cognitive Avg	-0.023	(0.042)
College	-0.017	(0.029)
Female	0.054**	(0.026)
White	-0.033	(0.035)
<i>Political Stance</i>		
Democrat	-0.038	(0.034)
Prefer not to say or don't know	-0.074	(0.055)
Republican	-0.015	(0.033)
<i>Age</i>		
30 to 55	0.074*	(0.044)
55 to 65	0.103**	(0.051)
Above 65	0.041	(0.047)
<i>Liquid Savings</i>		
1k to 5k	-0.044	(0.037)
5k to 20k	-0.038	(0.039)
20k to 100k	-0.069	(0.042)
Above 100k	-0.098**	(0.046)
<i>Income</i>		
50k to 100k	0.073**	(0.031)
100k to 150k	0.076*	(0.046)
150k to 200k	0.069	(0.058)
Above 200k	0.079	(0.063)
<i>FFR Change</i>		
Adjust upwards	0.003	(0.030)
Adjust downwards	0.032	(0.063)
<i>Financial Predictability</i>		
More difficult	0.082**	(0.033)
Less difficult	-0.060*	(0.036)
<i>Income Growth</i>		
Adjust downwards	0.229***	(0.075)
Adjust upwards by less than 3	0.038	(0.044)
Adjust upwards by 3	0.050	(0.041)
Adjust upwards by more than 3	0.075*	(0.041)
<i>Economic Outlook</i>		
Improve	-0.014	(0.030)
Worsen	0.145***	(0.035)
N	1,998	

Notes: The table reports the marginal effects of a logit regression which regresses an indicator for ‘decrease’ consumption on selected demographic variables, liquid savings, income, and posterior beliefs. The marginal effects are relative to the omitted group (e.g., under 30 in age, less than 1k in liquid savings, under 50k in income, or no change for the economic posteriors). Standard errors are in parenthesis. ***, **, * denotes statistical significance at 1, 5, and 10 percent levels, respectively. The number of observations is 1,998 because some respondents dropped out before completing the questions on liquid savings and income.

inflation expectations. Other factors associated with a higher probability to decrease consumption such as lower CRT scores, not having a college degree, and being non-white; however, the coefficients of these variables are not statistically significant.

For the financial variables, we find that higher liquid savings are associated with a lower

likelihood of decreasing spending. Intuitively, households with more liquid savings could tap into savings to cope with higher future inflation and therefore may not need to cut current spending. Respondents with more than 100k liquid savings are 10 percentage points less likely to reduce their spending relative to the omitted group with less than 1k liquid savings, and this difference is significant. Respondents with 5k to 20k or 20k to 100k are also less likely (relative to the omitted group with less than 1k) to reduce spending; however, these differences are insignificant. Regarding income, households with middle incomes are more likely to reduce spending in response to higher inflation expectations relative to households with lower incomes. A possible reason is that low income households are more likely to be only purchasing necessities and are therefore less able to change spending. For high income households, inflation may be to be irrelevant for their spending decision: as suggested by the open-box comments, they have enough income to buy what they need or want.

Finally, we find that the likelihood of decreasing consumption is strongly associated with changes in economic beliefs. Specifically, individuals tend to decrease consumption if they expect the economy to worsen, their own financial predictability to worsen, or their income to decrease; the coefficients on these three belief terms are large and significant. For example, individuals who expect their own income growth to decline in the hypothetical scenario are 23 percentage points more likely to decrease consumption relative to those who expect their income growth to stay the same.¹⁷ Also, individuals who expect the general economic outlook to worsen are 15 percentage points more likely to decrease consumption relative to those who expect the economic outlook to stay the same. Overall, these results show that individuals who hold a stagflationary view of the economy are the most likely to reduce consumption in light of higher expected inflation. Note that the change in federal funds rate expectations does not have a significant effect on the likelihood of reducing spending. This may be due to the differential effect of higher interest rates on households that are savers versus debtors.

5.6 Treatment Effects

In this subsection, we examine treatment effects on spending decisions, posterior economic beliefs, and mechanism selection. In particular, we test the hypotheses about the treatment effects discussed in Section 3. For example, the duration of the increase in expected inflation may affect the posterior beliefs about own income growth, own financial predictability, the federal funds rate, or general economic outlook. In addition, the applicability of some

¹⁷There is one result that is somewhat puzzling. Those expecting the change in income growth to outpace the change in inflation are more likely to decrease their spending relative to the omitted group (who believe their income growth would remain the same), although the magnitude is moderate.

channels may vary based on the type of good or the duration of the rise in inflation expectations. For instance, stockpiling may be more common with durable rather than non-durable goods, and the saver’s wealth effect may be stronger in the long-term treatments relative to the short-term treatments. In the analyses that follow, we conduct logit regressions (for binary outcomes) and ordinary least squares regressions (for continuous outcomes) on dummy variables for being in the durable treatments and long treatments. All regressions were conducted with demographic weighting and robust standard errors.

Spending. We begin by examining the differences in spending behavior across treatments along the extensive margin. The first two columns of Table A12 show how the likelihood of decreasing or increasing spending depends on the two treatment variables, respectively. We observe a negligible difference in spending changes when contrasting durable versus non-durable goods and comparing long-term with short-term treatments. The results are consistent with those in Table 6, which shows the proportion of households that increase, decrease, or maintain their dollar spending is similar across all four treatments.

Next, we explore the differential impact of treatments on spending, with findings presented in the final column of Table A12. The difference in spending changes between durable and non-durable goods treatments is minor and lacks statistical significance. The reduction in household spending is more pronounced in long-term treatments compared to short-term ones, although the difference misses the conventional threshold for statistical significance ($p = 0.179$). Recall that Table 6 demonstrates that the long-term, durable treatment did have a decline in consumption spending that was significantly different from zero; however, the other treatments did not see a significant change in spending. To summarize the results in Tables 6 and A12, we find no significant difference between treatments, but the decline in spending in the long-term, durable treatment is significantly different from zero.

Posterior beliefs. Table A13 shows how the duration of the increase in inflation expectations affects the probability that respondents expect their income growth to keep up with or exceed inflation, the federal funds rate to increase, their financial uncertainty to increase, and the economy to worsen. Households in long-term treatments, relative to short-term treatments, are significantly more likely to expect their income to keep up or outpace inflation. Also, households in the long-term treatments are significantly more likely to expect the federal funds rate to rise. Households in the long-term treatments also expect higher financial uncertainty and a worse economy, but the difference is not statistically significant at the 10% level. Note we do not investigate the differences in posteriors across surveys in which we ask

about durable vs non-durable consumption, as this should not affect individuals' economic posteriors.

Channels for ‘no change’ and ‘same spending, different bundle’ responses. The channels proposed for ‘no change’ and ‘same spending, different bundle’ responses are “liquidity constraint”, “fixed budget”, “not a consideration”, and “real income unchanged.” Only for the “liquidity constraint” channel is there a clear way in which the applicability of the channel may vary across treatments. Namely, liquidity constraints are likely to be more important for durables, which tend to be big-ticket items, than for non-durables. We run a logit regression where the dependent variable is the indicator of households selecting “liquidity constraints,” pooling the 1,498 households who chose ‘no change’ and ‘same spending, different bundle’ responses. Indeed, being in the durable treatment increases the likelihood of selecting this channel by 1.7 percentage points, relative to the non-durable treatment, although the effect is insignificant.

Channels for ‘decrease’ responses. Next, we run logit regressions to analyze how the probability of choosing each channel for decrease responses is affected by the treatment variables.¹⁸ For each channel, we include either the long-term treatment or the durable treatment as a regressor, depending on whether there is a plausible economic prediction about the effect of the treatment variable on the likelihood of that channel being applicable.

The importance of the three indirect channels, “rigid income,” “variable debt” and “uncertainty,” may vary based on the duration of higher inflation so we include a dummy variable for the long-term treatment. However, the type of good is unlikely to affect the applicability of these channels so we omit the durable good dummy. “Saver’s wealth” is a direct channel. It is reasonable to assume that more persistent inflation more significantly erodes the purchasing power of savings, leading to a stronger reduction in spending. It is unclear, however, whether the effect is stronger for durable or non-durable goods; therefore, we include only the dummy variable “long treatment” in the regression for this channel. Finally, the “inflation hedge” is a direct channel and it depends clearly on the type of spending: one expects a stronger decrease response for non-durable goods because they provide a weaker hedge against inflation relative to durable goods. In contrast, it is not clear how the persistence of higher inflation expectations affects the strength of the “inflation hedge” channel. On the

¹⁸For this analysis, we omit the last channel, “debtor’s wealth effect (reverse),” because it was included in the survey for symmetry and completeness instead of clear economic considerations. Further, this channel was selected very rarely.

one hand, one would want to invest in assets such as real estate to hedge more persistent inflation. On the other hand, the mortgage rate and financial uncertainty may be higher, which tends to reduce the probability of investing in real estate. The overall effect of the long-term treatment on the strength of the inflation hedge channel is therefore not clear. For this reason, in the regression analysis of this channel, we include only the dummy variable for the durable treatment.

We collect the results in Appendix Table A14. Comparing the short and long-term treatments, households are more likely to select “saver’s wealth effect”, “variable debt”, “uncertainty”, and less likely to select “rigid income” in the long-term treatment. Comparing the durable and non-durable treatments, households are less likely to select “inflation hedge” in the durable treatment. However, the treatment effects are statistically insignificant except for the effect of the long-term treatment on the channel “variable debt.”

Channels for ‘increase’ responses. Next, we test treatment effects on the probability that a household indicating an increase in spending selects a channel as being applicable. There are two direct channels, “intertemporal substitution” and “stockpiling.” Economic models suggest that these effects may be stronger for durable goods relative to non-durable goods (Bachmann et al., 2015), and for long duration of the increase in expected inflation relative to short duration (recall the New Keynesian Phillips curve solved-forward in Equation 1). There are three indirect channels functioning through the induced changes in expectations in other economic variables.¹⁹ Intuitively, the “debtor’s wealth effect” may be stronger in the long-term treatment as persistent inflation results in a lower real value of fixed nominal debts. The “Flexible income” channel may be stronger in the long-term treatment because income is more likely to account for inflation if it is more persistent. Related to this, the “nominal illusion” channel should be weaker in the long-term treatment (this channel only applies if the increase in income falls short of the increase in inflation). To test these conjectures, we run separate logit regressions to see how the probability of choosing each channel depends on two dummy variables to indicate whether the respondent (i) was asked about durable or non-durable goods and (ii) was in the long or short-term treatment.

The results are shown in Table A15. Consistent with these conjectures, respondents who are asked about spending on durable goods are more likely (relative to those asked about non-durable goods) to say “intertemporal substitution” or “stockpiling” played a role

¹⁹We omit the analysis of two channels, “uncertainty (reverse)” and “variable debt (reverse),” which are included for symmetry and completeness, not based on clear economic considerations. These channels were almost never selected.

in their reasoning for increasing consumption. The effect is significant for “intertemporal substitution” (for “stockpiling” the p -value is 0.11). For the three indirect channels, the coefficients on the long-term treatment variable have expected signs, and are statistically significant at 5% level for “flexible income” and at the 1% level for “nominal illusion.” The coefficient on “debtor’s wealth effect” is not significant at the 10% level.

6 Robustness: Large Shock to Expected Inflation

So far, our analysis has presented results from our main treatments. These findings show that higher inflation expectations does not stimulate spending. We now turn our attention to a robustness check, which investigates the response of durable spending to a ten percentage point increase in short-term inflation expectations (SD-10). This treatment allows us to evaluate the robustness of our findings in the face of more pronounced shock to inflation expectations and a larger sample size. The associated tables are in Section [A.5](#).

Prior Expectations. Table [A16](#) reports prior expectations for the SD-10 treatment. Compared with our main survey conducted in March 2023, inflation expectations over the coming three months and the year following the next three months are lower in the robustness treatment conducted in December 2023. This is unsurprising, given realized inflation fell between the surveys. The median expectation for the coming three months, the year following the next three months, and the average annual inflation rate in the ten years following the next three months was 1.5%, 3%, and 2%, respectively. For reference, in December 2023, the University of Michigan Survey of Consumers reported similar inflation expectations for comparable time intervals: 3.1% for the next year and 2.8% on average for the next five years. We also find a decrease in the federal funds rate expectations in the SD-10 treatment relative to the main sessions, revealing that respondents expect lower interest rates. For durable goods spending, household income growth rate, and financial uncertainty, there are no significant differences between the samples.

Effects of Inflation Expectations on Other Expectations. Table [A17](#) reports posterior economic beliefs for the SD-10 treatment as well as the short-term treatments in our main experiment (SD and SN) for comparison. Note that for posterior economic expectations, we pool SD and SN as the comparison group, since the type of goods we ask about is irrelevant. We find that when facing higher inflation expectations, respondents are less likely to expect their real income to stay the same or rise. In the SD-10 treatment, only 24.0% of respondents think their income growth will keep up or surpass the inflation rate.

In contrast, the share of respondents who think their income growth will keep up or surpass inflation is 30.4% in the SD and SN treatments, where the shocks to inflation expectations are three percentage points (this is a significant difference with $p = 0.022$). Interestingly, in the SD-10 treatment, a larger share of respondents expect the central bank will lower the federal funds rate in the hypothetical scenario, compared to the SD and SN treatments. This difference is significant ($p < 0.01$); however, the share of the population is only 10% in the SD-10 treatment and 4% in the SD and SN treatments. The effects on financial predictability and general economic outlook in the SD-10 treatment are similar to those in the SD and SN treatments.

Effects of Inflation Expectations on Spending and Underlying Channels. Table A18 examines the effects of the hypothetical scenario on planned spending for the SD-10 treatment and compares it with the SD treatment. The extensive margin results are similar. Namely, the fraction of subjects who keep the same spending, decrease, and increase are 76%, 18%, and 6% in the SD-10 treatment versus 77%, 17%, and 6% in the SD treatment. However, regarding the effect on spending, a 10 percentage point increase in inflation expectations results in a statistically significant reduction of 3.73% in average durable spending ($p < 0.01$).

Turning to the channels, Tables A19 to A22 report the likelihood of each mechanism being selected as relevant to the respondent’s reasoning. For subjects in the SD-10 treatment who did not change their spending, considerations such as “fixed budget,” “not a consideration,” and “liquidity constraint” are chosen at a similar frequency as in the SD treatment. This underscores the robustness of one of our key findings: the underlying mechanisms driving rigidity in spending decisions to inflation expectations are not an artifact of the magnitude of the shock. Instead, they reflect respondents’ cognitive processes (e.g., “fixed budget,” “not a consideration”) or constrained financial conditions (e.g., “liquidity constraint”). For subjects who decreased their spending, nearly all mechanisms, except for “inflation hedge” and “debtors wealth effect (reverse),” saw an increase in their selection from the SD to the SD-10 treatment. The largest increase was in the “rigid income” channel, from 45.7% to 62.6%. Amplified concerns about rigid incomes, may explain the more pronounced drop in spending in the SD-10 treatment. For subjects who increased their spending, we observe similar selections for the “intertemporal substitution” and “stockpiling” channels between the SD and SD-10 treatments, moving from 71.2% and 68.8% in the SD treatment to 65.0% and 75.4% in the SD-10 treatment. There is a significant decrease in the likelihood of selecting the “nominal illusion” channel (from 37.8% in the SD treatment to 18.0% in the SD-10 treatment).

In summary, the results from the robustness treatment further reinforce our key findings from the main experiment. That is, it is unlikely that current spending rises with higher inflation expectations. If anything, the SD-10 treatment shows that average spending responses to higher inflation expectations are likely to be negative, as more respondents believe that income will not keep pace with rising prices.

7 Conclusion

This paper studies how inflation expectations affect spending plans and investigates the empirical importance of a variety of different channels. Using a new survey instrument that features hypothetical scenarios and mechanism-elicitation questions, we provide evidence that a majority of households (about 74%) do not alter their current spending following an increase in expected inflation. Respondents say this is due to following a fixed budget plan or that future inflation simply does not affect their current decisions. A minority of households (about 20%) say they would decrease their spending in response to higher expected inflation, commonly due to saver's wealth effects or nominal income rigidity. Very few households (about 6%) would increase their spending plans, typically citing intertemporal substitution or stockpiling as the main reasons. The average effect of an increase in expected inflation is either insignificant or a significant decrease in spending (depending on the treatment), implying that using inflation expectations as a policy tool to encourage consumer spending could backfire.

What explains the heterogeneity in consumption responses? We find that demographic variables and financial status variables have some explanatory power; however, changes in beliefs about other variables related to higher inflation expectations are very important. Respondents who decrease their expectations about their income growth, financial predictability, and the overall economic outlook following higher inflation expectations tend to reduce their spending.

Our survey methodology can be extended to study many interesting and related questions. We studied the effect of an increase in expected inflation; however, it would be instructive to assess alternative settings regarding the direction of the changes in expectations. Another interesting avenue to explore is the source of higher inflation expectations. We do not specify the source of changes in expected inflation, and this may affect how households respond. Furthermore, we focus on the effects of changes in inflation expectations; however,

the framework can be adapted to the study of interest rate policies.²⁰ For instance, it would be interesting to assess how households respond to changes in nominal interest rates and inflation expectations that induce the same change in the real interest rate. Finally, we study household decisions; however, it would be informative to conduct a similar study on firms to identify the different channels through which inflation expectations and nominal interest rates affect firm decisions.

²⁰A new literature uses surveys to study interest rate policies. [Jain and Kostyshyna \(2023\)](#) study the relationship between interest rates and inflation expectations. [D'Acunto et al. \(2023a\)](#) study the channels of monetary policy transmission.

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A Additional Tables

A.1 Demographics

In this section, we present an analysis of the demographic characteristics of participants across different treatments within our main survey experiments.

Appendix Table A1: Pairwise randomization tests between treatments

1 = "SD"; 2 = "SN"; 3 = "LD"; 4 = "LN"	[1] v.s. [2]	[1] v.s. [3]	[1] v.s. [4]	[2] v.s. [3]	[2] v.s. [4]	[3] v.s. [4]
Age	0.6800	0.009	0.2669	0.0013	0.1117	0.1413
White alone	0.0007	0.0879	0.0430	0.0913	0.1701	0.7508
Female	0.1856	0.0906	0.4445	0.7091	0.5789	0.3550
Has at Least a 4-Year College Degree	0.8010	0.4328	0.3139	0.3003	0.2082	0.8248
Married	0.4307	0.1226	0.5041	0.4482	0.9064	0.3825
Northeast	0.0373	0.9099	0.9851	0.0498	0.0397	0.9249
Midwest	0.2782	0.1479	0.0036	0.7875	0.0822	0.1434
South	0.5183	0.5698	0.7640	0.2254	0.7311	0.3865
West	0.0067	0.0191	0.0051	0.7205	0.9198	0.6477
Household Income 50k	0.1350	0.0173	0.5042	0.3731	0.4111	0.0877
Household Income 50k–100k	0.3542	0.3673	0.1246	0.9828	0.5405	0.5277
Household Income 100k+	0.4392	0.0833	0.4163	0.3364	0.1132	0.0112

Notes: This table presents the p-values from the pairwise Mann-Whitney U tests of respondents' demographic characteristics across all possible pairs of the four distinct treatment groups. Each treatment is denoted as follows: 'SD' corresponds to the short-term durable treatment, 'SN' corresponds to the short-term non-durable treatment, 'LD' represents the long-term durable treatment, and 'LN' represents the long-term non-durable treatment.

A.2 Spending Responses for Different Age Groups

In this section, we present an analysis of spending responses, comparing two age groups: respondents younger than 55 and respondents 55 and over.

Appendix Table A2: Spending Response (55 and Over)

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
No Change	73.1	58.5	69.4	64.1	67.1
Same Spending Different Bundle	3.4	8.4	7.1	11.2	8.2
Increase	4.0	5.1	5.6	4.1	5.0
Decrease	19.5	28.1	17.8	20.6	19.7
N	365	367	322	346	1,400

Notes: After being presented with the hypothetical scenario, respondents indicated potential changes in their spending plan over the subsequent three months. The table presents the proportion of participants from each treatment group that aligned with each potential response (extensive margin), for respondents who are 55 or older. The last row indicates the number of respondents in each treatment. Weighting over demographic characteristics is not applied.

Appendix Table A3: Spending Response (Younger than 55)

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
No Change	68.5	56.5	49.9	68.2	59.5
Same Spending Different Bundle	9.6	15.3	19.2	8.8	14.1
Increase	6.8	6.2	7.4	7.0	6.8
Decrease	15.1	22.0	23.5	16.1	19.6
N	139	137	175	152	603

Notes: After being presented with the hypothetical scenario, respondents indicated potential changes in their spending plan over the subsequent three months. The table presents the proportion of participants from each treatment group that aligned with each potential response (extensive margin), for respondents who are younger than 55. The last row indicates the number of respondents in each treatment. Weighting over demographic characteristics is not applied.

A.3 Channels

This section provides the supplementary tables for the channel analysis. Discussion of these tables can be found in Section 5.4.

Appendix Table A4: Households Whose Open-Text Is Consistent with Each Listed Mechanism as a Percent of ‘No Change’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Fixed Budget	13.9	20.2	14.9	33.1	20.5
Not a Consideration	39.4	44.3	45.8	45.3	43.4
Liquidity Constraint	1.9	3.4	0.9	1.1	1.7
Real Income Unchanged	1.2	3.3	2.8	3.1	2.5
Other	8.5	5.3	9.3	4.5	7.0
Uninformative	40.5	32.6	32.1	26.8	33.3
N	364	305	310	319	1,298

Notes: The table reports the percent of households whose open-text explanation is consistent with a given proposed channel. Note that the explanation could be classified into more than one channel so the columns could add to more than 100%. The last row indicates the number of respondents in each treatment that selected ‘no change’ in spending.

Appendix Table A5: Weights on Proposed Mechanisms: Average of ‘No Change’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Fixed Budget	29.5	33.4	35.9	36.2	33.6
Not a Consideration	36.1	38.9	34.6	36.2	36.3
Liquidity Constraint	16.4	8.5	15.3	13.3	13.8
Real Income Unchanged	4.0	9.2	6.1	6.7	6.2
Other	13.9	10.0	8.0	7.6	10.1
N	364	305	310	319	1,298

Notes: The table reports the weights (in %) put on proposed mechanisms averaged across households. If the respondent selects “Other reasons as explained in the open text” and if the open text is identified to be consistent with a proposed mechanism, then we transfer the weight of that to the identified mechanism. Sometimes we identify two proposed mechanisms, in which case we split the weight equally between the two mechanisms. The numbers in each column add up to 100%.

Appendix Table A6: Households Whose Open-Text Is Consistent with Each Proposed Mechanism as a Percent of ‘Same Spending, Different Bundle’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Fixed Budget	29.8	50.9	31.0	65.6	43.5
Liquidity Constraint	5.0	4.1	1.4	0.9	2.6
Other	28.4	3.8	18.9	5.0	13.9
Uninformative	41.3	42.0	49.2	29.4	41.5
N	31	52	52	65	200

Notes: The table reports the percent of households whose open-text explanation is consistent with a given listed channel. Note that the explanation could be classified into more than one channel so the columns could add to more than 100%. The last row indicates the number of respondents in each scenario that selected ‘same spending, different bundle’ in spending.

Appendix Table A7: Weights on Proposed Mechanisms: Average of ‘Same Spending, Different Bundle’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Fixed Budget	36.7	65.4	55.3	70.5	57.8
Liquidity Constraint	14.7	15.9	18.9	20.1	17.7
Other	48.7	18.6	25.8	9.4	24.5
N	31	52	52	65	200

Notes: The table reports the weights (in %) put on proposed mechanisms averaged across households. If the respondent selects “Other reasons as explained in the open text” and if the open text is identified to be consistent with a proposed mechanism, then we transfer the weight of that to the identified mechanism. Sometimes we identify two proposed mechanisms, in which case we split the weight equally between the two mechanisms. The numbers in each column add up to 100%.

Appendix Table A8: Households Whose Open-Text Is Consistent with Each Proposed Mechanism as a Percent of ‘Decrease’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Savers Wealth Effect	0.0	0.0	1.4	0.0	0.4
Rigid Income	12.5	10.1	19.6	7.1	12.6
Variable Debt	0.0	0.3	0.0	0.0	0.1
Inflation Hedge	0.9	0.0	0.0	1.3	0.5
Uncertainty	7.1	0.8	2.4	2.8	3.1
Debtor’s Wealth Effect(Reverse)	0.0	0.0	0.0	0.0	0.0
Other	42.9	58.7	47.3	76.8	56.1
Uninformative	36.6	30.1	29.3	12.1	27.2
Other(General Wealth Effect)	39.5	55.8	35.5	69.1	49.6
N	81	117	105	91	394

Notes: The table reports the percent of households whose open-text explanation is consistent with a given proposed channel. Note that the explanation could be classified into more than one channel so the columns could add to more than 100%. The last row indicates the number of respondents in each treatment that selected ‘decrease’ in spending.

Appendix Table A9: Weights on Proposed Mechanisms: Average of ‘Decrease’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Savers Wealth Effect	20.6	24.9	23.3	20.5	22.5
Rigid Income	16.7	28.8	18.1	27.2	22.7
Variable Debt	4.1	6.9	7.9	14.4	8.3
Inflation Hedge	25.2	9.2	10.4	10.6	13.5
Uncertainty	10.8	13.2	13.9	16.8	13.7
Debtors Wealth Effect (reverse)	3.7	6.5	2.7	1.8	3.7
Other	18.8	10.4	23.8	8.7	15.6
N	81	117	105	91	394

Notes: The table reports the weights (in %) put on proposed mechanisms averaged across households. If the respondent selects “Other reasons as explained in the open text” and if the open text is identified to be consistent with a proposed mechanism, then we transfer the weight of that to the identified mechanism. Sometimes we identify two proposed mechanisms, in which case we split the weight equally between the two mechanisms. The numbers in each column add up to 100%.

Appendix Table A10: Households Whose Open-Text Is Consistent with Each Listed Mechanism as a Percent of ‘Increase’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Intertemporal Substitution	0.0	0.0	0.0	0.0	0.0
Stockpiling	18.0	0.0	1.8	3.3	6.0
Debtors Wealth Effect	0.0	0.0	0.0	0.0	0.0
Flexible Income	0.0	0.0	0.0	0.0	0.0
Nominal Illusion	0.0	18.5	0.6	0.0	3.9
Uncertainty (reverse)	0.0	0.0	0.0	0.0	0.0
Variable Debt (reverse)	0.0	0.0	0.0	0.0	0.0
Other	30.3	46.5	52.2	31.6	40.3
Uninformative	51.7	35.0	45.3	65.2	49.8
N	28	30	30	23	111

Notes: The table reports the percent of households whose open-text explanation is consistent with a given proposed channel. Note that the explanation could be classified into more than one channel so the columns could add to more than 100%. The last row indicates the number of respondents in each treatment that selected ‘increase’ in spending.

Appendix Table A11: Weights on Proposed Mechanisms: Average of ‘Increase’ Households

	(1)	(2)	(3)	(4)	(5)
	SD	SN	LD	LN	All
Intertemporal Substitution	21.5	7.5	17.2	8.9	14.3
Stockpiling	25.4	21.8	32.9	14.6	24.1
Debtors Wealth Effect	5.8	7.6	6.7	5.9	6.5
Flexible Income	0.9	1.9	2.7	16.7	5.6
Nominal Illusion	4.4	27.8	1.5	1.4	7.5
Uncertainty (reverse)	5.7	0.0	2.4	0.8	2.4
Variable Debt (reverse)	0.4	0.0	0.0	3.0	0.8
Other	35.8	33.3	36.8	48.7	38.8
N	28	30	30	23	111

Notes: The table reports the weights (in %) put on proposed mechanisms averaged across households. If the respondent selects “Other reasons as explained in the open text” and if the open text is identified to be consistent with a proposed mechanism, then we transfer the weight of that to the identified mechanism. Sometimes we identify two proposed mechanisms, in which case we split the weight equally between the two mechanisms. The numbers in each column add up to 100%.

A.4 Treatment Effect

In this section, we provide the tables for treatment effect analysis. Discussion of these tables can be found in Section 5.6.

Appendix Table A12: Consumption Change: Treatment Effects

	(1)	(2)	(3)
	Decrease	Increase	Dollar Change
Durable Treatment	-0.022 (0.028)	0.005 (0.018)	-5.774 (24.935)
Long Treatment	-0.009 (0.028)	0.006 (0.018)	-34.319 (25.517)
N	2,003	2,003	2,003

Notes: The table reports treatment effects, captured by the two dummy treatment variables “durable treatment” and “long treatment,” on consumption responses. The first two columns report the marginal effects of logit regressions where the regressands are the indicators of a decrease in spending and an increase in spending, respectively. The last column reports the result from an OLS regression with the dollar change in consumption as the regressand. Robust standard errors are in parenthesis. ***, **, * denotes statistical significance at 1, 5, and 10 percent levels, respectively.

Appendix Table A13: Posterior Economic Beliefs: Treatment Effects

	(1)	(2)	(3)	(4)
	Income Keep Up	FFR Increase	Higher Uncertainty	Worse Economy
Long Treatment	0.072** (0.036)	0.026* (0.014)	0.041 (0.030)	0.020 (0.034)
N	2,003	2,003	2,003	2,003

Notes: The table reports the marginal effects of a logit regression which regresses the indicators of posterior beliefs on a constant and a dummy variable for “long treatment.” The dependent variable of the first regression, “income keep up” is equal to 1 if the household expects their income will keep up with inflation, i.e., the growth rate is equal to or higher than 3 percentage points following the hypothetical scenario. Robust standard errors are in parenthesis. ***, **, * denotes statistical significance at 1, 5 and 10 percent levels, respectively.

Appendix Table A14: Channels for ‘Decrease’ Responses: Treatment Effects

	(1)	(2)	(3)	(4)	(5)
	Saver’s Wealth	Rigid Income	Variable Debt	Inflation Hedge	Uncertainty
Long Treatment	0.013 (0.067)	-0.041 (0.080)	0.150** (0.071)		0.123 (0.075)
Durable Treatment				-0.052 (0.071)	
N	394	394	394	394	394

Notes: The table reports the marginal effects of logit regressions which regress the indicators of households selecting each of the five channels for decreasing consumption response on the dummy variables “durable treatment” and “long treatment.” All respondents who choose to decrease spending were presented the two direct channels, “variable debt” and “inflation hedge.” The three indirect channels were presented only if the respondent’s expectation about a relevant economic variable was consistent with the channel (for example, “rigid income” was shown if the respondent indicated an increase in income growth lower than the change in inflation rate). Robust standard errors are in parenthesis. ***, **, * denotes statistical significance at 1, 5 and 10 percent levels, respectively.

Appendix Table A15: Channels for ‘Increase’ Responses: Treatment Effects

	(1)	(2)	(3)	(4)	(5)
	Intertemporal	Stockpiling	Debtor’s WE	Flexible Income	Illusion
Durable Treatment	0.250* (0.137)	0.225 (0.139)			
Long Treatment	0.100 (0.133)	0.081 (0.135)	0.057 (0.151)	0.274** (0.136)	-0.229*** (0.082)
N	111	111	111	111	111

Notes: The table reports the marginal effects of logit regressions which regress the indicators of households selecting each of the five channels for increasing consumption response on the dummy variables “durable treatment” and “long treatment.” All respondents who choose to increase spending were presented the first two (direct) channels. The last three (indirect) channels were presented only if the respondent’s expectation about a relevant economic variable was consistent with the channel (for example, “flexible income” was shown if the respondent indicated an increase in income growth equal or higher than the change in inflation rate). Robust standard errors are in parenthesis. ***, **, * denotes statistical significance at 1, 5 and 10 percent levels, respectively.

A.5 Robustness Check

In this section, we provide supplementary tables for the SD-10 treatment. Discussion of these tables can be found in Section 6.

Appendix Table A16: Descriptive Statics for Prior Expectations

Expectations for:	N	Mean	St. Dev.	Huber Mean	Huber St. Dev.	Median
(A) <i>Price Change (%)</i>						
over the next 3 months	2,003	5.20	12.24	2.19	4.62	1.50
over the 12 months following the next 3 months	2,004	6.44	14.41	3.23	6.50	3.00
over the 10 years following the next 3 months	2,002	5.29	12.32	2.48	4.54	2.00
(B) <i>Household Spending (\$)</i>						
durable goods per month over the next 3 months	2,005	679.65	2174.68	259.40	490.51	167.00
(C) <i>FFR (%)</i>						
over the 12 months following the next 3 months	2,005	7.41	12.02	4.96	3.29	5.00
(D) <i>Income Growth Rate (%)</i>						
over the 12 months following the next 3 months	2,005	6.81	16.86	3.46	6.87	3.00
(E) <i>Household Financial Uncertainty</i>						
over the 12 months following the next 3 months	2,005	0.80	0.40			

Notes: This table presents moments of various expectations observed prior to the hypothetical scenario module. For “household financial uncertainty,” responses indicating perceptions of “very difficult” or “moderately difficult” to predict are classified as one. Regarding price expectations, we exclude we omit two, one, and three subjects, respectively, for different time periods, whose expected price changes exceed 200%. For continuous variables, Huber-robust means are reported to account for potential outliers.

Appendix Table A17: Posteriors of Economic Beliefs, by Treatment

	(1)	(2)
	SD-10	SD+SN
<i>(A) Household Income Growth</i>		
Adjust downwards	7.8	7.6
No change	53.3	50.0
Adjust upwards by less than 10 (3)	15.0	12.1
Adjust upwards by 10 (3)	13.4	17.7
Adjust upwards by more than 10 (3)	10.6	12.7
<i>(B) Federal Funds Rate</i>		
Adjust upwards	33.0	37.4
No change	57.2	58.3
Adjust downwards	9.9	4.3
<i>(C) Financial Predictability</i>		
More difficult	24.1	22.4
As difficult as before	65.8	65.8
Less difficult	10.2	11.9
<i>(D) General Economic Outlook</i>		
Improve	21.5	23.0
No change	39.1	36.7
Worsen	39.4	40.4
N	2,005	1,008

Notes: Following the hypothetical scenario, respondents were asked how their expectations would change for their household income growth rate, the federal funds rate, their household's financial predictability, and the general economic situation in the year following the next quarter. Note that in the SD-10 treatment, the income growth rate comparisons are set against a 10 percentage point benchmark, in contrast to the 3 percentage point benchmark used in our main experiments. The table reports the percentage of respondents in each scenario that gave each possible response. The last row indicates the number of respondents in each treatment.

Appendix Table A18: Spending Response

	(1)	(2)
	SD-10	SD
Extensive Margin (Percentage)		
No Change	66.2	70.3
Same Spending Different Bundle	10.2	7.2
Increase	5.9	5.7
Decrease	17.6	16.8
Intensive Margin (Dollar Spending)		
Prior Spending	679.64	533.10
Spending Change	-25.38***	11.59
Percentage Change	-3.73%	2.17%
N	2,005	504

Notes: After being presented with the hypothetical scenario, respondents indicated potential changes in their spending plan over the subsequent three months. The first part of the table presents the proportion of participants from each treatment group that aligned with each potential response (extensive margin). Furthermore, participants provided their revised spending plans post-scenario (intensive margin). The second part of the table shows the initial spending plans, changes in these plans, and the percentage changes at the aggregate level. The row “Spending Change” also indicates whether the number is significantly different from zero. The last row indicates the number of respondents in each treatment. ***, **, * denotes statistical significance at 1, 5, and 10 percent levels, respectively.

Appendix Table A19: Households that Select Each Mechanism as a Percent of ‘No Change’ Households

	(1)	(2)
	SD-10	SD
Fixed Budget	64.4	66.6
Not a Consideration	69.2	64.6
Liquidity Constraint	44.1	46.8
Real Income Unchanged	8.8	13.1
N	1,413	364

Notes: The table reports the percent of households in each treatment that selected that a given channel applies to them. Note that respondents could select more than one channel so the columns could add to more than 100%. The last row indicates the number of respondents in each treatment that selected ‘no change’ in spending.

Appendix Table A20: Households that Select Each Mechanism as a Percent of ‘Same Spending, Different Bundle’ Households

	(1)	(2)
	SD-10	SD
Fixed Budget	65.1	73.2
Liquidity Constraint	62.4	48.8
N	158	31

Notes: The table reports the percent of households in each treatment that selected that a given channel applies to them. Note that respondents could select more than one channel so the columns could add to more than 100%. The last row indicates the number of respondents in each treatment that selected ‘same spending, different bundle’ in spending.

Appendix Table A21: Households that Select Each Mechanism as a Percent of ‘Decrease’ Households

	(1)	(2)
	SD-10	SD
Savers Wealth Effect	84.5	79.2
Rigid Income	62.6	45.7
Variable Debt	31.5	22.8
Inflation Hedge	50.3	68.4
Uncertainty	31.4	26.6
Debtors Wealth Effect (reverse)	11.6	13.3
N	331	81

Notes: The table reports the percent of households in each treatment that selected that a given channel applies to them. Note that respondents could select more than one channel so the columns could add to more than 100%. The last row indicates the number of respondents in each treatment that selected ‘decrease’ in spending.

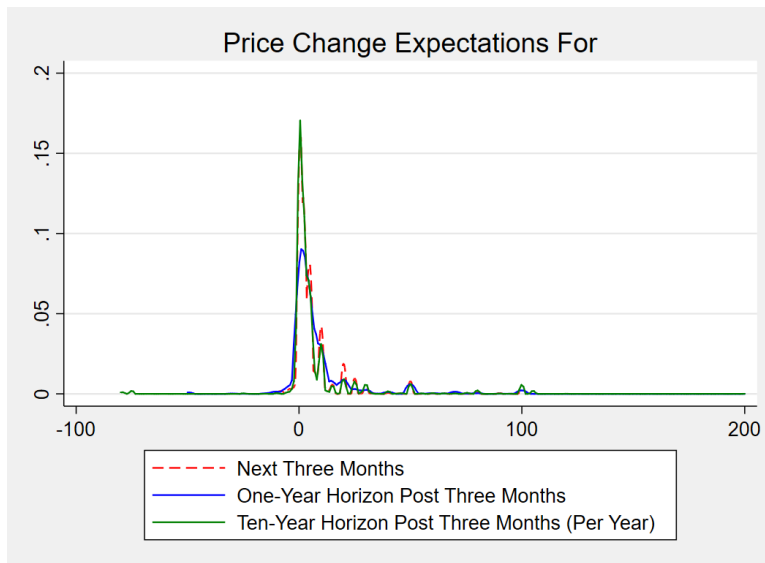
Appendix Table A22: Households that Select Each Mechanism as a Percent of ‘Increase’ Households

	(1)	(2)
	SD-10	SD
Intertemporal Substitution	65.0	71.2
Stockpiling	74.4	68.8
Debtors Wealth Effect	36.7	33.3
Flexible Income	8.2	5.2
Nominal Illusion	18.0	37.8
Uncertainty (reverse)	2.4	8.4
Variable Debt (reverse)	8.1	1.4
N	103	28

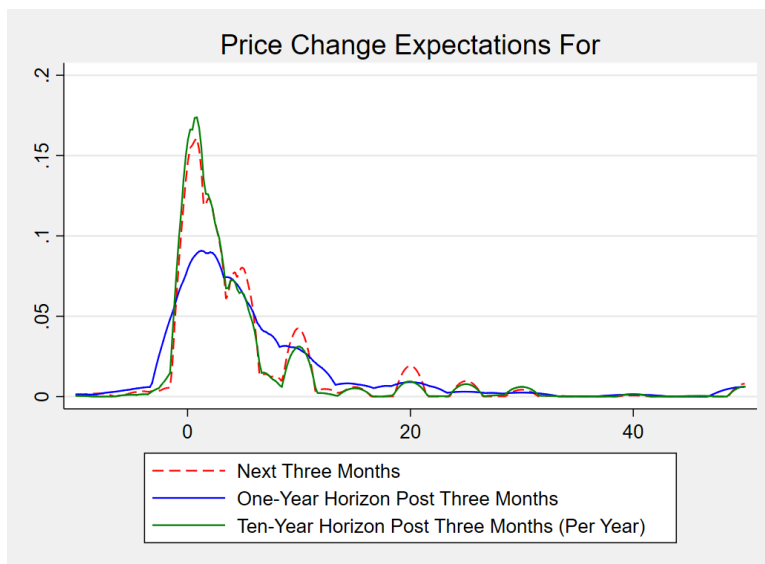
Notes: The table reports the percent of households in each treatment that selected that a given channel applies to them. Note that respondents could select more than one channel so the columns could add to more than 100%. The last row indicates the number of respondents in each treatment that selected ‘increase’ in spending.

B Additional Figures

Appendix Figure A1: Density Distribution of Prior Price Change Expectations



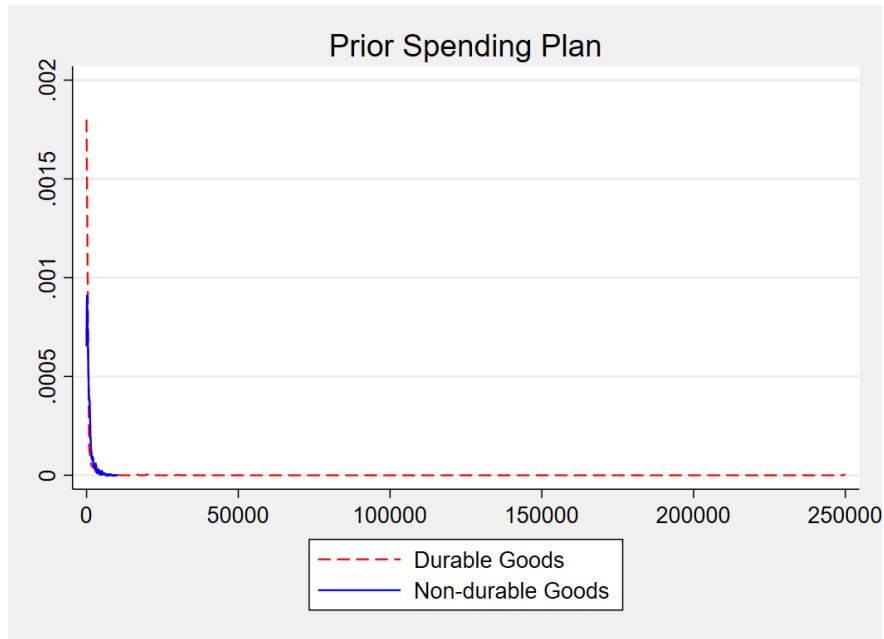
(a)



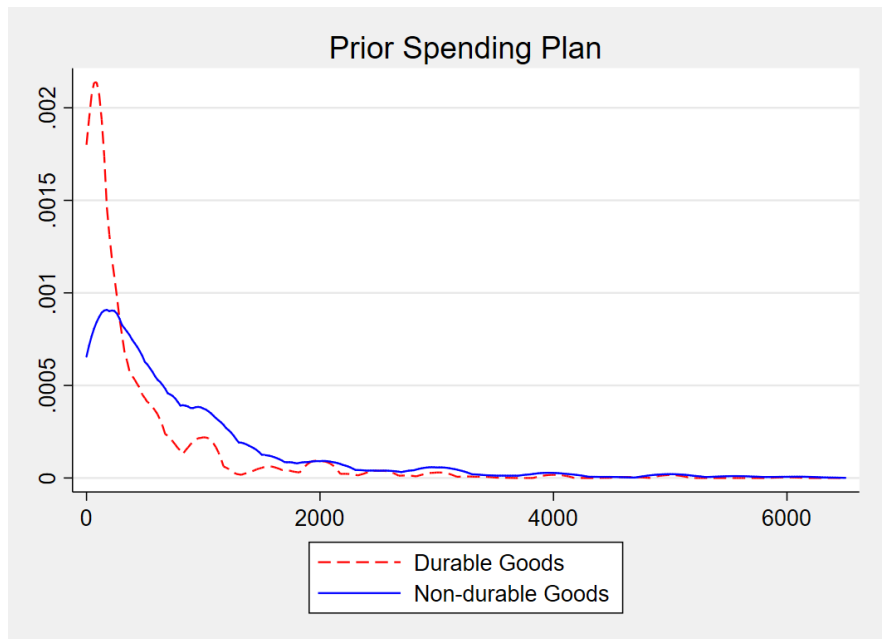
(b)

Notes: Figure (a) plots the density distributions of expected price changes across three distinct time horizons: the next three months, one year after the next three months, and a ten-year annualized forecast following the initial three months. Figure (b) restricts the range to between -10% and 50%. For both plots, densities are computed using the Epanechnikov kernel.

Appendix Figure A2: Density Distribution of Prior Spending Expectations



(a)



(b)

Notes: Figure (a) plots the density distributions of expected spending plans on durable and non-durable goods for the next three months. Figure (b) restricts the data range between 0 and 6500, which corresponds to the 99th percentile. For both plots, densities are computed using the Epanechnikov kernel.

