

## Consumer Wealth and Price Expectations

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[https://osf.io/mhe6k/?view\\_only=5ad6940801dd491a848ab125eaba9303](https://osf.io/mhe6k/?view_only=5ad6940801dd491a848ab125eaba9303)

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## **Consumer Relevance and Contribution Statement**

Prices have reached record-high levels, and inflation is one of the primary concerns for consumers worldwide. Interestingly, changes in prices are partly a self-fulfilling prophecy: if consumers expect prices to rise, prices will rise. Consumers' expectations of future prices also shape policymaking, firms' decisions, and consumer choice. Despite their meaningful consequences, less is known about how consumers form their future price expectations.

Across 16 studies using multiple sources of data, we find that consumers who feel more financially constrained expect future prices to be higher than do consumers who feel less financially constrained. This effect occurs because financially constrained consumers rely more on their perceptions of current prices (instead of other factors) when forecasting future prices. Since consumers generally perceive prices to be high, financially constrained consumers' greater reliance on these perceptions increases their forecasts of future prices. Thus, the effect attenuates when current prices seem less relevant to the forecast and amplifies when current prices are perceived as even higher.

Our work advances the literature on perceived financial constraints, which has primarily examined their influence on consumers' decision-making journeys. Showing that financial constraints also shape consumers' forecasts in the marketplace, our work suggests that effects of financial constraints may be more far-reaching than previously thought. Moreover, by drawing attention to consumers' forecasts of future prices, we broaden the scope of existing literature on prices, which has primarily focused on how consumers react to prices. Finally, we underscore the role of future price expectations in shaping consumers' financial outcomes, including spending, savings, and debt. In doing so, the current work advances the broader literature on consumer

finances.

In sum, the current work underscores the role of future price expectations as a key driver of consumer behavior, demonstrates how these expectations are formed, and offers insights for consumers, marketers, and policymakers.

Word count: (300, max: 300)

## Abstract

Prices have reached record-high levels, and inflation is one of the primary concerns for consumers worldwide. Interestingly, changes in prices are in part a self-fulfilling prophecy: if consumers expect prices to rise, prices will rise. Moreover, consumers' future price expectations affect policymaking, firms' decisions, and consumer choice. Across 16 studies (N = 294,950), including a nine-wave longitudinal study, a multinational study in eight countries, a multidecade study with 250,000+ consumers, proprietary data from the Federal Reserve, and multiple experiments, we show that consumers who feel more financially constrained expect future prices to be higher, compared to consumers who feel less financially constrained. This effect occurs because financially constrained consumers rely more on their perceptions of current prices (instead of other factors) when forecasting prices. Accordingly, this effect attenuates when current prices seem less relevant to the forecast and amplifies when current prices are perceived as expensive. Critically, we show that higher future price expectations predict greater spending, lower savings, and more debt among financially constrained consumers. Overall, the current work underscores the role of future price expectations as a key driver of consumer behavior, demonstrates how these expectations are formed, and offers insights for consumers, marketers, and policymakers.

Word count: 198 (max: 200)

Keywords: perceived financial constraints; future prices; expectations; consumer finances.

Prices have reached record-high levels in recent years (IMF 2022), and inflation—the rate at which prices change—is one of the primary concerns for consumers across the globe (Ipsos 2023). Interestingly, changes in prices are in part a self-fulfilling prophecy: if consumers expect prices to rise, prices will rise (Ang, Bekaert, and Wei 2007; Bernanke 2007). Consumers' future price expectations also influence the actions of various stakeholders in the marketplace, including consumers (Gunadi and Evangelidis 2022; Jacobson and Obermiller 1990), firms (Coibion, Gorodnichenko, and Ropele 2020), and policymakers (Falck, Hoffmann, and Hürtgen 2021). Despite their substantial implications, less is known about the psychological mechanisms that govern how consumers form expectations of future prices in the marketplace.

The current manuscript fills this gap by demonstrating that subjective wealth perceptions systematically shape consumers' forecasts of future prices. Given the centrality of prices to spending decisions, and the natural interplay between consumers' spending and their perceived ability to spend, we focus on the role of perceived financial constraints. Across 16 studies (N = 294,950) leveraging cross-sectional, longitudinal, and experimentally induced variation in perceived financial constraints, as well as various measures to capture price forecasts (e.g., dollar amounts, percentage points, descriptive scales), we find that consumers who feel more financially constrained expect prices to be higher in the future, as compared to consumers who feel less financially constrained. We provide evidence for this effect using multiple sources of data, including a nine-wave longitudinal study, a multinational study in eight countries, a study with over 250,000 consumers spanning four decades, proprietary data from the Federal Reserve, and several experiments. We show that this effect occurs because consumers who feel more (vs. less) financially constrained rely more on their perceptions of current prices (instead of other factors) when forecasting future prices. Consistent with this mechanism, the effect attenuates

when current prices seem less diagnostic of future prices and amplifies when current prices are perceived as higher. Critically, we demonstrate that consumers' future price expectations are a fundamental driver of behavior, predicting spending, saving, and debt.

The current manuscript contributes to three areas of marketing scholarship. First, it advances the literature on subjective wealth and perceived financial constraints. While existing research has primarily focused on how perceived financial constraints directly influence consumers' decision-making journeys (see Hamilton et al. 2019 for a review), the current work shows that financial constraints also shape consumers' forecasts in the marketplace, suggesting that the effects of financial constraints may be more far-reaching than previously thought. Second, the current work contributes to the literature on prices, which has largely focused on how consumers evaluate and react to current prices (see Thomas 2023 for a review). We broaden the scope of the existing literature by drawing attention to consumers' forecasts of future prices and identifying a ubiquitous psychological factor that explains why consumers diverge in their expectations of future prices. Finally, we underscore the role of future price expectations as a key driver of consumers' financial outcomes and decisions. Our findings show that expecting higher future prices is associated with greater spending, lower savings, and more debt among financially constrained consumers. In doing so, the current work advances the broader literature on consumer finances and financial decision-making.

## **SUBJECTIVE WEALTH AND PERCEIVED FINANCIAL CONSTRAINTS**

Subjective wealth refers to consumers' perceptions of their financial situation (Sharma, Tully, and Xiang 2023). In the current work, we focus on perceived financial constraints, which

are defined as “the extent to which people believe that their financial situation restricts desired consumption” (Tully, Hershfield, and Meyvis 2015). Importantly, extensive research has demonstrated that consumers’ objective financial situation is not equivalent to their perceptions of their financial situation. While objective indicators of wealth (e.g., income, savings, debt) affect subjective wealth perceptions, measures of objective wealth have weak-to-moderate associations with measures of subjective wealth. For instance, in the General Social Survey, income explained only 3.6% of the variance in financial satisfaction between 1972 and 2018 (Smith et al. 2018). This discrepancy occurs because subjective wealth perceptions are influenced by various contextual cues (Sussman and Shafir 2012; De La Rosa and Tully 2022; Sánchez-Rodríguez et al. 2019). Thus, not surprisingly, even those who are objectively wealthy often do not feel financially well-off. In a survey of US millionaires, for example, 28% reported feeling financially constrained (UBS 2013).

Given the prevalence of perceived financial constraints across the income spectrum, many studies have examined whether and how these perceptions affect consumer behavior. This body of work has shown that feelings of financial constraint affect every stage of the consumer decision-making process, shaping attention (Shah, Mullainathan, and Shafir 2012), preference (Tully, Hershfield, and Meyvis 2015; Wang and Sussman 2023), choice (Briers and Laporte 2013; Sharma, Tully, and Xiang 2023), consumption (Sharma and Alter 2012), and post-consumption outcomes (Paley, Tully, and Sharma 2019; Dias, Sharma, and Fitzsimons 2022). Despite burgeoning research on the effects of perceived financial constraints along the consumer journey, less is known about how these constraints affect consumers’ expectations in the marketplace. This gap is notable given that expectations meaningfully shape how consumers process information, formulate judgments, and behave (Shiv, Carmon, and Ariely 2005; Roth

and Wohlfart 2020). Within the realm of expectations in the marketplace, consumers' expectations of future prices are arguably among the most consequential, as they shape the decisions of virtually every stakeholder involved, including consumers (Gunadi and Evangelidis 2022; Jacobson and Obermiller 1990), firms (Coibion, Gorodnichenko, and Ropele 2020), and policymakers (Falck, Hoffmann, and Hürtgen 2021).

## **CONSUMERS' FUTURE PRICE EXPECTATIONS**

In the current research, we use the terms 'future price expectations' and 'price forecasts' interchangeably to refer to consumers' beliefs about future prices or changes in future prices. These beliefs can pertain to specific products, expenditure categories, or the overall economy, and they matter because several stakeholders in the marketplace act on them. Consequently, consumers' expectations of future prices influence a host of important outcomes: consumers' decisions to buy now or later (Jacobson and Obermiller 1990; Gunadi and Evangelidis 2022), investors' portfolio choices (Armantier et al. 2015), firms' pricing decisions (Coibion, Gorodnichenko, and Ropele 2020), policymakers' decisions about monetary policy (Bernanke 2007), and actual changes in prices in the overall economy (Ang, Bekaert, and Wei 2007).

In light of their important consequences, a growing literature has identified various factors that shape consumers' future price expectations. Existing work has largely focused on the role of contextual factors (e.g., question wording, Bruine de Bruin et al. 2012; the direction and frequency of past price changes, Gunadi and Evangelidis 2022; the frequency of purchases, D'Acunto et al. 2021), cognitive factors (e.g., outcome feedback; Niu and Harvey 2022), and individual differences (e.g., age, Hjalmarsson and Österholm 2020; gender, Corduas 2022;



political affiliation, Bachmann et al. 2021) in shaping expectations of future prices. Nonetheless, the psychological processes underlying the formation of consumers' future price expectations have received less attention. The current research addresses this gap by investigating the role of perceived financial constraints.

## **THE CURRENT RESEARCH**

We predict that consumers who feel more financially constrained will expect future prices to be higher than will consumers who feel less financially constrained. We base this prediction on existing research showing that consumers' forecasts of the future are "tethered" to their assessments of the present (Critcher and Rosenzweig 2014). This body of work has shown that individuals tend to use salient, readily available information to predict the future, and place greater weight on factors that seem most relevant (Rosenzweig and Critcher 2014). Thus, we expect that consumers will rely on their assessment of salient factors when forecasting future prices.

While various factors may be salient to consumers when they forecast future prices, we contend that one factor that will be differentially salient to more (vs. less) financially constrained consumers is their subjective perception of current prices. This prediction is supported by prior work showing that consumers who feel financially constrained are more likely to consider the costs of consumption (Shah et al. 2018; Dias, Sharma, and Fitzsimons 2022). Since reliance on a piece of information is a function of its availability in the mind (Tversky and Kahneman 1973), we propose that consumers who feel more financially constrained rely more on their subjective perception of current prices (instead of other factors) when forecasting future prices.

How might greater reliance on their perceptions of current prices shape financially constrained consumers' expectations of future prices? Existing research suggests that consumers tend to perceive prices as expensive (Bolton, Warlop, and Alba 2003; Xia, Monroe, and Cox 2004). Whether financially constrained consumers' greater reliance on these perceived high prices leads to higher or lower future price expectations depends on how consumers incorporate this information into their forecasts. Prior research suggests that individuals incorporate information into judgments via assimilation or contrast (Bless and Schwarz 2010). An assimilation effect occurs when individuals update their judgment in the same direction of a salient piece of information; a contrast effect occurs when individuals update their judgment in the opposite direction of a salient piece of information. Relevant to our theorizing, existing research has shown that assimilation effects emerge when a salient piece of information and the target judgment are perceived as related (Zhu and Meyers-Levy 2009; Yang et al. 2019; Shen, Jiang, and Adaval 2010; Wilcox, Roggeveen, and Grewal 2011). Thus, to the extent that current prices are categorized as related to future prices, we expect current prices to be assimilated into consumers' forecasts of future prices. Given that consumers tend to perceive prices as expensive, an assimilation effect suggests that financially constrained consumers' greater reliance on their perceptions of current prices will result in a positive association between perceived financial constraints and future price expectations. More formally:

**H1:** Consumers who feel more financially constrained will expect future prices to be higher than will consumers who feel less financially constrained.

**H2:** The effect of perceived financial constraints on consumers' expectations of future prices will be mediated by greater reliance on perceptions of current prices.

Specifically, consumers who feel more financially constrained will rely more on their perceptions of current prices (instead of other factors) when forecasting future prices.

Our proposed mechanism suggests a few moderators. First, if consumers who feel financially constrained expect higher future prices because they rely more on their perceptions of current prices when forecasting future prices, the effect should be attenuated when current prices seem less diagnostic of (and hence less relevant to) the given forecast. This may occur when consumers infer that they should not rely on current prices to forecast future prices. We test this proposed moderator in three specific contexts: when consumers receive information highlighting that current prices are not diagnostic of future prices, when there is greater geographical distance between consumers' current location and the location for which they forecast future prices, and when the forecast refers to a more temporally distant future. In these circumstances, we expect consumers to infer that current prices are not a strong signal of future prices, thereby attenuating the effect. More formally:

**H3:** The positive effect of perceived financial constraints on consumers' future price expectations will be attenuated when consumers infer (or are led to believe) that current prices are not a relevant signal of future prices.

In addition, we propose that the effect will be amplified in circumstances in which

current prices are perceived as even higher. If consumers who feel more (vs. less) financially constrained rely more on current prices (vs. other factors) when forecasting future prices, then the positive effect of financial constraints on future price expectations will be stronger when the prices upon which they rely seem even more expensive. We propose two specific instances in which this will be the case: (a) when current prices are higher than expected, and (b) when consumers forecast future prices in expenditure categories in which current prices are perceived as more (vs. less) expensive. Stated more formally:

**H4:** The positive effect of perceived financial constraints on consumers' future price expectations will be stronger (weaker) in circumstances in which current prices are perceived as higher (lower).

In the remainder of this manuscript, we report the results of 11 studies (and five additional studies in the web appendix,  $N = 294,950$ ) examining the effect of perceived financial constraints on consumers' expectations of future prices. To increase the internal and external validity of our findings, we leverage multiple sources of variation in perceived financial constraints, use various measures of expected future prices, and rely on large, diverse samples. We begin by providing evidence for the main effect in three ways: examining the association between perceived financial constraints and consumers' forecasts of the future prices of specific products (study 1A), investigating longitudinal covariation in perceived financial constraints and consumers' forecasts of changes in prices in the overall economy (study 1B), and experimentally inducing feelings of financial constraint and measuring consumers' forecasts of changes in prices in various expenditure categories (study 1C). Supplemental studies 1-5 in the web appendix

conceptually replicate the effect and rule out several alternative accounts.

We then provide evidence for our proposed mechanism by unobtrusively assessing spontaneous thoughts about current prices (study 2). Studies 3A-3C show that the effect attenuates when consumers infer (or are led to believe) that current prices are not a relevant signal of future prices, thereby providing additional evidence for the role of reliance on perceptions of current prices as an underlying mechanism. Specifically, we demonstrate that the effect attenuates when consumers receive information highlighting that current prices are not diagnostic of future prices (study 3A), when there is greater geographical distance between consumers' current location and the location for which they forecast future prices (study 3B), and when the price forecast refers to a more temporally distant future (study 3C).

Next, we report two studies demonstrating that the effect amplifies in circumstances in which current prices are perceived to be even higher. In study 4A, we analyze a dataset with a large representative sample of US consumers collected from 1978 to 2021 and demonstrate that the effect is stronger in times of rising inflation. By examining a period spanning four decades, study 4A further demonstrates that this effect is robust over time, rather than emerging due to idiosyncratic aspects of the current economic environment. In study 4B, we show that the effect is more pronounced in categories in which current prices are perceived as more (vs. less) expensive. Finally, we demonstrate that beliefs about future prices are consequential. We show that higher future price expectations are associated with greater spending and lower saving (study 5), as well as more debt (study 6) among financially constrained consumers.

We conclude by discussing theoretical and practical implications of our findings and outlining directions for future research. All the data, code, materials, and pre-registrations for the studies reported in this manuscript are available at

[https://osf.io/mhe6k/?view\\_only=5ad6940801dd491a848ab125eaba9303](https://osf.io/mhe6k/?view_only=5ad6940801dd491a848ab125eaba9303).

## **STUDY 1A: NATURAL VARIATION IN FINANCIAL CONSTRAINTS AND FORECASTS OF THE FUTURE PRICES OF VARIOUS PRODUCTS**

In study 1A, we examined the association between natural variation in perceived financial constraints and consumers' forecasts of the future prices of various products. We predicted that consumers who felt more financially constrained would expect future prices to be higher than would consumers who felt less financially constrained (H1).

### Methods

*Sample and Design.* We pre-registered this study using AsPredicted (##134446, [https://aspredicted.org/2V5\\_ZFF](https://aspredicted.org/2V5_ZFF)). We planned to collect data from 500 people, and 499 UK residents signed up to participate on Prolific Academic. We excluded four people who failed an attention check, leaving a final sample of 495 participants (50.7% female,  $M_{age} = 35.5$ ,  $SD = 12.1$ ). This study adopted a correlational design.

*Procedure.* Participants saw 10 products, each presented on a separate screen. They saw the name, description, and current price of each product, and were asked to indicate what they thought each product's price would be in 12 months. Participants provided their forecasts using an open-ended text box. After estimating the future prices of each of the 10 products, participants completed a 4-item measure of perceived financial constraints ( $\alpha = .87$ ; sample item: "To what extent do you feel financially constrained?", 1 = not at all, 7 = very much, adapted from Dias, Sharma, and Fitzsimons 2022), an attention check, a question assessing how well they

understand what inflation is, and provided demographic information.

## Results and Discussion

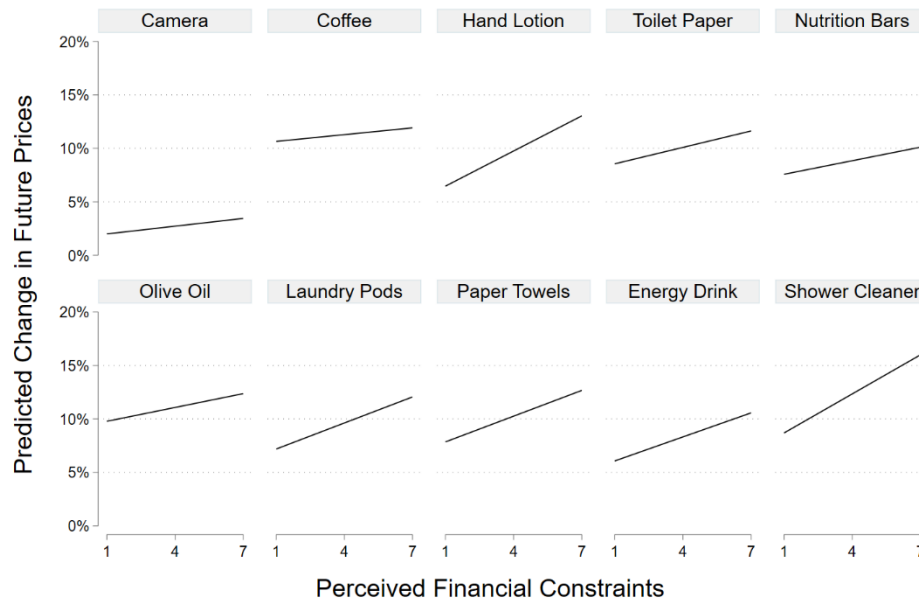
As indicated in our pre-registration, we applied two transformations to participants' forecasts of future prices. First, to remove outliers, we winsorized their estimates at the 95<sup>th</sup> percentile within each product. Second, for each participant-product pair, we calculated the percentage change implied by the participant's future price estimate, relative to the product's current price. That is, for each participant-product pair, we calculated:  $100 * [(\text{estimate of future price} / \text{current price of the product}) - 1]$ .

We analyzed the data with a multilevel model with crossed random effects for participants and products (Judd, Westfall, and Kenny 2012), with the implied percentage change in the future price of each product as the dependent variable and perceived financial constraints as the independent variable. The results revealed a significant effect of perceived financial constraints ( $b = 0.65$ ,  $SE = 0.28$ ,  $p = .020$ ), such that consumers who felt more financially constrained expected a higher change in future prices ( $\hat{y}_{+1SD} = 10.7\%$ ) than did consumers who felt less financially constrained ( $\hat{y}_{+1SD} = 9.0\%$ ). Figure 1 displays this result.

*Discussion.* Study 1A provided initial evidence for the association between perceived financial constraints and consumers' future price expectations. Specifically, consumers who felt more financially constrained expected the future prices of various products to be higher than did consumers who felt less financially constrained. To examine the generalizability of this finding, we conceptually replicated study 1A using a set of purchases for which prices tend to fluctuate, such as a hotel room, airline ticket, or ride in a rideshare app. Once again, greater perceived financial constraints were associated with higher future price expectations ( $n = 890$ ,  $b = 1.44$ ,  $SE$

= 0.63,  $p = .023$ ; see supplemental study 1 in the web appendix for details).

Figure 1. Perceived Financial Constraints and Predicted Changes in the Future Prices of Various Products (Study 1A)



### **STUDY 1B: LONGITUDINAL VARIATION IN PERCEIVED FINANCIAL CONSTRAINTS AND FUTURE PRICE EXPECTATIONS**

Study 1B sought to disentangle the nature of the association between perceived financial constraints and future price expectations. Do greater perceived financial constraints lead to higher future price expectations, or do higher future price expectations result in greater feelings of financial constraint? To examine this question, we investigated how these constructs covary over time. Moreover, study 1B examined whether the effect generalizes to estimates of future changes in prices in the overall economy (instead of estimates pertaining to specific products).



## Methods

*Sample and Design.* Study 1B adopted a nine-wave longitudinal design. We aimed to recruit 1,200 people in wave 1, and 1,211 UK residents signed up to participate on Prolific Academic. We contacted these same participants in each of the eight subsequent months to complete waves 2-9 of the survey. We excluded 41 participants who failed at least one attention check across all surveys, leaving a final sample of 1,170 participants who completed at least one wave of the study (50.0% female,  $M_{\text{age}} = 42.3$ ,  $SD = 13.8$ ). On average, participants completed 5.3 waves of the survey (Median = 6,  $SD = 2.7$ ), resulting in 6,201 observations. We report detailed demographic information for each wave of the survey in the web appendix.

*Procedure.* In wave 1, participants indicated the percentage by which they expected the prices of goods and services in the UK to change in 12 months. Specifically, participants were told that the rate of change in prices over a given period is referred to as inflation, and they were asked to estimate what inflation would be in 12 months. Participants entered their responses in an open-ended text box. Next, they completed the same measure of perceived financial constraints, attention check, understanding of inflation, and demographic information collected in study 1A. The wave 2-9 surveys were identical to the wave 1 survey, except that they did not include demographic questions.

## Results and Discussion

In this and in all studies reported in this manuscript, we winsorized participants' future price expectations at the 95<sup>th</sup> percentile to remove outliers. We were interested in examining the dynamics of the relationship between perceived financial constraints and future price expectations over time. To do so, we estimated an autoregressive cross-lagged panel model.

Cross-lagged panel models disentangle the direction of the relationship between two variables over time to probe whether one variable precedes the other. In our case, we were interested in estimating the effect of perceived financial constraints in time  $t$  on future price expectations in time  $t+1$ , and the effect of future price expectations in time  $t$  on perceived financial constraints in time  $t+1$ .

We estimated an autoregressive cross-lagged panel model with first- and second-order autoregressive paths using maximum likelihood for missing data. For parsimony, we constrained the cross-lagged effects to be equal over time. The model fit the data well ( $\chi^2(112) = 650.4$ , CFI = .960, RMSEA = .064, 95% CI: [.059 to .069]). The results revealed a significant effect of perceived financial constraints in time  $t$  on future price expectations in time  $t+1$  ( $b = 0.03$ , SE = .01,  $p < .001$ ). In contrast, future price expectations in time  $t$  did not affect perceived financial constraints in time  $t+1$  ( $b = -0.00$ , SE = .01,  $p = .751$ ).

*Robustness Checks.* We conducted several additional analyses to examine the robustness of these results. The results do not change if we control for all the covariates we collected (age, gender, education, ethnicity, income, and understanding of inflation), use different inclusion criteria (e.g., only including participants who completed more than 3 waves), add third-order autoregressive effects, use only first-order autoregressive effects, or use raw (instead of winsorized) future price expectations. We report details about these robustness checks in the web appendix.

*Alternative Explanations.* We further assessed the robustness of this effect and examined several alternative explanations in four additional cross-sectional studies reported in the web appendix. Supplemental study 2 ( $n = 293$ ) replicated the effect when eliciting consumers' future price expectations with a slider scale instead of using an open-ended response format ( $b = 2.42$ , SE = 0.65,  $t(291) = 3.74$ ,  $p < .001$ ). In supplemental study 3 ( $n = 300$ ), we controlled for dispositional optimism (Scheier, Carver, and Bridges 1994) to examine whether the effect emerged simply

because consumers who perceived greater financial constraints generally expect worse outcomes. Perceived financial constraints were significantly associated with higher future price expectations even when controlling for optimism ( $b = 0.96$ ,  $SE = .28$ ,  $t(296) = 3.40$ ,  $p = .001$ ). Finally, we examined whether the effect emerged due to differences in participants' knowledge about past prices (supplemental study 4,  $n = 1,986$ ) or differences in general financial knowledge (supplemental study 5,  $n = 298$ ). Perceived financial constraints were associated with higher future price expectations even after we provided participants with information about the rate of change in prices in the past (supplemental study 4,  $b = 0.25$ ,  $SE = .05$ ,  $t(1984) = 5.12$ ,  $p < .001$ ) and even after we controlled for financial literacy (supplemental study 5;  $n = 298$ ,  $b = 0.46$ ,  $SE = .24$ ,  $t(295) = 1.90$ ,  $p = .058$ ).

*Discussion.* Study 1B provided further evidence about the nature of the association between perceived financial constraints and future price expectations. Our results suggest that perceived financial constraints precede and potentially cause higher future price expectations, but higher future price expectations do not contribute to greater feelings of financial constraint. Supplemental studies 2-5 demonstrated that this association is not driven by differences in optimism or financial literacy, and that the effect holds when using a different method to elicit consumers' future price expectations.

## **STUDY 1C: MANIPULATING PERCEIVED FINANCIAL CONSTRAINTS**

We designed study 1C with two goals in mind. First, we wanted to test whether perceived financial constraints cause higher future price expectations. Second, we aimed to further probe the generalizability of the results by examining if the effect holds when measuring future price

expectations for various product categories, rather than expectations for the future prices of specific products (study 1A) or future price changes in the overall economy (study 1B).

## Methods

*Sample and Design.* We pre-registered this study using AsPredicted (#120072, [https://aspredicted.org/PT1\\_FHQ](https://aspredicted.org/PT1_FHQ)). We planned to recruit 800 people, and 791 US residents signed up to participate in the study on Cloud Research Connect. We excluded 7 participants who failed the same attention checks used in studies 1A-1B, leaving a final sample of 784 participants (50.9% female,  $M_{\text{age}} = 39.7$ ,  $SD = 13.1$ ). This study adopted a 2 (financial constraints vs. control, between) x 14 (categories, within) mixed design.

*Procedure.* To increase statistical power (Meyvis and Van Osselaer 2018), we collected the following measure at the beginning of the study: “As compared to where they are today, I believe that the prices of the goods and services in the United States in January 2024 will...” 1 = decrease significantly, 7 = increase significantly). As indicated in our pre-registration, this measure served as a covariate in the main analysis. To ensure that participants’ scores on this covariate did not differ by experimental condition, we used their scores on this measure as a basis for stratified randomization. Therefore, by design, participants’ scores on this measure were equal across conditions ( $M_{\text{financial constraint}} = 5.21$  vs.  $M_{\text{control}} = 5.21$ ,  $t(782) = -0.03$ ,  $p = .975$ ). After measuring this covariate, we manipulated perceived financial constraints. In the financial constraints condition, participants wrote about the factors that contribute to their financial constraints (adapted from Tully, Hershfield, and Meyvis 2015). In the control condition, participants described what they did in the past weekend (Dias, Sharma, and Fitzsimons 2022). We then measured our key dependent variable in this study: participants’ price forecasts for 14

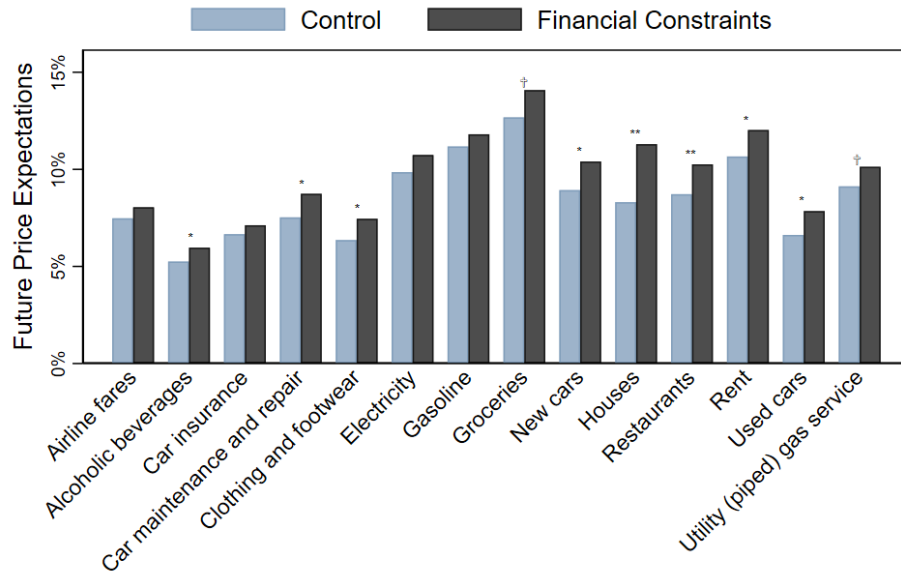
categories. We selected categories representing a wide range of typical expenditures (e.g., groceries, gas, electricity), adapted from the Consumer Price Index (CPI). Participants indicated the percentage by which they expected prices in each category to change in 12 months, resulting in 14 measurements per participant. Finally, participants completed a manipulation check (“To what extent do you feel financially constrained?”, 1 = not at all, 7 = very much), the same attention check used in studies 1A-1B, and indicated their age, gender, and income.

## Results and Discussion

*Manipulation Check.* Participants indicated feeling more financially constrained in the financial constraints condition ( $M = 5.22$ ,  $SD = 1.59$ ) than in the control condition ( $M = 4.93$ ,  $SD = 1.68$ ,  $t(782) = -2.48$ ,  $p = .013$ ,  $d = -0.18$ ), indicating that the manipulation was successful.

*Future Price Expectations.* We modeled participants’ future price expectations with a multilevel model with crossed random effects for participants and categories (Judd, Westfall, and Kenny 2012). In the fixed part of the model, we entered a dummy indicator for condition (1 = financial constraints, 0 = control) and the covariate we collected. Across all 14 categories, participants in the financial constraints condition reported higher future price expectations ( $\hat{y} = 9.7\%$ ) than did participants in the control condition ( $\hat{y} = 8.5\%$ ,  $b = 1.17$ ,  $SE = .50$ ,  $p = .009$ ; see the web appendix for the results within each category). Figure 2 illustrates this result.

Figure 2. Effect of Perceived Financial Constraints on Future Price Expectations in Various Categories (Study 1C)



*Note.* Each column displays the average predicted change in future prices in each category given by participants in the ‘control’ and ‘financial constraints’ conditions. The *p*-values represent the difference between the means in each category, calculated with a regression for each category, controlling for the covariate described in the pre-registration. As pre-registered, we report one-tailed *p*-values. \*\*\*  $p < .001$ , \*\*  $p < .01$ , \*  $p < .05$ , †  $p < .10$ .

*Discussion.* Study 1C showed that experimentally inducing feelings of financial constraint led consumers to expect future prices to be higher. Taken together, studies 1A-1C demonstrated that perceived financial constraints are associated with (study 1A), precede (study 1B), and cause higher future price expectations (study 1C). We observed this effect when consumers forecasted the future prices of specific products (study 1A), changes in future prices in the overall economy (study 1B), and changes in future prices in various expenditure categories (study 1C).

## STUDY 2: SPONTANEOUS THOUGHTS ABOUT CURRENT PRICES

We hypothesized that the effect of perceived financial constraints on future price expectations is mediated by reliance on current prices (H2). That is, we proposed that consumers who feel more (vs. less) financially constrained rely more on their perceptions of current prices (instead of other factors) when forecasting future prices, resulting in higher future price expectations. Study 2 investigated this proposed mechanism by examining consumers' explanations for their future price expectations and unobtrusively assessing their thoughts about current prices.

## Methods

*Sample and Design.* We pre-registered this study using AsPredicted (#116427, [https://aspredicted.org/N14\\_G34](https://aspredicted.org/N14_G34)). We planned to recruit 1,200 people and 1,215 UK residents signed up to participate on Prolific Academic. We excluded 15 participants who did not finish the survey and another 15 who failed an attention check, leaving a final sample of 1,185 participants (49.11% female,  $M_{age} = 39.63$ ,  $SD = 13.76$ ).

*Procedure.* Participants were asked to indicate the percentage by which they expected prices in the overall economy to change in 12 months with the same measure used in study 1B. On the subsequent screen, they explained their future price expectations in an open-ended text box. Next, they completed the same measures of perceived financial constraints ( $\alpha = .90$ ) and attention check used in studies 1A-1C and reported demographic information.

## Results and Discussion

*Future Price Expectations.* Replicating the results of studies 1A-1C, consumers who felt

more financially constrained (1 SD above the mean) expected future prices to increase by 10.2%, while consumers who felt less financially constrained (1 SD below the mean) expected future prices to increase by 8.2% ( $b = 0.73$ ,  $SE = 0.14$ ,  $t(1183) = 5.28$ ,  $p < .001$ )

*Reliance on Current Prices.* As indicated in our pre-registration, two research assistants coded whether (1) or not (0) participants mentioned their perceptions of current prices in their explanations. The two coders agreed on the coding of 86.3% of the observations, and a third coder resolved disagreements. A logistic regression indicated that participants who felt more financially constrained were more likely to mention their perceptions of current prices ( $\hat{y}_{+1SD} = 28.7\%$ ) than were participants who felt less financially constrained ( $\hat{y}_{-1SD} = 23.3\%$ ,  $OR = 1.11$ ,  $SE = .056$ ,  $p = .035$ ). Furthermore, an OLS regression indicated that participants who mentioned their perceptions of current prices in their explanation had higher future price expectations. Specifically, participants who mentioned their perceptions of current prices in their explanations expected future prices to be higher ( $M = 11.1\%$ ,  $SD = 7.0$ ) compared to participants who did not ( $M = 8.5\%$ ,  $SD = 6.0$ ,  $t(1183) = 6.10$ ,  $p < .001$ ,  $d = 0.40$ ).

*Indirect Effect.* We examined whether the relationship between perceived financial constraints and future price expectations was mediated by whether participants mentioned their perceptions of current prices in their explanations. To do so, we estimated the structural path *perceived financial constraints*  $\rightarrow$  *spontaneous thoughts about current prices*  $\rightarrow$  *future price expectations*, with the standard errors estimated with 1,000 bootstrapped samples. Both the direct ( $c' = 0.68$ ,  $SE = .13$ ,  $p < .001$ , 95 CI: [.420 to .936]) and the indirect effects were significant ( $axb = 0.049$ ,  $SE = .03$ ,  $p = .049$ , 95% CI: [.0001 to .0976]), indicating that spontaneous thoughts about current prices partially mediated the effect of perceived financial constraints on future



price expectations.<sup>1</sup>

*Discussion.* Study 2 provided initial evidence for our proposed mechanism. Consumers who felt more financially constrained were more likely to consider their perceptions of current prices (vs. other factors) when forecasting future prices, which in turn resulted in higher future price expectations.

### **STUDY 3A: MANIPULATING THE DIAGNOSTICITY OF CURRENT PRICES**

Study 3A further probed our proposed mechanism by adopting a process-by-moderation design (Spencer, Zanna, and Fong 2005). Specifically, we manipulated consumers' beliefs about whether current prices are diagnostic of future prices. If consumers who feel more financially constrained expect higher future prices because they rely more on their subjective perceptions of current prices when forecasting future prices, then leading all consumers to infer that current prices are not diagnostic of future prices should attenuate this effect (H3).

#### Methods

*Sample and Design.* We pre-registered this study using AsPredicted (#127572, [https://aspredicted.org/SVF\\_Z6P](https://aspredicted.org/SVF_Z6P)). We planned to recruit 1,500 people, and 1,516 UK residents signed up to participate on Prolific. We excluded 29 participants who did not finish the survey and 13 who failed an attention check, leaving a final sample of 1,474 participants (50.1% female,  $M_{\text{age}} = 36.4$ ,  $SD = 12.0$ ). This study adopted a 2 (condition: treatment vs. control) x continuous (perceived financial constraints, measured) between-subjects design.

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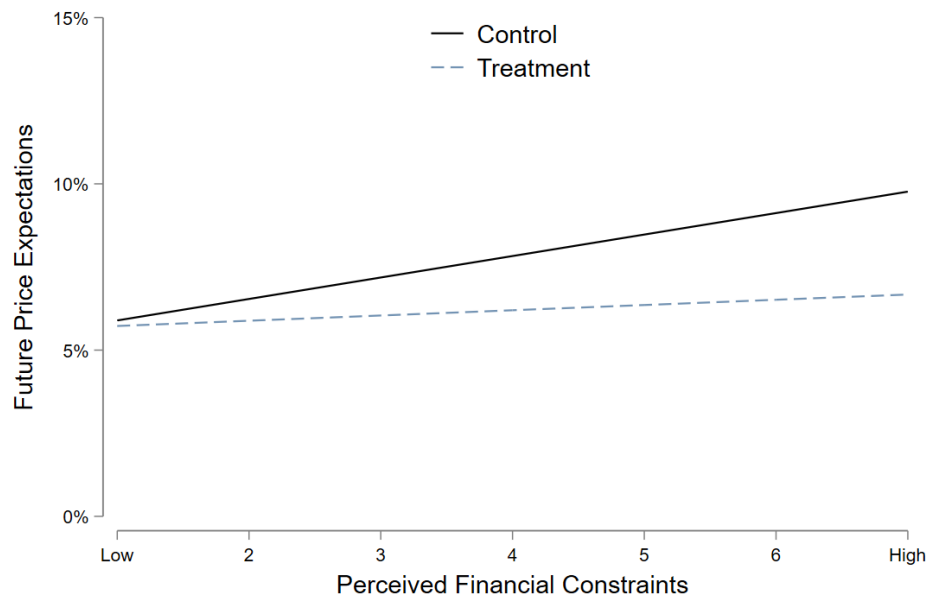
<sup>1</sup> A research assistant coded participants' responses for 9 other categories. None of these additional categories mediated the effect. We report further details and analyses in the web appendix.

*Procedure.* First, we randomly assigned participants to one of two conditions. In the treatment condition, participants were asked to read and summarize an article arguing that current prices are not diagnostic of future prices (see web appendix for details). In the control condition, participants did not read any article. Next, all participants reported the percentage by which they expected prices in the overall economy to change in 12 months with the same measure used in studies 1B and 2. Participants then completed the same measure of perceived financial constraints ( $\alpha = 0.88$ ) and attention check used in studies 1A-1C and 2 and provided demographic information.

## Results and Discussion

We were interested in testing whether the effect of perceived financial constraints on future price expectations was attenuated when consumers were led to believe that current prices are not diagnostic of future prices. To do so, we estimated a 2 (condition: treatment vs. control) x continuous (perceived financial constraints, measured) ANOVA with future price expectations as the dependent variable. To facilitate interpretation, we mean-centered perceived financial constraints. The results revealed a significant main effect of perceived financial constraints ( $F(1, 1470) = 15.27, p < .001, \eta^2 = .010$ ), a significant main effect of condition ( $F(1, 1470) = 58.66, p < .001, \eta^2 = .038$ ), and critically, a significant two-way interaction ( $F(1, 1470) = 5.63, p = .018, \eta^2 = .004$ ). In the control condition, greater perceived financial constraints were associated with higher future price expectations ( $b = 0.65, SE = .14, p < .001$ ), replicating our prior results. In the treatment condition—when consumers were led to infer that current prices are not diagnostic of future prices—perceived financial constraints had no effect on future price expectations ( $b = 0.16, SE = .15, p = .283$ ). Figure 3 illustrates this interaction.

Figure 3. Effect of Perceived Financial Constraints on Future Price Expectations (Study 3A)



Our theory suggests that consumers who feel more financially constrained expect higher prices in the future because they rely more on their subjective perceptions of current prices (instead of other factors) when forecasting future prices. If this theoretical rationale is supported, then manipulating beliefs about whether current prices are diagnostic of future prices should have a stronger effect on the price forecasts made by consumers who rely more on their perceptions of current prices (i.e., those who feel more financially constrained). Indeed, the effect of the manipulation on future price expectations was about two times stronger for participants who felt more financially constrained (1 SD above the mean,  $b = -2.6$ ,  $SE = .36$ ,  $p < .001$ ) than for participants who felt less financially constrained (1 SD below the mean,  $b = -1.4$ ,  $SE = .36$ ,  $p < .001$ ).

In sum, study 3A provided additional evidence for our proposed mechanism. When participants were led to believe that current prices are not a relevant signal of future prices,

perceived financial constraints no longer affected consumers' price forecasts.

### **STUDY 3B: FORECASTING FUTURE PRICES IN A MORE DISTANT LOCATION**

Study 3B built on study 3A by examining a different way of reducing the diagnosticity of perceptions of current prices for one's price forecasts. While study 3A directly manipulated beliefs about whether current prices are diagnostic of future prices, study 3B examined a circumstance in which consumers' perceptions of current prices are naturally less relevant for their forecasts of future prices: when they forecast prices for a more distant location. If financially constrained consumers' higher future price expectations are explained by their greater reliance on their perceptions of current prices, the effect should be attenuated when there is greater geographical distance between consumers' current location and the location for which they forecast future prices. We tested this prediction by examining consumers' forecasts of future prices for their own country and for foreign countries. In addition, study 3B probed the generalizability of the effect by recruiting participants residing in eight different countries.

#### Methods

*Sample and Design.* We pre-registered this study using AsPredicted (#122508, [https://aspredicted.org/C1M\\_KPS](https://aspredicted.org/C1M_KPS)). We planned to recruit 200 participants residing in each of eight countries (Canada, Germany, Italy, Portugal, South Africa, Spain, United Kingdom, United States), and 1,596 participants completed the study. We selected these countries because they had the largest number of English-speaking participants available on Prolific Academic at the time of the study. We excluded 2 participants who did not complete the study and 28 who failed

an attention check, resulting in a sample of 1,566 participants (49.4% female,  $M_{\text{age}} = 33.6$ ,  $SD = 10.8$ ). This study adopted an 8 (estimates, within) x continuous (perceived financial constraints, measured) mixed design.

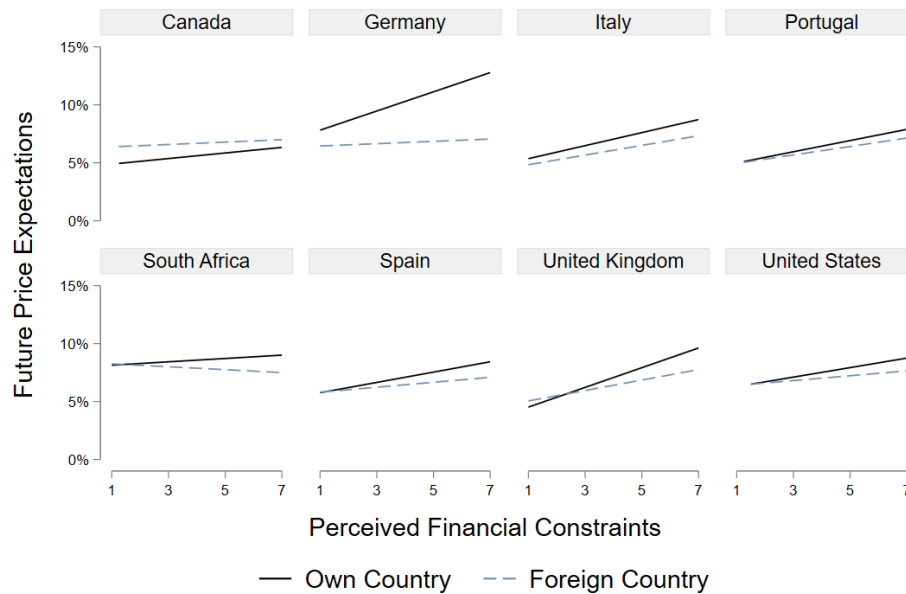
*Procedure.* Using the same measure from studies 1B, 2, and 3A, participants indicated the percentage by which they expected future prices to change in 12 months for each of the countries from which participants were sampled in this study, resulting in 8 measurements per participant. This design allowed us to observe participants' forecasts of future prices in their own country and seven foreign countries. To minimize the possibility that the results were driven by differences in knowledge about prices in one's country and other countries, participants saw the percentage by which prices increased in each of each of these 8 countries in 2022 (the data for this study was collected in February 2023). Finally, participants completed the same measure of perceived financial constraints ( $\alpha = 0.88$ ) and attention check used in studies 1A-C, 2, and 3.

## Results and Discussion

We were interested in examining whether the effect of perceived financial constraints on consumers' expectations of future prices was attenuated when consumers forecasted future prices in foreign countries. To do so, we estimated a multilevel model with crossed random effects for participants and estimates, with observations nested within participants' country of residence. In the fixed part of the model, we entered perceived financial constraints (continuous, mean-centered), a dummy variable for estimate type (1 = estimate of future prices in a foreign country, 0 = estimate of future prices in one's own country), and their interaction. The results revealed a significant effect of perceived financial constraints ( $b = 0.51$ ,  $SE = .08$ ,  $p < .001$ ), a significant effect of estimate type ( $b = -.93$ ,  $SE = .28$ ,  $p = .001$ ), and critically, a significant interaction ( $b = -$

0.28, SE = .05,  $p < .001$ ). Consistent with our predictions, the effect of perceived financial constraints on future price expectations was stronger when participants estimated future prices in their own country ( $b = 0.51$ , SE = .08,  $p < .001$ ) than when they estimated future prices in a foreign country ( $b = 0.23$ , SE = .06,  $p < .001$ ). Notably, this pattern was observed in every country in which we collected data. Figure 4 displays these results.

Figure 4. Effect of Perceived Financial Constraints on Consumers' Future Price Expectations for Their Own Country and for Foreign Countries (study 3B)



Note. Each subgraph plots the effect for participants residing in each corresponding country.

While participants generally expected future prices to be higher in their own country than in a foreign country, this gap was stronger among participants who felt more financially constrained (1 SD above the mean,  $\hat{y}_{\text{own country}} = 8.3\%$ ,  $\hat{y}_{\text{foreign countries}} = 7.0\%$ ,  $p < .001$ ) than among participants who felt less financially constrained (1 SD below the mean,  $\hat{y}_{\text{own country}} = 7.0\%$ ,  $\hat{y}_{\text{foreign countries}} = 6.5\%$ ,  $p = .043$ ). These results are consistent with our proposed mechanism. If perceived

financial constraints increase future price expectations due to financially constrained consumers' greater reliance on their perceptions of current prices (vs. other factors), and to the extent that one's perceptions of current prices are more diagnostic of future prices in one's own country, the 'own country' vs. 'foreign country' gap in prediction should be greater among financially constrained consumers.

In sum, study 3B demonstrated the generalizability of the effect beyond Anglo-American contexts. Consumers who felt more financially constrained expected future prices to be higher than did consumers who felt less financially constrained when they made price forecasts for their own country. Importantly, this effect attenuated when participants forecasted future prices for a foreign country. This result provides further evidence that the effect attenuates when consumers' perceptions of current prices are less diagnostic of future prices (H3), a boundary condition that is consistent with our proposed mechanism.

### **STUDY 3C: FORECASTING FUTURE PRICES IN MORE DISTANT TIME PERIODS**

Study 3C examined another instance in which one's perceptions of current prices are less relevant to one's price forecasts: the temporal distance the forecast (e.g., a forecast for the next 12 months, 24 months, 36 months). To the extent that (a) financially constrained consumers' higher future price expectations result from their greater reliance on their perceptions of current prices, and (b) perceptions of current prices are less diagnostic of future prices for more distant (vs. proximal) time periods, the effect should be attenuated when consumers estimate future prices in more distant time periods. We tested this prediction in study 3C.

## Methods

*Sample and Design.* We pre-registered this study using AsPredicted (#109920, [https://aspredicted.org/XWS\\_HG9](https://aspredicted.org/XWS_HG9)). We planned to collect data from 1,000 people, and 1,012 UK residents signed up to participate on Prolific Academic. We excluded 8 participants who did not finish the survey and 10 participants who failed the same attention check used in studies 1A-1C, 2, and 3A-3B, resulting in a final sample of 994 participants (49.6% female,  $M_{\text{age}} = 41.8$ ,  $SD = 12.9$ ). This study adopted an 8 (time periods, within) x continuous (perceived financial constraints, measured) mixed design.

*Procedure.* Participants indicated their expectations of future prices in 12 months and in every subsequent 12-month interval until 8 years into the future (i.e., between 12-24 months, 24-36 months, ..., between 84-96 months). Specifically, they forecasted the percentage by which they expected prices to change in each time period. They provided each forecast in a separate open-ended text box. Participants then completed the same measure of perceived financial constraints ( $\alpha = .90$ ) and attention check used in our prior studies. Finally, participants indicated their age, gender, income, education, ethnicity, and their understanding of inflation.

## Results and Discussion

We were interested in testing whether the effect of perceived financial constraints on future price expectations attenuated when participants forecasted future prices in more distant time periods. To do so, we estimated a multilevel model with future price expectations nested within participants. In the fixed part of the model, we entered perceived financial constraints (between), time period of the forecast (within), and their interaction. The results revealed a significant effect of perceived financial constraints ( $b = 0.91$ ,  $SE = 0.13$ ,  $p < .001$ ), a significant



effect of time period of the forecast ( $b = -0.46$ ,  $SE = 0.05$ ,  $p < .001$ ), and critically, a significant interaction ( $b = -0.03$ ,  $SE = .01$ ,  $p = .001$ ). While greater perceived financial constraints were associated with a higher expected change in future prices overall, this effect was stronger when participants forecasted changes in future prices for more proximal time periods than for more distant time periods. For example, a 1-point increase in perceived financial constraints was associated with a 0.9 percentage-point increase in future price expectations when consumers forecasted the change in prices for one year ahead (i.e., in 12 months from the time of the study), but only with a 0.6 percentage-point increase in future price expectations when consumers forecasted the change in prices for 8 years ahead (between 84-96 months from the time of the study).

*Alternative Explanation.* It is possible there is more uncertainty involved in forecasting future prices in time periods further in the future, and as a result, the effect of *any* factor on future price expectations attenuates for more distant time periods. However, our data do not support this alternative explanation. Of the six covariates we collected, several significantly affected future price expectations, but none of these effects attenuated in time periods further in the future (see web appendix for details).

*Discussion.* Study 3C provided additional evidence for our proposed mechanism by demonstrating that the effect attenuated in another circumstance in which one's perceptions of current prices were less relevant for their forecasts of future prices. When consumers forecasted future prices in more distant time periods, perceived financial constraints had a smaller effect on consumers' future price expectations.

## **STUDY 4A: VARIATION OVER TIME**

In study 4A, we accomplished two main goals. First, we investigated the generalizability of the effect of perceived financial constraints on future price expectations across various points in history. Second, we examined how the magnitude of this effect varied in different economic environments; importantly, we probed whether our theory could predict heterogeneity in the effect in these different economic environments. We have proposed that financially constrained consumers expect higher future prices because they rely more on their subjective perceptions of current prices (vs. other factors) when forecasting future prices. If so, then the effect should be amplified when current prices are perceived as even higher (H4). In study 4A, we assessed one naturally occurring, externally valid economic circumstance in which current prices are likely to be perceived as more expensive: when current prices have risen faster than before (i.e., in times of rising inflation). Thus, we expected the effect of perceived financial constraints on future price expectations to be stronger in times of rising inflation. To examine this proposition, as well as the generalizability of the effect over time, we obtained a dataset spanning four decades.

## Methods

We compiled a unique dataset by merging data from two sources.

*Dataset 1.* We used data from the University of Michigan's Survey of Consumers, a nationally representative survey of US consumers conducted monthly. The survey comprises about 50 questions examining various aspects of consumers' finances and the economy. Starting in 1978, the survey included a measure of future price expectations, as well as questions assessing respondents' perceptions of their financial situation. The data contains responses from 277,401 consumers (49.97% female,  $M_{\text{age}} = 47.01$ ,  $SD = 17.27$ ) provided between 1978-2022.

Different participants were recruited in each wave of the survey, resulting in a multiple cross-sectional design. As a proxy for perceived financial constraints, we used responses to the following question: “Would you say that you (and your family living there) are better off or worse off financially than you were a year ago?” (1 = better off, 2 = same, 3 = worse off). As a measure of future price expectations, we used participants’ responses to the following question: “By what percentage do you expect prices to go up/down, on average, during the next 12 months?” (open-ended).

*Dataset 2.* We merged the data from the University of Michigan’s Survey of Consumers with data on the Consumer Price Index (CPI), obtained from the Bureau of Labor Statistics. The CPI measures changes in the prices of goods and services paid by US consumers and is the leading measure of inflation in the United States. Using this dataset, we calculated annual changes in the CPI—that is, the change in the rate at which prices changed. For each year, we calculated the percentage-point change in the CPI in year  $t$  relative to year  $t-1$ . Thus, this metric indicates times in which prices were rising faster or slower than before (i.e., times of rising or declining inflation).

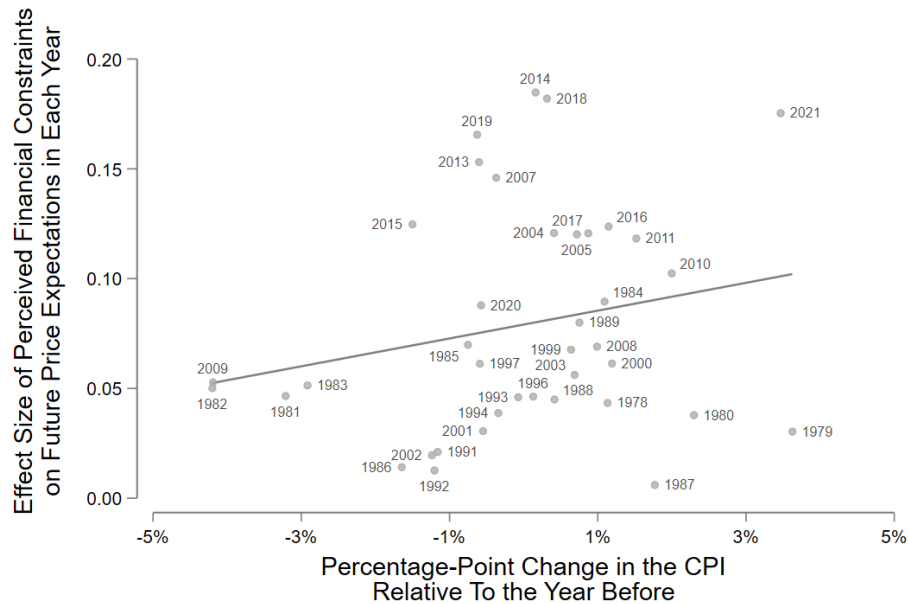
## Results and Discussion

We were interested in examining whether the effect of perceived financial constraints on future price expectations was stronger in circumstances in which current prices were perceived as higher (H4). We probed this proposition by leveraging the longitudinal nature of the dataset and examining differences in the magnitude of the effect over time. Importantly, we tested whether the effect of perceived financial constraints on future price expectations was stronger in years in which inflation was rising (when current prices were likely perceived as higher) than in

years in which inflation was declining (when current prices were likely perceived as lower).

To test this prediction, we estimated a multilevel model with future price expectations nested within year. In the fixed part of the model, we entered perceived financial constraints, the percentage-point change in the CPI in year  $t$  relative to year  $t-1$  (indicating times of rising or declining inflation), and their interaction, controlling for the CPI in year  $t$ . Replicating our prior results, there was a significant effect of perceived financial constraints ( $b = 0.36$ ,  $SE = 0.01$ ,  $p < .001$ ), such that consumers who felt more financially constrained expected changes in future prices to be higher ( $\hat{y}_{+1SD} = 4.3\%$ ) than did consumers who felt less financially constrained ( $\hat{y}_{-1SD} = 3.7\%$ ). There was also a marginally significant effect of the change in the CPI in year  $t$  relative to year  $t-1$  ( $b = 0.09$ ,  $SE = 0.05$ ,  $p = .090$ ). Critically, there was a significant interaction between these two factors ( $b = 0.02$ ,  $SE = 0.01$ ,  $p = .003$ ). Specifically, the greater the increase in the CPI in year  $t$  relative to the preceding year, the stronger the association between perceived financial constraints and future price expectations in that year was. For instance, in years in which the CPI was 3 percentage points higher than in the year before, effect of perceived financial constraints on future price expectations was  $b = 0.41$ ; in years in which the CPI was 3 percentage points lower than the preceding year, the effect of perceived financial constraints on future price expectations was  $b = 0.31$ . Figure 5 illustrates this effect.

Figure 5. Correlation Between Perceived Financial Constraints and Future Price Expectations in Each Between 1978-2022 as a Function of the Change in the CPI in That Year Relative to the Year Before (Study 4A)



*Note.* This graph plots the size of the effect ( $r$ ) of perceived financial constraints on future price expectations in year  $t$  as a function of the change in the CPI in year  $t$  relative to the year  $t-1$ . The effect of perceived financial constraints on future price expectations was stronger in years in which the CPI increased relative to the prior year.

*Discussion.* Using a longitudinal dataset spanning four decades, study 4A demonstrated that perceived financial constraints are systematically associated with higher future price expectations. Critically, our results showed that this effect was stronger in years when prices increased at a higher (vs. lower) rate. This result provides evidence consistent with our proposition that the effect is stronger in circumstances in which current prices are perceived as higher (H4).

#### STUDY 4B: VARIATION ACROSS CATEGORIES

Study 4B further probed our proposition that the effect of perceived financial constraints on future price expectations is stronger in circumstances in which current prices are perceived as higher (H4). Specifically, we assessed whether the effect varied across multiple expenditure categories and, critically, tested if differences in the magnitude of the effect across categories were predicted by how expensive current prices in each category were perceived to be. We predicted that the effect would be stronger in expenditure categories in which current prices were perceived as more expensive.

## Methods

*Sample and Design.* We pre-registered this study using AsPredicted (#137744, [https://aspredicted.org/TZN\\_9QJ](https://aspredicted.org/TZN_9QJ)). We planned to recruit 500 people, and 502 US residents signed up to participate on Prolific. We excluded four participants who failed the same attention check used in studies 1A-1C, 2, 3A-3C, leaving a final sample of 498 participants (49.2% female,  $M_{age} = 41.9$ ,  $SD = 14.2$ ). This study adopted a 14 (category, within) x continuous (perceived financial constraints, measured) mixed design.

*Procedure.* Participants indicated their future price expectations for the same 14 categories used in study 1C. Specifically, they reported the percentage by which they expected future prices in each of these categories to change in 12 months. They provided their responses using an open-ended response format. Next, we measured participants' perceptions of current prices in each category ("How would you describe the current prices in each of the categories below? That is, how cheap or expensive would you say prices in each of the categories below are right now?" 1 = extremely cheap, 4 = neither cheap nor expensive, 7 = extremely expensive). Finally, participants completed the same measure of perceived financial constraints ( $\alpha = .93$ ) and

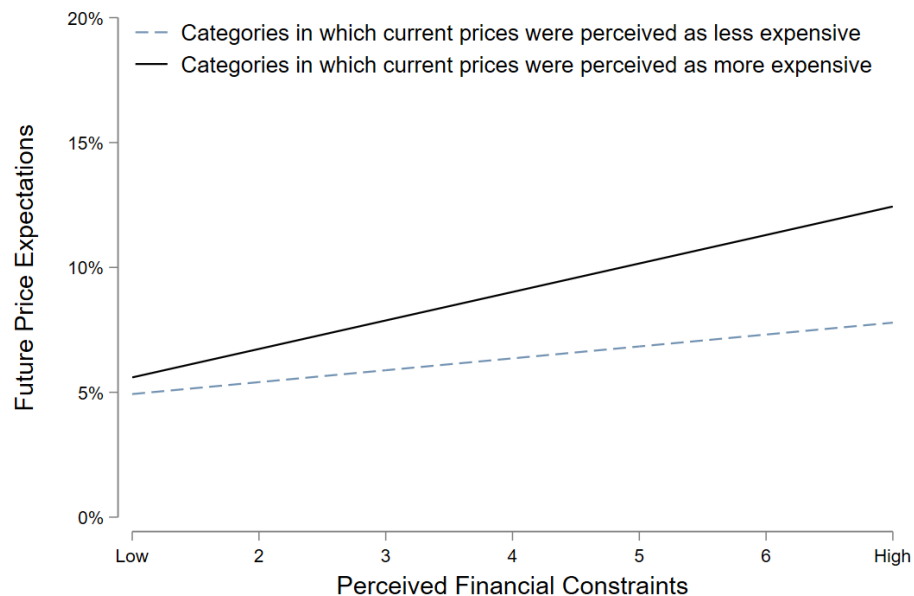
attention check used in studies 1A-1C, 2, and 3A-3C.

## Results and Discussion

We were interested in testing whether the effect of perceived financial constraints on future price expectations was stronger in categories in which current prices were perceived to be more (vs. less) expensive. Thus, as specified in our pre-registration, we first averaged the ratings of current prices within each category across all consumers, resulting in an indicator of how cheap or expensive current prices were perceived to be in each category. By construction, this indicator varied only from category to category. Next, we estimated a multilevel model predicting participants' future price expectations in each category, with crossed random effects for participants and categories. In the fixed part of the model, we entered perceived financial constraints (participant-level), the average perception of the current prices in each category (category-level), and their interaction. To facilitate interpretation, we mean-centered all the variables.

The results revealed a significant effect of perceived financial constraints ( $b = 0.81$ ,  $SE = .19$ ,  $p < .001$ ), a significant effect of the average perception of current prices in the category ( $b = 3.23$ ,  $SE = .32$ ,  $p < .001$ ) and, critically, a significant two-way interaction ( $b = 0.65$ ,  $SE = .09$ ,  $p < .001$ ). Specifically, the effect of perceived financial constraints on future price expectations was stronger in expenditure categories in which current prices were, on average, perceived as more expensive across all consumers (1 SD above the mean,  $b = 1.14$ ,  $SE = .19$ ,  $p < .001$ ), and weaker in categories in which current prices were, on average, perceived as less expensive across all consumers (1 SD below the mean,  $b = 0.48$ ,  $SE = .19$ ,  $p = .013$ ). Figure 6 illustrates this interaction.

Figure 6. Effect of Perceived Financial Constraints on Future Price Expectations Across Categories (Study 4B)



While participants generally expected higher future prices in categories in which current prices were perceived to be more (vs. less) expensive, this gap was larger among consumers who felt more financially constrained. Precisely, consumers who felt more financially constrained (1 SD above the mean) expected future prices to be 11.9% higher in categories that were perceived as more expensive, and 7.6% higher in categories that were perceived as less expensive (a 4.3% difference). By contrast, consumers who felt less financially constrained (1 SD below the mean) expected prices to be 8.4% higher in categories that were perceived as more expensive, and 6.1% higher in categories that were perceived as less expensive (a 2.3% difference). These results further support our proposition that financially constrained consumers' higher future price expectations occur due to their greater reliance on their subjective perception of current prices.

*Discussion.* Study 4B demonstrated that the effect of perceived financial constraints on



future price expectations was stronger in expenditure categories in which current prices were perceived as more expensive (vs. less expensive). Taken together, studies 4A-4B provided converging evidence for our theoretical proposition that the effect is amplified in circumstances in which current prices are perceived as higher (H4).

## **STUDY 5: FUTURE PRICE EXPECTATIONS AND BUDGETARY ALLOCATIONS**

Study 5 examined a potential consequence of higher future price expectations: monetary allocations to various budget categories (e.g., saving, spending on needs, paying off debt). Prior work has shown that consumers who expect higher prices in the future are less likely to defer a purchase (Gunadi and Evangelidis 2022). Thus, it is possible that consumers who expect future prices to be higher spend (vs. save) more money overall. Study 5 tested this prediction.

### Methods

*Sample and Design.* We aimed to recruit 1,000 people, and 1,008 UK residents signed up to participate on Prolific Academic. We pre-registered this study on AsPredicted (#109640, [https://aspredicted.org/YP1\\_S74](https://aspredicted.org/YP1_S74)). We excluded 7 participants who did not finish the survey and 13 who failed an attention check, leaving a final sample of 988 participants (50.0% female,  $M_{\text{age}} = 42.0$ ,  $SD = 12.7$ ).

*Procedure.* First, participants indicated the percentage by which they expected future prices in the overall economy to change in 12 months with the same measure used in studies 1B, 2, and 3A-3C. Next, they completed a budget allocation task adapted from Kappes, Gladstone, and Hershfield (2021). In the task, participants imagined receiving a £20,000 windfall and

indicated how much of this money they would allocate to each of eight categories: 1) “buy things I want”, 2) “buy things I need”, 3) “give to charity or church organizations”, 4) “give or lend to friends or relatives”, 5) “invest or put in savings”, 6) “pay off debts”, 7) “travel”, and 8) “other”. Finally, they provided demographic information and completed the same measure of perceived financial constraints ( $\alpha = 0.91$ ) and attention check used in studies 1A-1C, 2, 3A-3C, and 4B.

## Results and Discussion

*Future Price Expectations.* Replicating our prior results, consumers who felt more financially constrained expected prices to be higher in the future ( $\hat{y}_{+1SD} = 10.7\%$ ) than did consumers who felt less financially constrained ( $\hat{y}_{-1SD} = 8.7\%$ ,  $b = 0.74$ ,  $SE = 0.14$ ,  $t(986) = 5.40$ ,  $p < .001$ ).

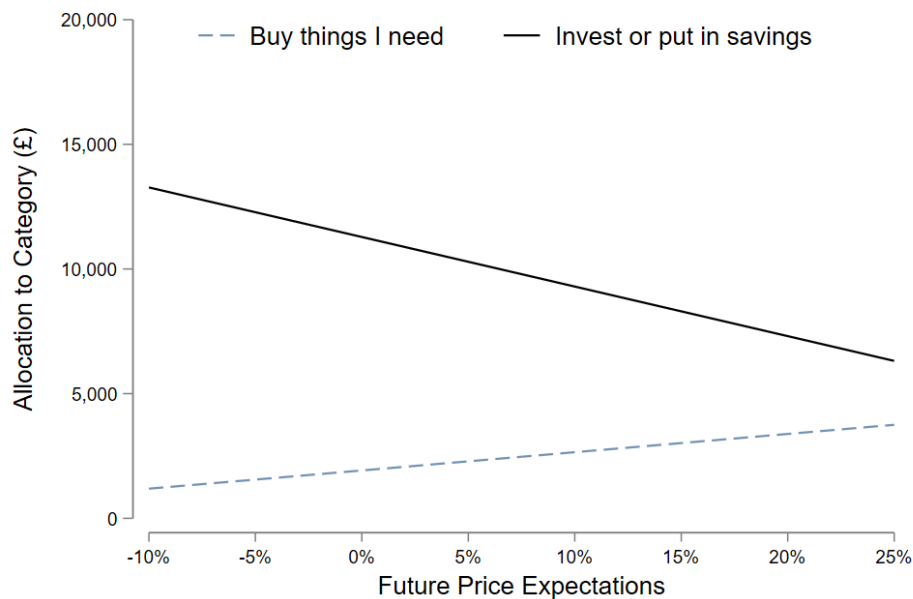
*Budgetary Allocations.* On average, consumers allocated the largest proportion of their windfall to investing or saving (47%), repaying debt (16%), and spending on needs (14%). We were interested in whether perceived financial constraints affected consumers’ allocations, and if so, which of these potential differences were explained by financially constrained consumers’ higher future price expectations.

*Perceived Financial Constraints and Budgetary Allocations.* The effect of perceived financial constraints on consumers’ budgetary allocations was significant for five categories. Consumers who felt more financially constrained allocated more money toward buying needs ( $\hat{y}_{+1SD} = \text{£}3,032$  vs.  $\hat{y}_{-1SD} = \text{£}2,232$ ,  $b = 295.0$ ,  $SE = 70.2$ ,  $t(986) = 4.20$ ,  $p < .001$ ), repaying debt ( $\hat{y}_{+1SD} = \text{£}4,297$  vs.  $\hat{y}_{-1SD} = \text{£}2,002$ ,  $b = 847.3$ ,  $SE = 107.2$ ,  $t(986) = 7.91$ ,  $p < .001$ ), and other uses ( $\hat{y}_{+1SD} = \text{£}332$  vs.  $\hat{y}_{-1SD} = \text{£}198$ ,  $b = 50.0$ ,  $SE = 17.3$ ,  $t(986) = 2.86$ ,  $p = .004$ ), and less money toward investing or saving ( $\hat{y}_{+1SD} = \text{£}7,848$  vs.  $\hat{y}_{-1SD} = \text{£}10,852$ ,  $b = -1108.9$ ,  $SE = 143.2$ ,

$t(986) = -7.74, p < .001$ ) and traveling ( $\hat{y}_{+1SD} = \text{£}1,217$  vs.  $\hat{y}_{-1SD} = \text{£}1,694, b = -176.0, SE = 40.1, t(986) = -4.38, p < .001$ ).

*Indirect Effects.* We were interested in testing which of these allocations were explained by future price expectations. To do so, for each of these categories, we estimated a structural model with perceived financial constraints as the independent variable, future price expectations as the mediator, and the amount participant allocated to the corresponding category as the dependent variable. We estimated the standard errors with 1,000 bootstrapped samples. Future price expectations partially mediated participants' allocation toward two categories: spending on needs ( $b = 46.9, SE = 14.0, p = .001, 95\% \text{ CI: } [19.5 \text{ to } 74.3]$ ) and investing or saving ( $b = -118.2, SE = 31.64, p < .001, 95\% \text{ CI: } [-180.2 \text{ to } -56.2]$ ). Figure 7 illustrates these results.

Figure 7. Allocations Toward Spending and Saving (Study 5)



*Discussion.* Study 5 demonstrated that perceived financial constraints are associated with consumers' budgetary allocations. Our data showed that consumers who felt more (vs. less)

financially constrained allocated more money towards spending on needs, repaying debt, and “other uses,” and less money towards travel and investing or saving. Critically, differences in allocations toward spending on needs and investing or saving were in part explained by financially constrained consumers’ higher future price expectations.

## **STUDY 6: FUTURE PRICE EXPECTATIONS AND CONSUMER DEBT**

Study 5 suggested that financially constrained consumers allocate more money to spending on needs, and that this association is partly explained by their higher future price expectations. The relationship between future price expectations and spending has implications for consumer borrowing and debt. Prior work found a positive association between spending and borrowing (Meier and Sprenger 2010). Thus, to the extent that perceived financial constraints and higher future price expectations are associated with greater spending, consumers who feel more financially constrained and expect higher future prices may be more prone to borrowing and carry more debt. Study 6 tested the association between perceived financial constraints, future price expectations, and consumer debt using proprietary data obtained from the Federal Reserve.

### Methods

*Sample and design.* We obtained data from the Federal Reserve Bank of Philadelphia’s Consumer Finance Institute (CFI)<sup>2</sup>. The dataset included responses from a representative sample

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<sup>2</sup> The survey data are derived from the Federal Reserve Bank of Philadelphia’s CFI COVID-19 Survey of Consumers. The views expressed here are solely those of the author(s) and not necessarily those of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

of 4,628 US residents collected in July 2022 (52.3% female, Median age: 46 – 55 years old).

*Procedure.* The CFI created and distributed a survey to a sample of US participants asking a range of questions about how Covid-19 was affecting their lives. Pertinent to our investigation, the survey also included demographic information and measures of consumers' perceptions of their finances, future price expectations, and debt.

*Perceived Financial Constraints.* Participants indicated how financially secure they felt compared to before the Covid-19 pandemic (I feel... 1 = more secure than I did prior to the crisis, 2 = the same now as I did prior to the crisis, 3 = slightly less secure than I did prior to the crisis, 4 = significantly less secure than I did prior to the crisis).

*Future Price Expectations.* Participants reported the extent to which they expected (1) the price of a gallon of gas, (2) the price of food at the grocery store, and (3) the cost of rent to change over the next 12 months using a five-point scale (1 = significantly decrease, 3 = stay about the same, and 5 = significantly increase). We averaged participants' responses to these three items to create an index of future price expectations ( $\alpha = .84$ ).

*Consumer Debt.* As measures of consumer debt, we observed whether participants had any non-mortgage debt (1 = yes, 0 = no) and the amount they owed on all their credit card statements from the prior month (1 = less than \$500, 2 = \$500-\$999, 3 = \$1,000-\$1,999, 4 = \$2,000-\$2,999, 5 = \$3,000 or higher).

## Results and Discussion

We were interested in estimating the association between perceived financial constraints and future price expectations, and whether higher future price expectations were associated with greater consumer debt. In all the analyses reported below, we controlled for demographic (age,

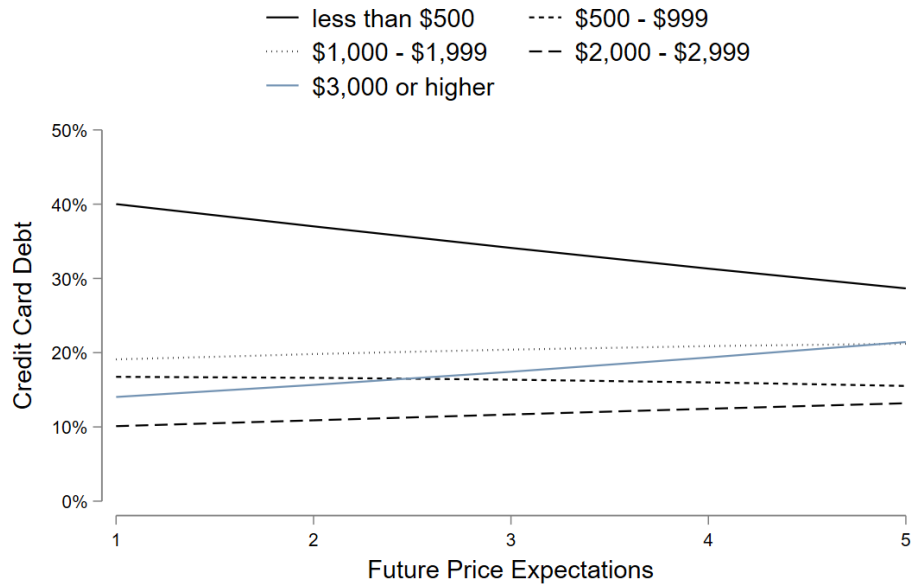
gender, education, ethnicity, marital status, income), social (whether one owns a home or not, employment status) and geographic (state fixed effects, location of primary residence) factors.

*Perceived Financial Constraints and Future Price Expectations.* Replicating our prior results, consumers who felt more financially constrained expected future prices to be higher in 12 months ( $\hat{y}_{+1SD} = 3.79$ ) than did those who felt less financially constrained ( $\hat{y}_{-1SD} = 3.58$ ,  $b = 0.12$ ,  $SE = .015$ ,  $p < .001$ ).

*Probability of Having Non-Mortgage Debt.* We estimated a logistic regression predicting the probability of having non-mortgage debt as a function of perceived financial constraints, future price expectations, and the control variables we outlined above. Consumers who felt more financially constrained were more likely to have non-mortgage debt ( $Pr_{+1SD} = 66.4\%$ ) than were consumers who felt less financially constrained ( $Pr_{-1SD} = 63.4\%$ ,  $OR = 1.09$ ,  $SE = .04$ ,  $p = .045$ ). Critically, future price expectations were also associated with the probability of having non-mortgage debt, such that consumers with higher future price expectations were more likely to have non-mortgage debt ( $Pr_{+1SD} = 68.3\%$ ) than were consumers with lower future price expectations ( $Pr_{-1SD} = 61.5\%$ ,  $OR = 1.22$ ,  $SE = .05$ ,  $p < .001$ ).

*Amount of Credit Card Debt.* Because the amount of credit card debt was collected with a multiple-choice question using unequal intervals, we modeled the data with an ordered logistic regression, controlling for the same variables outlined above. The results revealed that higher perceived financial constraints were associated with having more credit card debt ( $OR = 1.11$ ,  $SE = .04$ ,  $p = .004$ ). Importantly, higher future price expectations were also associated with more credit card debt ( $OR = 1.13$ ,  $SE = .04$ ,  $p = .001$ ). Figure 8 illustrates this effect.

Figure 8. Future Price Expectations and Credit Card Debt



*Note.* This graph plots the results of an ordered logistic regression predicting the amount of credit card debt as a function of future price expectations, after controlling for perceived financial constraints, age, gender, education, ethnicity, marital status, income, whether one owns a home or not, employment status, state fixed effects, and location of primary residence. Each line plots the probability of having the corresponding amount of credit card debt. Higher future price expectations were negatively associated with the likelihood of having less than \$500 in debt and positively associated with the likelihood of having \$3,000 or more in debt.

*Indirect Effect.* We tested whether future price expectations mediated the relationship between perceived financial constraints and consumer debt. First, we estimated the structural path *perceived financial constraints* → *future price expectations* → *probability of having non-mortgage debt*, with standard errors estimated with 1,000 bootstrapped samples. The results revealed a significant indirect effect ( $axb = 0.005$ ,  $SE = .001$ ,  $p < .001$ , 95% CI: [.003 to .008]) and a significant direct effect ( $c' = 0.017$ ,  $SE = .008$ ,  $p = .023$ , 95% CI: [.002 to .033]), indicating that future price expectations partially mediated the effect of perceived financial constraints on the probability of having non-mortgage debt.

We also tested whether future price expectations mediated the effect of perceived

financial constraints on consumers' credit card debt. The direct effect ( $c' = 0.089$ ,  $SE = .028$ ,  $p = .001$ , 95% CI: [.034 to .143]) and the indirect effect ( $axb = 0.013$ ,  $SE = .004$ ,  $p = .001$ , 95% CI: [.005 to .021]) were significant, suggesting that future price expectations partially mediated the effect of perceived financial constraints on how much credit card debt consumers had.

*Discussion.* Study 6 demonstrated that perceived financial constraints were associated with greater debt, and that this association was partly explained by financially constrained consumers' higher future price expectations. Taken together, studies 5 and 6 demonstrate that future price expectations are consequential, predicting meaningful outcomes for consumers.

## **GENERAL DISCUSSION**

The current research investigated the psychological underpinnings of consumers' future price expectations. We believe this investigation is timely, and increasingly relevant, as prices continue to rise in countries throughout the world. Since consumers' expectations of future prices shape consumer choice (Gunadi and Evangelidis 2022; Jacobson and Obermiller 1990), firms' decisions (Coibion, Gorodnichenko, and Weber 2022), and policymakers' decisions about monetary policy (Bernanke 2007), businesses and policymakers are keen to understand the drivers of these expectations. Nonetheless, this understanding is challenging, since consumers disagree on how much they expect prices to change. These diverging expectations raise an interesting psychological question: Why do consumers have different future price expectations? In the current work, we demonstrate the role of perceived financial constraints as a key factor explaining why consumers disagree about their expectations of future prices. Our data reveal four main findings. First, consumers who feel more financially constrained expect future prices



to be higher than do consumers who feel less financially constrained. Second, this effect is driven by financially constrained consumers' greater reliance on their perceptions of current prices (instead of other factors) when forecasting future prices. Third, consistent with our proposed mechanism, the effect attenuates when current prices are less diagnostic of future prices and amplifies when current prices are perceived as higher. Finally, higher future price expectations result in consequential outcomes for consumers—they are associated with lower savings, greater spending, and more debt among consumers who feel financially constrained.

### Theoretical Contributions

The current work offers several contributions to marketing scholarship. First, our findings advance the growing literature on consumers' subjective wealth perceptions and, more specifically, perceived financial constraints. Existing research has shown that feelings of financial constraint affect consumers at every stage of the decision-making process, from preference formation (Tully, Hershfield, and Meyvis 2015) and choice (Sharma and Alter 2012; Briers and Laporte 2013) to post-purchase outcomes (Dias, Sharma, and Fitzsimons 2022). We advance this body of work by demonstrating that perceived financial constraints also shape consumers' expectations about the future. Because expectations play a fundamental role in how individuals process information (de Lange, Heilbron, and Kok 2018), perceive the world (Shiv, Carmon, and Ariely 2005), and behave (Roth and Wohlfart 2020), our findings raise the possibility that the influence of perceived financial constraints on consumers is more pervasive than previously thought. Indeed, diverging from previous research that has largely examined contexts in which perceived financial constraints influence judgments and decisions pertaining to the self (Dias, Sharma, and Fitzsimons 2022; Tully, Hershfield, and Meyvis 2015), the current

work extends the effects of perceived financial constraints into the broader environment in which consumers operate.

Second, the current manuscript contributes to the literature on prices and price expectations. While existing consumer research on prices has largely focused on how consumers evaluate prices (Thomas 2023), the current work examines consumers' expectations of future prices. In addition, in contrast to existing research that has identified individual differences and contextual factors that affect consumers' expectations of future prices (Bruine de Bruin et al. 2012; D'Acunto et al. 2021; Malmendier and Nagel 2016; Bachmann et al. 2021), the current research focuses on the psychological processes underlying the formation of these expectations. We demonstrate the role of perceived financial constraints in shaping future price expectations, provide a parsimonious, theory-grounded explanation for this effect, identify boundary conditions, and show that higher future price expectations have implications for consumer spending, saving, and debt.

Finally, the current manuscript advances the broader literature on consumer finances and financial decision-making. Promoting higher savings and encouraging lower spending is arguably one of the main challenges faced by policymakers in the United States, since many US consumers overspend and do not save enough. For instance, 36% of US consumers believe they will never have enough money for retirement (CNBC 2021). Our findings highlight the role of future price expectations as a possible barrier to increasing savings. Indeed, in our data, even after controlling for income, consumers who felt more financially constrained allocated less money toward saving, and this effect occurred in part because they expected future prices to be higher (study 5). These findings suggest that reducing future price expectations might encourage higher savings, particularly among financially constrained consumers.

## Implications for Policymakers

The current research has important implications for policymakers. Our findings suggest that when consumers feel more financially constrained, their expectations of future prices may be higher than anticipated due to objective factors alone (e.g., supply chain issues, rising cost of materials). These circumstances may be more common than one may presume given that feelings of financial constraint can emerge due to external shocks (e.g., a global pandemic, a recession). Because consumers' expectations of future prices are a key driver of actual price changes in the overall economy (Bernanke 2007; Ang, Bekaert, and Wei 2007), policymakers interested in maintaining price stability may want to consider generalized feelings of financial constraint when implementing monetary policy. In addition, the current research offers insights about how policymakers can counteract the effect of perceived financial constraints on future price expectations: by changing consumers' beliefs about the extent to which current prices shape future prices. When consumers were told that their perceptions of current prices are not diagnostic of future prices, perceived financial constraints were no longer associated with higher future price expectations (study 3A). Thus, in times when consumers generally feel more financially constrained, policymakers may be able to curb higher future price expectations by communicating that high prices in the present are not necessarily diagnostic of future prices.

Our findings also offer insights for policymakers interested in consumers' financial well-being. Our data have shown that consumers who expect higher future prices save less money. For example, when allocating a \$20,000 windfall to various uses, consumers who expected prices to change by a smaller percentage (1 SD below the mean) budgeted about \$10,500 toward savings, and those who expected prices to change by a higher percentage (1 SD above the mean)

budgeted about \$8,200 toward saving (study 5). These results suggest that managing consumers' future price expectations may be an effective approach to increase savings among consumers who feel more financially constrained. Given that the lack of savings is an important concern facing consumers—for instance, about a third of Americans aged 18 and older have less than \$100 in their savings account (GoBankingRates 2023)—our findings underscore the role of high future price expectations as a barrier to consumers' financial health.

### Future Research Directions

The current work offers multiple directions for future research. First, it is possible that other mechanisms explain the relationship between perceived financial constraints and future price expectations. Indeed, in our data, reliance on perceptions of current prices only partially mediated the effect, and consumers who felt more financially constrained expected higher future prices even when their perceptions of current prices were not relevant to their forecast (e.g., when forecasting future prices in a foreign country; study 3B). We believe that exploring additional mechanisms that explain why perceived financial constraints increase future price expectations is a fruitful avenue for future research, as it may help uncover other ways to reduce future price expectations among financially constrained consumers.

In addition, we believe that an important direction for future research is to examine other outcomes that might result from higher future price expectations. While we have demonstrated that financially constrained consumers' higher future price expectations are associated with their budgetary allocation and debt, it is possible that these expectations shape other aspects of consumption. For instance, expecting higher future prices may prompt financially constrained consumers to stockpile or purchase in bulk. Relatedly, expecting higher future prices may

encourage consumers to switch to cheaper brands if these brands are seen as providing better value. We believe that investigating potential changes in consumption that result from higher future price expectations is a key area for future research.

In a similar vein, future research can examine the relationship between future price expectations and the well-being of financially constrained consumers. Recent work has shown that consumers derive lower happiness from their purchases when they feel financially constrained (Dias, Sharma, and Fitzsimons 2022), and that this effect occurs because financial constraints prompt consumers to think about alternative uses of their money. It is possible that other uses of one's money become even more salient when consumers expect higher future prices. If so, higher future price expectations may exacerbate the detrimental effect of financial constraints on well-being, functioning as a psychological tax on financially constrained consumers. Investigating the implications of future price expectations for consumer well-being is a ripe topic for future research.

More broadly, the current work prompts a call for future research on the effects of financial constraints beyond the purchase funnel. To the extent that they affect how consumers process information about the present, financial constraints might shape consumers' future expectations in various domains, such as money (e.g., their future income), purchasing (e.g., the future availability of a product), and consumption (e.g., the likelihood of product failure). Investigating the association between feelings of financial constraint and consumers' future expectations is an important step for future research to broaden our understanding of the psychology of financial constraints.

Conclusion

Consumers' expectations of future prices affect various outcomes, from consumer choice, firms' strategies, policymakers' decisions, to actual price changes in the economy. Thus, various stakeholders care about how these expectations form. The current work takes a step toward understanding the psychology governing the formation of consumers' future price expectation and provides insights for consumers, marketers, and policymakers. For consumers, being aware of how feelings of financial constraint affect their future price expectations can help them make better-informed decisions about spending, saving, and borrowing. Marketers, on the other hand, can use an enhanced understanding of consumers' future price expectations to optimize their pricing and promotion strategies. Finally, understanding the drivers of consumers' future price expectations can help policymakers make decisions about monetary policy and develop communication strategies to alleviate the impact of financial constraints on future price expectations. We hope that the current work inspires marketing scholars to shed further light on the psychological drivers of consumers' expectations of future prices and to continue investigating the consequences of financial constraints for consumers.

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## Web Appendix

### Consumer Wealth and Price Expectations

In this web appendix, we report the results of five supplemental studies and additional analyses and materials for the studies reported in the manuscript.

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## Supplemental Study 1: Replicating the Effect with Purchases with Fluctuating Prices

In supplemental study 1, we sought to replicate the results shown in study 1A with a different set of purchases. Specifically, we examined whether the effect replicates when consumers forecast the future prices of purchases whose prices naturally fluctuate (e.g., flights, rides in a rideshare app).

### Methods

*Sample and design.* We planned to recruit 900 UK residents on, and 901 people signed up to participate on Prolific. We applied the same exclusion criteria used in study 1A and excluded 4 participants who did not complete the survey and 7 who failed an attention check, resulting in a final sample of 890 participants (49.64% female,  $M_{\text{age}} = 44.2$ ,  $SD = 14.0$ ). This study adopted a correlational design.

*Procedure.* Participants were asked to imagine that they were planning a trip and that, as part of their preparations, they were researching several purchases related to this trip. Participants saw five purchases, each presented on a separate screen. They saw the current price of each purchase, and they were asked to estimate the price of the purchase in 6 months. We selected purchases whose price tend to fluctuate (a flight, a hotel, a ride in a rideshare app, a concert ticket, and a train ticket.) After estimating the future prices of each of these purchases, participants completed the same 4-item measure of perceived financial constraints ( $\alpha = .91$ ), attention check, and understanding of inflation used in study 1A.

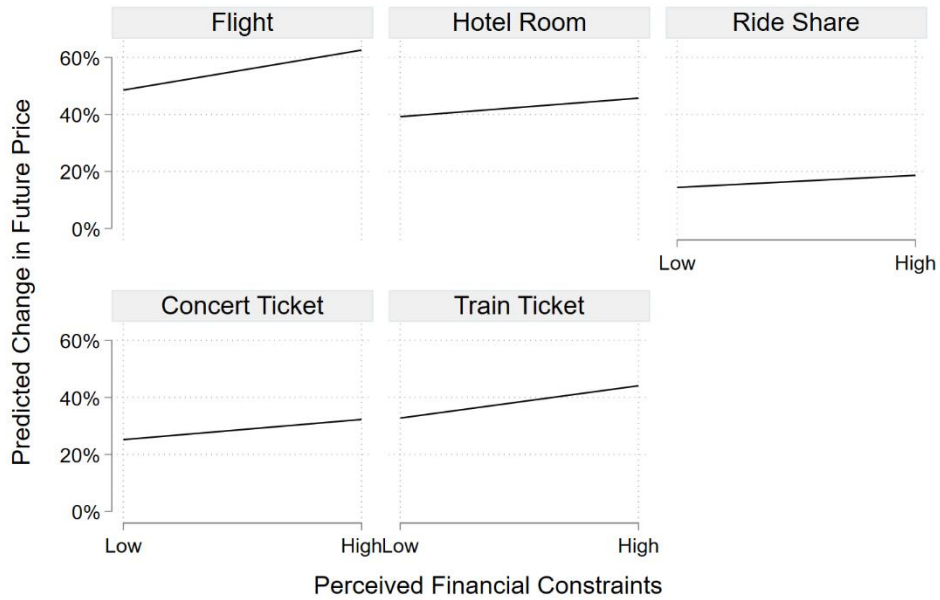
### Results and Discussion

We applied the same two transformations to participants' estimates of future prices as used in study 1A. First, we winsorized their estimates at the 95<sup>th</sup> percentile within each purchase to remove outliers. Second, for each participant-purchase pair, we calculated the implied percentage change in future price estimated by the participant, relative to the current price of the purchase. That is, for each participant-purchase pair, we calculated:  $100 * [(estimate\ of\ future\ price / current\ price\ of\ the\ product) - 1]$ .

As in study 1A, we analyzed the data with a multilevel model with crossed random effects for participants and purchases (Judd, Westfall, and Kenny 2012), with the implied percentage change in the future price of each purchase as the dependent variable and perceived financial constraints as the independent variable. Replicating the results shown in the main manuscript, there was a significant association between perceived financial constraints and price expectations ( $b = 1.44$ ,  $SE = 0.63$ ,  $p = .023$ ). Specifically, participants who felt more financially constrained (1 SD above the mean) expected future prices to be higher ( $\hat{y}_{+1SD} = 38.9\%$ ) than did consumers who felt less financially constrained (1 SD below the mean,  $\hat{y}_{-1SD} = 34.9\%$ ). Figure 1 displays this result.



Figure 1. Effect of Perceived Financial Constraints and Price Expectations with a Set of Purchases with Fluctuating Prices (Supplemental Study 1)



*Discussion.* These results replicate the results shown in study 1A: consumers who felt more financially constrained expected the prices of various purchases to be higher in the future than did consumers who felt less financially constrained. Importantly, supplemental study 1A replicated these results with a set of purchases whose prices tend to fluctuate, thereby providing evidence for the generalizability of the effect.

## Supplemental Study 2: Measuring Price Expectations with a Slider Scale

In study 1B reported in the main manuscript, we elicited participants' future price expectations using an open-ended response format. In supplemental study 2, we measured future price expectations using a slider scale. In doing so, we assessed whether the effect of perceived financial constraints on price expectations is robust to different ways of eliciting consumers' expectations of future prices.

### Methods

*Sample and design.* We planned to recruit 300 US residents on Prolific academic, and 298 people signed up to participate in the study. We excluded two participants who did not finish the survey and three who failed an attention check, leaving a final sample of 293 participants (45.4% female,  $M_{\text{age}} = 37.82$ ,  $SD = 13.15$ ). This study adopted a correlational design.

*Procedure.* Participants indicated the percentage by which they expected prices to change in the United States in 12 months using a horizontal slider scale. The scale ranged from -100% to 100%, with markers at every 25%. Next participants completed the same measure of perceived financial constraints ( $\alpha = .91$ ), attention check, and understanding of inflation used in studies 1A-1B.

### Results and Discussion

Replicating the results shown in the main manuscript, there was a significant association between perceived financial constraints and future price expectations ( $b = 2.42$ ,  $SE = 0.65$ ,  $t(291) = 3.74$ ,  $p < .001$ ). Consumers who felt more financially constrained (1 SD above the mean)

expected prices to be higher ( $\hat{y} = 13.34\%$ ) than did consumers who felt less financially constrained (1 SD below the mean,  $\hat{y} = 6.65\%$ ).

*Discussion.* Supplemental study 2 replicated the results shown in the main manuscript with a different way of eliciting consumers' future price expectations, indicating that the association between perceived financial constraints and future price expectations is robust to different methodological choices.

### Supplemental Study 3: Controlling for Optimism

The results shown in the main manuscript suggest that consumers who feel more financially constrained have higher future price expectations than do consumers who feel less financially constrained. In supplemental study 3, we investigate an alternative explanation for this association: optimism. It is possible that the effect emerged because consumers who feel more financially constrained expect worse outcomes in general. To probe this alternative explanation, in supplemental study 3 we measured and controlled for differences in dispositional optimism (Scheier, Carver, and Bridges 1994).

#### Method

*Sample and design.* We aimed to recruit 300 US participants from Prolific Academic, and 304 signed up to participate in the study. We excluded two participants who did not finish the survey and two who failed an attention check, leaving a final sample of 300 participants (47.3% female,  $M_{age} = 38.9$ ,  $SD = 13.0$ ). This study adopted a correlational design.

*Procedure.* Participants indicated the percentage by which they expected prices to change in the United States in 12 months. Next, they completed the same measure of perceived financial constraints ( $\alpha = .93$ ), attention check, and understanding of inflation used in studies 1A-1B. Critically, participants completed the Revised Life Orientation test (Scheier, Carver, and Bridges 1994), a 6-item measure of dispositional optimism. In this measure, participants indicate their agreement with several statements on a 5-point scale anchored by 1 = strongly disagree and 5 = strongly agree ( $\alpha = .92$ ; sample item: “In uncertain times, I usually expect the best”).

## Results and Discussion

Replicating the results reported in the main manuscript, consumers who felt more financially constrained (1 SD above the mean) expected higher future prices ( $\hat{y} = 9.8\%$ ) than did consumers who felt less financially constrained (1 SD below the mean,  $\hat{y} = 6.6\%$ ,  $b = 1.04$ ,  $SE = .25$ ,  $t(298) = 4.19$ ,  $p < .001$ ). We were interested in testing whether this association held after controlling for participants' optimism. When perceived financial constraints and optimism were entered in the same model as predictors of consumers' future price expectations, perceived financial constraints significantly predicted future price expectations ( $b = 0.96$ ,  $SE = 0.28$ ,  $t(296) = 3.40$ ,  $p = .001$ ) and optimism did not ( $b = -0.30$ ,  $SE = 0.46$ ,  $t(296) = -0.66$ ,  $p = .507$ ). These results indicate that the effect of perceived financial constraints on future price expectations are not due to differences in optimism among consumers with varying levels of perceived financial constraints.

## Supplemental Study 4: Knowledge about Past Prices

It is possible that the effect of perceived financial constraints on future price expectations is due to differences in knowledge about past prices. That is, it is possible that consumers who feel more financially constrained have less knowledge about current and past prices, and these differences, in turn, could explain differences in their future price expectations. Supplemental study 4 examined this explanation by providing participants with the current and past rate at which prices have changed.

### Methods

*Sample and design.* We pre-registered this study using AsPredicted (#112840; [https://aspredicted.org/L89\\_T27](https://aspredicted.org/L89_T27)). We planned to recruit 2,000 US participants, and 2,013 people signed up to participate. We excluded 15 participants who did not finish the survey and 12 who failed an attention check, leaving a final sample of 1,986 participants (48.9% female,  $M_{\text{age}} = 39.1$ ,  $SD = 13.2$ ). This study adopted a 2 (information: past 10 years vs. current year) x continuous (perceived financial constraints, measured) between-subjects design.

*Procedure.* First, participants indicated the percentage by which they expected prices in the United States to change in 12 months using an open-ended response format. Importantly, in this study we manipulated the amount information participants received about past prices. In the ‘past 10 years’ condition, participants saw the rate at which prices have changed in each of the past 10 years in the United States. In the “current year” condition, participants only saw the current year-to-date rate of change in prices in the US. Participants saw this information before providing their future price expectations. After providing their estimates, participants completed

the same measure of perceived financial constraints, understanding of inflation, and attention check used in study 1A, and provided demographic information.

## Results and Discussion

We estimated an ANOVA with future price expectations as the dependent variable and perceived financial constraints (continuous), condition (information: past 10 years vs. current year) and their interaction as independent variables. The results revealed a main effect of perceived financial constraints ( $F(1, 1982) = 26.42, p < .001, \eta^2 = .013$ ), no main effect of condition ( $F(1, 1982) = 0.09, p < .767$ ), and no interaction ( $F(1, 1982) = 0.38, p = .537$ ).

Replicating the results shown in the main manuscript, consumers who felt more financially constrained expect higher future prices (1 SD above the mean,  $\hat{y} = 8.1\%$ ) than did consumers who felt less financially constrained (1 SD below the mean,  $\hat{y} = 7.4\%$ ). This result emerged even though consumers received information about the current rate of change in past prices ('current year condition') and about the annual rate of change in prices in each of 10 years prior to the date of the study ('past 10 years condition'). Moreover, despite the large sample size, the magnitude of the effect was not significantly different in these two conditions.

These results suggest that the effect of perceived financial constraints on future price expectations does not emerge due to differences in consumers' knowledge of the current or past rate at which prices have changed.

## Supplemental Study 5: Controlling for General Financial Knowledge

Supplemental study 5 examined the possibility that the association between perceived financial constraints and consumers' future price expectations emerged due to differences in general financial knowledge. It is possible that consumer who feel more financially constrained have less financial knowledge in general. These differences, in turn, might lead to higher future price expectations among consumers who feel more financially constrained. Supplemental study 5 probed this alternative explanation.

### Methods

*Sample and design.* We planned to recruit 300 UK participants on Prolific Academic, and 302 people signed up to participate in the study. We excluded 4 participants who failed an attention check, resulting in a sample of 298 people (51.0% female,  $M_{\text{age}} = 36.2$ ,  $SD = 11.5$ ). This study adopted a correlational design.

*Procedure.* First, participants indicated the percentage by which they expected prices in the United Kingdom to change in 12 months using an open-ended response format. Next, they indicated heir perceived financial constraints with the same measured used in studies 1A-1B ( $\alpha = .90$ ). Participants then completed a 13-item measure of financial literacy (Fernandes, Lynch, and Netemeyer 2014). The scale measures participants' knowledge about various financial concepts ( $\alpha = .75$ ; sample item: "When an investor spreads his money among different assets, does the risk of losing a lot of money: (1) increases, (2) decreases, (3) stays the same, (4) I don't know"). Finally, participants completed the same attention check used in studies 1A-1B.



## Results and Discussion

In our sample, financial literacy was relatively high. Participants' financial literacy scores were significantly higher than the mean of the financial literacy scale ( $M = 7.7$ ,  $SD = 2.8$ ; vs. 6.5:  $t(297) = 7.26$ ,  $p < .001$ ), and 66% of the participants scored above the mean. Financial literacy was significantly correlated with perceived financial constraints ( $r = -.20$ ,  $p < .001$ ).

We were interested in examining whether the effect of perceived financial constraints on future price expectations held after we controlled for financial literacy. To do so, we estimated a linear regression with future price expectations as the dependent variable and perceived financial constraints and financial literacy as the independent variables. Financial literacy was negatively associated with future price expectations ( $b = -0.24$ ,  $SE = .12$ ,  $p = .042$ ), such that consumers with more financial knowledge (1 SD above the mean) expected lower future prices ( $\hat{y}_{+1SD} = 7.3\%$ ) than did consumers with less financial knowledge (1 SD below the mean,  $\hat{y}_{-1SD} = 8.6\%$ ). Importantly, even after controlling for financial literacy, perceived financial constraints were still associated with future price expectations ( $b = 0.46$ ,  $SE = .24$ ,  $p = .058$ ), such that consumers who felt more financially constrained (1 SD above the mean) expected higher future prices ( $\hat{y}_{+1SD} = 8.6\%$ ) than consumers who felt less financially constrained (1 SD below the mean,  $\hat{y}_{-1SD} = 7.4\%$ ).

*Discussion.* These results demonstrate that the effect of perceived financial constraints on future price expectations is not due to differences in financial literacy.

## **Additional Information for Study 1A**

In this section, we report additional analyses for study 1A in the main manuscript. Table 1 displays the effect of perceived financial constraints on future price expectations of each product individually.

Table 1. Effect of Perceived Financial Constraints on Future Price Expectations for Each Product (Study 1A)

Category	$\hat{y}_{+1SD}$	$\hat{y}_{-1SD}$	$b$	SE	$t$	$p$
Camera	3.2	2.6	0.24	.52	0.46	.646
Coffee	11.7	11.2	0.21	.31	0.69	.493
Hand Lotion	11.9	9.1	1.10	.35	3.14	.002
Toilet Paper	11.1	9.8	0.51	.33	1.57	.117
Nutrition Bars	9.7	8.6	0.42	.41	1.03	.305
Olive Oil	11.9	10.8	0.43	.43	1.01	.312
Laundry Pods	11.2	9.1	0.81	.36	2.24	.026
Paper Towels	11.8	9.8	0.80	.36	2.24	.025
Energy Drink	9.8	7.9	0.75	.30	2.46	.014
Shower Cleaner	14.7	11.6	1.22	.51	2.40	.017

*Note.* Each row reports the results of a regression examining the effect of perceived financial constraints on future price expectations for each product. To facilitate interpretation, and as per our pre-registration, we analyzed the implied percentage change for each product, relative to its current price. The second and third column report the predict value of this dependent variable at 1 SD above and below the mean of the distribution of perceived financial constraints.

## **Additional Information for Study 1B**

In this section, we report additional information about the data of study 1B reported in the manuscript as well as several robustness checks. First, we report demographic information for participants who completed each of the nine waves of the survey (see Table 2). Next, we report several robustness checks for the results reported in the manuscript. Specifically, we report the results of a model controlling for all the covariates we collected in study (robustness check 1), three models using different criteria for including participants in the study (e.g., including only participants who completed more than 3, 5, and 7 waves of the study; see robustness checks 2-4), a model adding third-order autoregressive paths (robustness check 5), a model including only first-order autoregressive paths (robustness check 6), and a model in which we use raw (instead of winsorized) future price expectations (robustness check 7). Table 3 reports the fit of each of these models and Table 4 reports the parameter estimates. Overall, the results of these robustness checks replicate the main results reported in the manuscript: perceived financial constraints in time  $t$  are associated with higher future price expectations in time  $t+1$ , but higher future price expectations in time are not associated with perceived financial constraints in time  $t+1$ .

Table 2. Detailed Demographic Information (Study 1B)

Wave	N	% Female	Average Age	% College or More	% White	Median Income
1	1,170	50.0	42.3	60.6	92.4	£35,000 to £49,999
2	692	46.2	44.7	59.5	92.5	£35,000 to £49,999
3	580	47.1	47.1	58.1	93.5	£35,000 to £49,999
4	688	45.8	45.5	59.5	94.5	£35,000 to £49,999
5	734	47.6	45.3	59.4	93.3	£35,000 to £49,999
6	647	46.4	45.9	55.0	93.7	£35,000 to £49,999
7	588	46.6	45.6	59.2	92.7	£35,000 to £49,999
8	571	46.9	46.4	58.3	94.1	£35,000 to £49,999
9	531	45.4	46.9	57.3	93.0	£35,000 to £49,999

*Note.* Each row reports the demographic information of participants who completed the corresponding wave of the study.

Table 3. Robustness Checks: Model Fit (Study 1B)

Model	$\chi^2$	df	CFI	RMSEA	Model Description
Robustness Check 1	771.7	224	.960	.046	Including covariates
Robustness Check 2	636.2	112	.960	.076	Only participants who completed 3+ waves
Robustness Check 3	602.6	112	.958	.085	Only participants who completed 5+ waves
Robustness Check 4	401.3	112	.964	.088	Only participants who completed 7+ waves
Robustness Check 5	356.3	100	.981	.047	Adding third-order autoregressive path
Robustness Check 6	1902.3	126	.868	.11	Using only first-order autoregressive path
Robustness Check 7	821.9	112	.95	.074	Using raw (instead of winsorized) price expectations

*Note.* Each row reports the model fit for various robustness checks for the analyses reported in the manuscript.

Table 4. Robustness Check: Parameter Estimates (Study 1B)

	<i>b</i>	SE	<i>z</i>	<i>p</i>	Model Description
Financial Constraints <sub>t</sub> -> Price Expectations <sub>t+1</sub>					
Robustness Check 1	0.030	0.008	3.90	< .001	Including covariates
Robustness Check 2	0.033	0.009	3.80	< .001	Only participants who completed 3+ waves
Robustness Check 3	0.024	0.011	2.22	.027	Only participants who completed 5+ waves
Robustness Check 4	0.028	0.007	4.01	< .001	Only participants who completed 7+ waves
Robustness Check 5	0.038	0.007	5.35	< .001	Adding third-order autoregressive path
Robustness Check 6	0.021	0.006	3.54	< .001	Using only first-order autoregressive path
Robustness Check 7	0.030	0.008	3.90	< .001	Using raw (instead of winsorized) price expectations
Price Expectations <sub>t</sub> -> Financial Constraints <sub>t+1</sub>					
Robustness Check 1	0.000	0.008	-0.02	.982	Including covariates
Robustness Check 2	0.004	0.008	0.49	.625	Only participants who completed 3+ waves
Robustness Check 3	0.007	0.010	0.72	.474	Only participants who completed 5+ waves
Robustness Check 4	-0.007	0.008	-0.88	.377	Only participants who completed 7+ waves
Robustness Check 5	0.008	0.008	0.99	.323	Adding third-order autoregressive path
Robustness Check 6	-0.004	0.007	-0.56	.579	Using only first-order autoregressive path
Robustness Check 7	0.000	0.008	-0.02	.982	Using raw (instead of winsorized) price expectations

*Note.* Each row reports a parameter estimate in a robustness check for the results reported in the main manuscript.

## **Additional Information for Study 1C**

In this section, we report additional analyses for study 1C in the manuscript. Table 5 displays the effect of the perceived financial constraints manipulation on future price expectations in each of the 14 categories.



Table 5. Effect of The Perceived Financial Constraints Manipulation on Future Price Expectations Across Multiple Categories (Study

1C)

Category	Financial Constraints condition: Mean (SD)	Control condition: Mean (SD)	<i>t</i>	Cohen's <i>d</i>	<i>p</i>
Airline fares	8.0 (7.7)	7.5 (7.7)	-1.04	0.07	.149
Alcoholic beverages	6.0 (5.8)	5.3 (5.8)	-1.74	0.12	.042
Car insurance	7.1 (6.2)	6.7 (6.4)	-1.03	0.07	.153
Car maintenance and repair	8.7 (8.3)	7.5 (7.4)	-2.16	0.15	.015
Clothing and footwear	7.5 (7.5)	6.4 (7.0)	-2.11	0.15	.018
Electricity	10.7 (10.7)	9.9 (10.3)	-1.18	0.08	.12
Gasoline	11.8 (13.8)	11.2 (14.1)	-0.63	0.04	.265
Groceries	14.1 (14.4)	12.7 (14.3)	-1.37	0.10	.085
New cars	10.4 (11.2)	8.9 (11.0)	-1.85	0.13	.032
Houses	11.3 (15.0)	8.3 (13.8)	-2.90	0.21	.002
Restaurants	10.3 (9.6)	8.7 (9.1)	-2.31	0.16	.011
Rent	12.0 (11.2)	10.7 (11.3)	-1.69	0.12	.046
Used cars	7.9 (9.7)	6.6 (9.5)	-1.79	0.13	.037
Utility (piped) gas service	10.1 (9.9)	9.1 (9.6)	-1.45	0.10	.074

*Note.* Each row reports the results of a t-test examining the effect of condition (financial constraints vs. control) on future price expectations in each category. As pre-registered, we report one-tailed p-values.

## **Additional Information for Study 2**

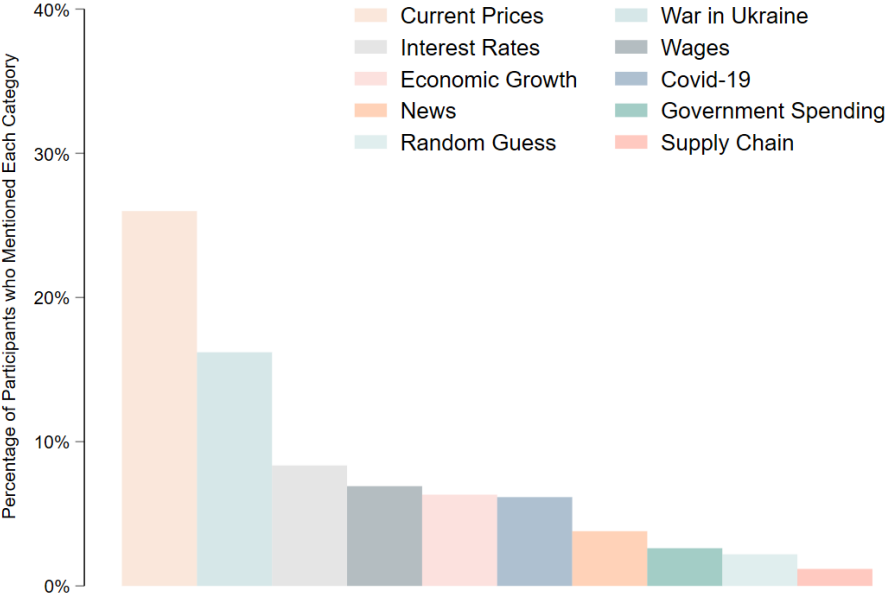
In this section, we report additional analysis for study 2. First, a research assistant coded whether or not participants mentioned each of 9 additional categories when explaining their future price forecasts. Table 6 lists these additional categories and the coding instructions for each of these categories, and Figure 2 illustrates the proportion of participants who mentioned each of these categories in their explanations. Table 7 displays the results of mediation analysis examining the indirect effect of perceived financial constraints on future price expectations through each of these categories. None of these additional categories significantly mediated the effect of perceived financial constraints on future price expectations.

Table 6. Additional Categories Coded in Participants' Open-Ended Explanations for Their Future Price Forecasts (Study 2)

Category	Coding Instructions
Interest Rates	The participant mentioned "interest rates" in their response.
Covid-19 Pandemic	The participant mentioned the Covid-19 pandemic in their response.
War in Ukraine	The participant mentioned the war in Ukraine in their response.
Wages	The participant mentioned wages in their responses (wage increases or decreases).
Supply Chain Issues	The participant mentioned supply chain issues in their response.
Government Spending	The participant mentioned government spending or, more broadly, the government's fiscal decisions.
News	The participant mentioned "the news" (or, more broadly, that they based their response on something they saw or read in the news).
Economic Growth	The participant mentioned economic growth (or economic slowdown) in their response.
Random Guess	The participant mentioned that his/her estimate was based on a random guess.

*Note.* A research assistant coded participants' responses for the presence or absence of each of the categories above.

Figure 2. Proportion of Participants who Mentioned Each Category in their Explanations for their Future Price Forecasts (Study 2)



*Note.* Each bar represents the proportion of participants in study 2 who mentioned the corresponding category in their open-ended explanation for their future price forecasts.

Table 7. Indirect Effect of Perceived Financial Constraints on Future Price Expectations Through Various Additional Categories  
Mentioned in Participants' Explanations (Study 2)

Category	<i>b</i>	SE	<i>z</i>	<i>p</i>	95% CI	
Interest Rates	0.03	0.015	1.89	.059	-0.001	0.059
Covid-19 Pandemic	0.00	0.007	0.27	.787	-0.012	0.016
War in Ukraine	0.01	0.011	0.87	.382	-0.012	0.031
Wages	0.00	0.007	-0.24	.807	-0.015	0.012
Supply Chain Issues	0.01	0.008	1.01	.312	-0.007	0.022
Government Spending	0.00	0.004	0.01	.993	-0.008	0.008
News	0.00	0.008	-0.63	.527	-0.020	0.010
Economic Growth	0.01	0.007	0.74	.462	-0.009	0.020
Random Guess	0.00	0.003	0.02	.985	-0.006	0.007

*Note.* Each row reports the results of a mediation analysis estimating the indirect effect of perceived financial constraints on future price expectations through the corresponding category coded from participants' open-ended explanations for their forecast. Standard errors were calculated with 1,000 bootstrapped samples.

### **Additional Information for Study 3A**

In this section, we reported additional materials for study 3A reported in the main manuscript. Participants in the treatment condition were asked to read an article and summarize it using one or two sentences. Table 8 shows the article read by participants in the treatment condition.

Table 8. Article Shown to Participants in the Treatment Condition (Study 3A)

Treatment Condition	Control Condition
<p data-bbox="228 344 836 380"><b>High Prices Now Don't Mean Inflation Later</b></p> <p data-bbox="203 420 862 596">With prices for goods and services rising in the UK, many people are concerned about inflation. However, it's important to remember that current prices are not necessarily indicative of future prices.</p> <p data-bbox="203 638 833 888">One reason why high prices now may not lead to sustained inflation is that many of the factors driving prices up are temporary in nature. For example, supply chain disruptions, shipping delays, and labor shortages have all contribute to higher prices in the UK, but these issues may be resolved in the coming months.</p> <p data-bbox="203 930 859 1106">Moreover, there are policy responses that can help keep inflation in check. Central banks like the Bank of England can adjust interest rates and other monetary policy tools to influence the overall level of prices in the economy.</p> <p data-bbox="203 1148 854 1545">Indeed, history tells us that high prices are not necessarily a harbinger of inflation. In the past, there have been times when prices have risen sharply due to external factors, but inflation has remained low in the subsequent years. For example, in 1991, inflation in the UK rose sharply to 7.5% and consumers felt the impact of high prices. However, due to the Bank of England's commitment to price stability, inflation then returned to 4.6% and 2.6% in 1992 and 1993, respectively.</p> <p data-bbox="203 1587 842 1726">In conclusion, while it's natural to be concerned about rising prices, historical examples show that high prices now don't necessarily mean inflation later.</p>	<p data-bbox="917 344 1386 380">No article was shown to participants</p>

### **Additional Information for Study 3B**

In this section, we report detailed demographic information and additional analyses for study 3B in the manuscript. Table 9 reports demographic information for participants residing in each of the eight countries from which we sampled participants in the study (Canada, Germany, Italy, Portugal, South Africa, Spain, United Kingdom, United States). Table 10 reports the results separately for participants residing in each of these countries.



Table 9. Demographic Information of Participants from Each Country (Study 3B)

Country	n	Age, mean (SD)	Gender, % female	Household Income, median	Understanding of Inflation, mean
Canada	199	37.9 (12.7)	50.8%	\$75,000 to \$99,999	5.7 (1.1)
Germany	189	31.3 (9.4)	48.7%	€35,000 to €49,999	5.8 (1.1)
Italy	197	32.1 (9.9)	48.7%	€25,000 to €34,999	5.8 (1.1)
Portugal	195	30.3 (9.7)	50.3%	€25,000 to €34,999	5.8 (1.1)
South Africa	193	30.6 (8.8)	48.7%	\$50,000 to \$74,999	6.3 (0.9)
Spain	196	32.8 (9.6)	48.0%	€25,000 to €34,999	5.9 (1.1)
United Kingdom	198	37.5 (10.1)	50.5%	£35,000 to £49,999	5.7 (1.1)
United States	199	36.2 (12.1)	49.3%	\$50,000 to \$74,999	5.9 (1.1)
<b>Overall</b>	<b>1,566</b>	<b>33.6 (10.8)</b>	<b>49.4%</b>	<b>35,000 to 49,999</b>	<b>5.9 (1.1)</b>

*Note.* Each row reports demographic information for participants residing in the corresponding country.

Table 10. Effect of Perceived Financial Constraints on Future Price Expectations (Study 3B)

DV: Future Price Expectations	Canada	Germany	Italy	Portugal	South Africa	Spain	United Kingdom	United States
Perceived Financial Constraints	0.24 <sup>+</sup> (0.13)	0.83* (0.36)	0.56* (0.28)	0.48* (0.24)	0.14 (0.15)	0.44* (0.18)	0.85*** (0.15)	0.41** (0.15)
Estimate Type (1 = Foreign Country, 0 = Own Country)	1.00*** (0.27)	-3.96*** (0.73)	-1.04 (0.65)	-0.46 (0.61)	-0.85 (0.64)	-0.78 (0.71)	-0.89 (0.55)	-0.61 (0.54)
Perceived Financial Constraints X Estimate Type	-0.14 <sup>+</sup> (0.07)	-0.73* (0.32)	-0.14 (0.11)	-0.12 (0.11)	-0.27* (0.11)	-0.23* (0.11)	-0.40*** (0.08)	-0.20** (0.07)
Observations	1,592	1,512	1,576	1,560	1,544	1,568	1,584	1,592

Standard errors in parentheses

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.10$

*Note.* Each column displays the results of a multilevel model with crossed random effects for participants and estimates predicting future price expectations. In the fixed part of the model we entered perceived financial constraints, type of estimate (foreign country vs. one's own country), and their interaction. Each column displays the results for participants residing in the corresponding country.

### **Additional Information for Study 3C**

In this section, we report additional analysis for study 3C in the manuscript. Specifically, we examined the possibility that the effect of *any* factor on consumers' future price expectations attenuates for more temporally distant (vs. proximal) periods. To investigate this alternative explanation, we tested how consumers' future price expectations were affected by all the covariates we collected and, importantly, how these effects changed for more distant (vs. proximal) time periods. If the effect of perceived financial constraints on future price expectations attenuated for more distant (vs. proximal) time periods simply because there is more uncertainty involved in forecasts for periods further ahead in the future, then the effect of any factor on future price expectations will attenuate for more distant periods.

Table 11 displays the results of these analyses. Future price expectations were significantly affected by the interaction between the time period of the forecast and each of three covariates we collected: age, income, and understanding of inflation. Importantly, the effects of these covariates on future price expectations got *stronger* in forecasts for more distant time periods. Moreover, future price expectations were not significantly affected by the interaction between the time period of the forecast and each of the other three covariates we collected (gender, ethnicity, education). Perceived financial constraints were the only variable whose effect on future price expectations attenuated in forecasts for more distant time periods. Together, these results cast doubt on the possibility that the effect of perceived financial constraints on future price expectations attenuated in more distant (vs. proximal) periods simply because there is more uncertainty involved in forecasts for periods further ahead into the future.



Table 11. Interaction Between Covariates and Time Period of the Forecast on Future Price

Expectations (Study 3C)

	Future Price Expectations						
Perceived Financial Constraints	0.78*** (0.13)						
Time Period of the Forecast	0.38** (0.12)	-0.33*** (0.04)	-0.61*** (0.02)	-0.63*** (0.05)	-0.58*** (0.05)	-0.55*** (0.03)	-0.26*** (0.06)
Perceived Financial Constraints X Time Period of the Forecast	-0.07*** (0.01)						
Age	-0.02 (0.01)	-0.02 (0.01)					
Age X Time Period of the Forecast	-0.01*** (0.00)	-0.01*** (0.00)					
Gender (1 = Male)	-1.25*** (0.34)		-1.52*** (0.33)				
Gender X Time Period of the Forecast	0.02 (0.03)		-0.02 (0.03)				
Education	-0.36*** (0.10)			-0.44*** (0.10)			
Education X Time Period of the Forecast	0.00 (0.01)			0.00 (0.01)			
Ethnicity (1 = White)	0.39 (0.61)				0.76 (0.62)		
Ethnicity X Time Period of the Forecast	0.05 (0.05)				-0.04 (0.05)		
Income	-0.04 (0.12)					-0.43*** (0.11)	
Income X Time Period of the Forecast	-0.05*** (0.01)					-0.02* (0.01)	
Understanding of Inflation	-0.04 (0.14)						-0.37** (0.14)
Understanding of Inflation X Time Period of the Forecast	-0.06*** (0.01)						-0.06*** (0.01)
Observations	7,952	7,952	7,952	7,952	7,952	7,952	7,952

Standard errors in parentheses

\*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10

*Note.* Each column reports the results of a multilevel model with future price expectations nested within participants, with future price expectations predicted by perceived financial constraints, covariates, time period of the forecast, and the interaction between each covariate and the time period of the forecast.

## **Additional Information for Study 4A**

In this section, we report additional analyses for study 4A reported in the manuscript.

Table 12 displays the regression results for the main analyses reported in the manuscript.

Table 12. Future Price Expectations from 1978-2021 Predicted by Perceived Financial Constraints, Change in the CPI Relative to the Year Before, and Their Interaction (Study 4A)

	Future Price Expectations		
Perceived Financial Constraints	0.36*** (0.01)	0.36*** (0.01)	0.45*** (0.02)
Change in the CPI in year $t$ relative to year $t-1$	0.32* (0.13)	0.09+ (0.05)	-0.03 (0.07)
Perceived Financial Constraints x Change in the CPI	0.02** (0.01)	0.02** (0.01)	0.07*** (0.01)
CPI in year $t$	No	Yes	Yes
Demographics	No	No	Yes
Observations	272,822	272,822	50,339
Number of groups	44	44	16

Standard errors in parentheses

\*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ , +  $p < 0.10$

*Note.* Change in the CPI is the percentage-point difference in the CPI in year  $t$  relative to the year  $t-1$ . These results show that perceived financial constraints increase future price expectations, and that this effect is stronger in years in which the CPI is larger than the preceding year. In the third column, we added the following demographic variable: age, gender, education, income, political affiliation, number of kids in the household, region, and marital status.

## **Additional Information for Study 4B**

In this section, we report additional analyses for study 4B reported in the main manuscript. Table 13 displays the effect of perceived financial constraints on future price expectations in each of the 14 categories used in the study. Figure 3 provides a different visualization for the effect shown in the main manuscript.

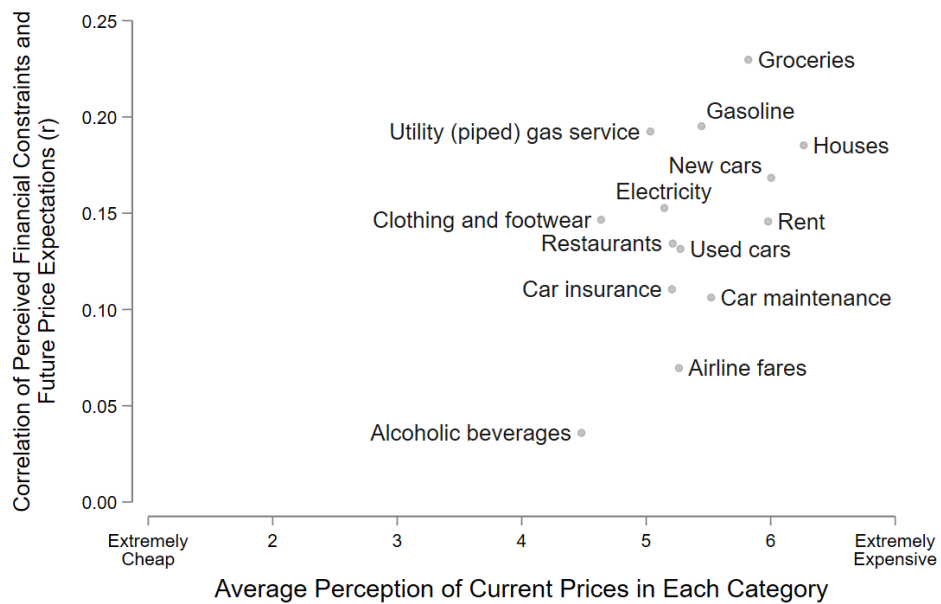


Table 13. Effect of Perceived Financial Constraints on Future Price Expectations in Each Category (Study 4B)

Category	$\hat{y}_{+1SD}$	$\hat{y}_{-1SD}$	$b$	SE	t	$p$
Airline fares	7.1	8.0	0.30	.19	1.56	.120
Alcoholic beverages	5.3	5.0	0.11	.14	0.81	.420
Car insurance	8.5	7.0	0.49	.20	2.48	.013
Car maintenance and repair	9.1	7.6	0.48	.20	2.39	.017
Clothing and footwear	7.5	5.8	0.57	.17	3.31	.001
Electricity	9.9	7.3	0.84	.24	3.45	.001
Gasoline	10.5	7.0	1.14	.26	4.44	< .001
Groceries	13.0	8.1	1.61	.31	5.26	< .001
New cars	11.7	8.4	1.09	.29	3.81	< .001
Houses	13.6	8.8	1.57	.37	4.20	< .001
Restaurants	9.2	7.4	0.58	.19	3.02	.003
Rent	12.5	9.6	0.95	.29	3.29	.001
Used cars	8.3	6.1	0.71	.24	2.96	.003
Utility (piped) gas service	8.8	6.1	0.87	.20	4.37	< .001

*Note.* Each row reports the results of a regression with future price expectations in the corresponding category as the dependent variable and perceived financial constraints as the independent variable.

Figure 3. Effect of Perceived Financial Constraints on Future Price Expectations in Each Category, as a Function of the Average Perception of Current Prices in the Category (Study 4B)



*Note.* Each data point in this figure represents one of the 14 categories for which participants forecasted future prices in study 4B. The x axis represents the average ratings of how cheap or expensive current prices were in the category. The y axis represents the effect size of perceived financial constraints on future price expectations in the category. This figure demonstrates that the effect of perceived financial constraints on future price expectations is stronger in categories in which current prices were perceived as higher across all participants.

## **Additional Information for Study 5**

In this section, we report additional results for study 5 in the main manuscript. Table 14 reports a correlation matrix for the main variables in the study (perceived financial constraints, future price expectations, and the monetary amount participants allocated to each category).

Table 15 reports the indirect effect of perceived financial constraints on the amount participants allocated to each category through future price expectations.

Table 14. Correlation Between Perceived Financial Constraints, Future Price Expectations, and the Amount Allocated to Various

Budgetary Categories (Study 5)

Wave	1	2	3	4	5	6	7	8	9	10
1. Perceived Financial Constraints	4.5									
2. Future Price Expectations	0.17	9.7								
3. Spending on Wants	0.01	0.06	1,262.1							
4. Spending on Needs	0.13	0.14	0.23	2,632.4						
5. Give to church or charity	-0.05	0.04	0.10	0.10	135.0					
6. Give to friends or relatives	0.03	0.11	0.03	0.06	0.20	135.0				
7. Invest or put in savings	-0.24	-0.19	-0.28	-0.42	-0.09	-0.22	9,350.7			
8. Pay off debts	0.24	0.08	-0.13	-0.13	-0.12	-0.11	-0.56	3,149.7		
9. Travel	-0.14	0.04	0.15	-0.01	0.02	0.06	-0.19	-0.17	1,455.9	
10. Other	0.09	0.02	-0.01	-0.02	0.07	0.00	-0.22	-0.06	0.02	265.7

*Note.* As indicated in our pre-registration, we winsorized future price expectations and the amount allocated to each category at the 95<sup>th</sup> percentile to remove outliers. The main diagonal reports the means of each variable.

Table 15. Indirect Effect of Perceived Financial Constraints on the Amount Allocated to Each Category Through Future Price

Expectations (Study 5)

Budget Category	<i>b</i>	SE	<i>z</i>	<i>p</i>	95% CI	
Spending on Wants	10.4	7.0	1.48	.138	-3.4	24.2
Spending on Needs	46.9	14.0	3.35	.001	19.4	74.3
Give to church or charity	1.7	1.2	1.51	.132	-0.5	4.1
Give to friends or relatives	18.3	7.2	2.55	.011	4.2	32.4
Invest or put in savings	-118.2	31.6	-3.74	< .001	-180.2	-56.2
Pay off debts	24.0	20.0	1.20	.231	-15.2	63.1
Travel	13.7	7.5	1.84	.066	-0.9	28.4
Other	0.5	3.44	0.13	.893	-6.3	7.2

*Note.* Each row reports the results of a mediation analysis estimating the indirect effect of perceived financial constraints on the amount allocated to each category through future price expectations. Each standard error was calculated with 1,000 bootstrapped samples.

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