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WP 25-23

PUBLISHED

August 2025



ISSN: 1962-5361

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DOI: <https://doi.org/10.21799/frbp.wp.2025.23>

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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 influence policymaking, firms' decisions, and consumer choice. Across 11 studies (N = 289,437), including a nine-wave longitudinal survey, a multinational study in twelve countries, a multidecade study with 250,000+ consumers, 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. We demonstrate that this effect is driven by pain of paying: financially constrained consumers experience greater pain when paying for purchases, causing them to expect higher prices in the future. Accordingly, this effect is stronger in product categories, countries, and historical periods in which paying for purchases is especially painful. Finally, we show that consumers' future price expectations are consequential, predicting stockpiling and a preference for fixed-price contracts among financially constrained consumers. Overall, the current work underscores the role of future price expectations as a driver of consumer behavior, demonstrates how these expectations are formed, and offers insights for consumers, marketers, and policymakers.

Keywords: inflation; financial constraints; pain of paying; inflation expectations; consumer finances.

Prices have reached record-high levels in recent years (IMF 2022), and inflation—the rate at which prices change—is the primary concern for consumers across the globe (Ipsos 2024). 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). Consumers’ future price expectations also influence the actions of various stakeholders, including consumers (Gunadi and Evangelidis 2022), 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 price expectations.

The current manuscript addresses 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 11 studies ($N = 289,437$) leveraging cross-sectional, longitudinal, and experimentally induced variation in financial constraints, 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 twelve countries, a study with over 250,000 consumers spanning four decades, and several experiments. Moreover, we demonstrate that this effect is driven by pain of paying: financially constrained consumers experience greater pain when spending money, which in turn leads them to forecast higher future prices. Consistent with this mechanism, we find that the effect is stronger in circumstances in which pain of paying is naturally higher (e.g., in expenditure categories where spending money is particularly painful, in economic environments that intensify the discomfort of spending money.) Finally, we show that

price expectations are a driver of consumer behavior, predicting important downstream consequences. Specifically, we demonstrate that higher future price expectations predict stockpiling and a preference for fixed-price contracts among financially constrained consumers.

SUBJECTIVE WEALTH AND PERCEIVED FINANCIAL CONSTRAINTS

Subjective wealth refers to consumers' perceptions of their financial situation. 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). A large body of work has demonstrated that consumers' objective financial situation is distinct from 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). 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 et al. 2018), preference formation (Tully,

Hershfield, and Meyvis 2015), choice (Briers and Laporte 2013), and post-consumption outcomes (Dias, Sharma, and Fitzsimons 2022). Despite burgeoning research on the effects of 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 shape how consumers process information, formulate judgments, and behave. Within the realm of consumers' expectations, price expectations are arguably among the most consequential, as they shape the decisions of virtually every stakeholder involved (Gunadi and Evangelidis 2022; Coibion, Gorodnichenko, and Weber 2022; 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 how much prices will change—that is, their expectations regarding the rate of change in 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' decisions to raise prices (Coibion, Gorodnichenko, and Ropele 2020), policymakers' decisions about monetary policy (Bernanke 2007), and actual changes in prices in the economy (Ang, Bekaert, and Wei 2007).

Given their far-reaching consequences, a growing literature has investigated how consumers form expectations of future prices. Notably, extant research has shown that objective

information plays a limited role in shaping these expectations (Dräger 2015; Lamla and Vinogradov 2019). For example, the extent to which consumers expect prices to change is only weakly influenced by the inflation they experience (Weber, Gorodnichenko, and Coibion 2023), media coverage (Dräger 2015), and central bank communications (Lamla and Vinogradov 2019). Instead, consumers' future price expectations are more strongly influenced by subjective and perceptual factors (Bruine De Bruin et al. 2017; D'Acunto et al. 2021; Weber, Gorodnichenko, and Coibion 2023). We contribute to this body of work by demonstrating the role of consumers' perceptions of their finances—more specifically, their perceived financial constraints—in shaping future price expectations.

THE CURRENT RESEARCH

Existing research offers competing predictions for how perceived financial constraints might affect future price expectations. At least two streams of research suggest that perceived financial constraints might lead to lower future price expectations. First, because individuals engage in motivated reasoning (Kunda 1990), and consumers experiencing resource scarcity are motivated to alleviate their unpleasant state (Cannon, Goldsmith, and Roux 2019), it is possible that financially constrained consumers engage in defensive optimism, resulting in lower future price expectations. A second possibility is related to anchoring. To the extent that prices are more salient to financially constrained consumers (Shah et al. 2018), they may anchor their future price expectations on current prices, forecasting future prices to be closer to the anchor, thereby predicting smaller changes in future prices.

Contrary to these streams of research, we suggest that consumers who feel more

financially constrained will expect future prices to be higher, as compared to consumers who feel less financially constrained. We propose that this effect is driven by pain of paying—a negative emotional reaction consumers experience when they spend money, which may occur after or in anticipation of making a purchase. This negative emotional reaction to parting with money is a widespread experience among consumers (Rick, Cryder, and Loewenstein 2008), as it is rooted in higher-order neural processes (Mazar et al. 2016). However, prior work has shown that the intensity of this pain is not uniform; it varies across individuals (Rick, Cryder, and Loewenstein 2008), payment methods (Thomas, Desai, and Seenivasan 2011), situational factors (Choe and Kan 2021), and macroeconomic contexts (Gladstone and Masters-Waage 2024). In the current work, we propose that feeling financially constrained makes spending more painful.

Perceived Financial Constraints and Pain of Paying

We hypothesize that consumers will experience greater pain of paying when they feel financially constrained. Prior research provides three reasons supporting this proposition. The first is related to opportunity cost consideration. Specifically, several studies have shown that consumers who feel more financially constrained are more likely to consider opportunity costs when thinking about their purchases (Spiller 2011; Dias, Sharma, and Fitzsimons 2022).

Considering opportunity costs, in turn, increases the pain consumers experience when they part with money (Frederick et al. 2009; Sheehan and Van Ittersum 2018).

Another reason is related to budgeting and the disbursement of financial resources. Prior work has shown that pain of paying is greater when consumers spend funds from budgets that are close to depletion (Soster, Gershoff, and Bearden 2014). Consumers who feel more financially constrained may have more limited budgets and thus be more likely to spend money from

budgets approaching depletion, resulting in greater pain of paying. Finally, consumers who feel more financially constrained may experience greater pain of paying due to a stronger goal of maintaining financial slack. Recent studies have shown that consumers experience greater pain of paying when they have a goal of maintaining financial slack (Pomerance and Reinholtz 2024). This goal of preserving financial slack may be particularly strong among constrained consumers, since concerns about money are generally more salient to them (Shah et al. 2018). In sum, to the extent that consumers who feel more financially constrained are more likely to (a) consider opportunity costs, (b) have budgets close to depletion, and (c) have a goal of maintaining financial slack, they should experience greater pain of paying.

Pain of Paying and Future Price Expectations

We also hypothesize that experiencing pain of paying will result in higher future price expectations. We ground this prediction in prior work examining how consumers form price expectations. A consistent finding in this body of work is that consumers follow an autoregressive process when forming price expectations—that is, when they estimate the rate at which prices will change, the primary factor influencing their forecasts is their perception of how much prices have changed (Jonung 1981). Indeed, prior work has shown a positive association between perceived and expected price changes, such that the more a consumer perceives that current prices have increased, the larger the price increase they expect (Blomqvist 1983; Kemp 1987; Ranyard et al. 2008; Dräger 2015). For example, in one study, consumers’ predictions of the future prices of various products were associated with their estimates of how much the price of these products had changed, with correlations ranging from .08 to .29 across products (Kemp 1987). In another study, consumers’ perceived rate of current inflation explained 25 to 37% of

the variance in their inflation expectations (Jonung 1981). Indeed, the price increases consumers expect are more strongly associated with how much they perceive current prices to have changed than with the actual price changes in their consumption basket (Weber, Gorodnichenko, and Coibion 2023).

Building on this foundation, we expect consumers to form future price expectations by projecting the change they perceive in current prices. Importantly, two conceptual reasons suggest that pain of paying may increase the extent to which consumers perceive current prices to have increased, thereby resulting in higher future price expectations. The first is related to the salience of prices. Prior work has shown that when prices are more salient, consumers pay more attention to price increases than to price decreases (D’Acunto et al. 2021). Consequently, when prices are more salient, consumers ascribe disproportionate weight to price increases (vs. decreases), increasing price expectations. Indeed, consumers who grocery shop more often—an activity that increases price salience—tend to expect higher future prices (D’Acunto, Malmendier, and Weber 2021). Since pain of paying directs consumers’ attention toward prices (Sheehan and Van Ittersum 2018), it may increase the extent to which consumers perceive current prices to have increased, leading to higher price expectations.

The second reason is related to consumers’ memories of past prices. Prior research has shown that individuals experiencing negative emotions tend to have a rosy view of the past (Parrott and Sabini 1990). Thus, consumers experiencing pain of paying—a negative emotional state—may remember past prices more favorably, which could exaggerate the increase they perceive in current prices and raise their future price expectations. In sum, to the extent that pain of paying (a) increases price salience and (b) fosters an idealized memory of past prices, it should lead to higher 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 pain of paying. Specifically, consumers who feel more financially constrained will experience greater pain when spending money, which in turn will result in higher future price expectations.

Our theoretical rationale suggests a few moderators of the effect. If financial constraints result in higher future price expectations because they increase pain of paying, this overall effect should be attenuated when pain of paying does not translate to higher future price expectations (b-path). We theorize that pain of paying leads to higher future price expectations because it increases how much consumers perceive current prices to have increased, which serves as a basis for their price expectations. This rationale suggests two moderators of the effect. First, the effect should be attenuated when consumers believe that current prices are not diagnostic of future prices. Second, the effect should be weaker in situations where pain of paying does not amplify perceptions of current price increases—for example, when consumers are provided with objective information about the actual extent of current price changes. We summarize these two hypotheses below:

H3: The positive effect of financial constraints on consumers' future price expectations will be attenuated when pain of paying does not lead to higher future price expectations. This will occur when consumers:

- a. infer (or are to believe) that current prices are a weak signal of future prices.
- b. receive information about how much current prices have changed.

In addition, we hypothesize that the positive effect of financial constraints on price expectations will be stronger in contexts where pain of paying is naturally higher. We base this prediction on prior work showing that differences between consumers who typically experience pain of paying (i.e., ‘tightwads’) and those who do not (i.e., ‘spendthrifts’) are largest in situations that intensify pain of paying (Rick, Cryder, and Loewenstein 2008). Several findings from existing research support this proposition. For example, spending differences between tightwads and spendthrifts are larger when they buy a product framed as hedonic (which elicits greater pain of paying) than utilitarian (Rick, Cryder, and Loewenstein 2008), during an economic downturn (Gladstone and Masters-Waage 2024), and when consumers buy vice products using cash (which is more conducive to pain of paying) instead of credit cards (Thomas, Desai, and Seenivasan 2011). Building on these findings, we propose that the positive effect of financial constraints on price expectations will be stronger in circumstances in which pain of paying is higher. We test this proposition by exploiting natural variation in pain of paying across three levels of analysis: (a) across expenditure categories, (b) across countries, and (c) across historical periods. More formally:

H4: The positive effect of financial constraints on consumers’ price expectations will be stronger in circumstances in which paying for purchases is naturally more painful. In particular, the effect will be stronger:

- a. when consumers forecast future prices in expenditure categories in which

- paying for purchases is generally more painful,
- b. in countries where paying for purchases is generally more painful, and
 - c. during historical periods when paying for purchases is especially painful.

In the remainder of this manuscript, we report the results of 11 studies ($N = 289,437$) examining the effect of perceived financial constraints on consumers' expectations of future prices. To increase internal and external validity, we leverage multiple sources of variation in perceived financial constraints, use various measures of future price expectations, and rely on large, diverse samples. We begin by providing evidence for the main effect in three ways: examining the association between financial constraints and consumers' forecasts of the future prices of specific products (study 1A), investigating longitudinal covariation in financial constraints and 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 1-4 in the web appendix conceptually replicate the effect and rule out several alternative accounts such as differences in optimism and financial literacy.

We then provide evidence for our proposed mechanism by experimentally manipulating financial constraints and directly measuring pain of paying (study 2). Studies 3A-3B further probed our mechanism using a process-by-moderation approach. Specifically, we demonstrate that the effect attenuates when consumers are led to believe that current prices are not a relevant signal of future prices (study 3A) or when they receive objective information about how much current prices have changed (study 3B).

Next, we report three studies providing evidence for our proposition that the effect is

stronger in contexts where pain of paying is naturally higher. Study 4A leverages category-to-category variation in pain of paying and shows that the effect is stronger in expenditure categories in which paying for purchases is more painful. Study 4B leverages geographical variation in pain of paying by examining a dataset including consumers residing in 12 countries. Using this dataset, we demonstrate that the association between perceived financial constraints and future price expectations is robust across countries and, importantly, that this association is stronger in countries where consumers experience greater pain of paying. Study 4C leverages temporal variation in pain of paying and demonstrates that the effect is stronger in historical periods in which paying for purchases was more (vs. less) painful. Specifically, in study 4C we analyze a dataset with large representative samples of US consumers collected from 1978 to 2021 and demonstrate that the association between financial constraints and price expectations is stronger in years in which pain of paying was higher (vs. lower). By examining a dataset spanning four decades, study 4C shows that the effect is robust over time, rather than emerging due to idiosyncratic aspects of the current economic environment.

Finally, we explore downstream consequences of expecting higher future prices. We find that future price expectations are associated with stockpiling (study 5) and a preference for fixed-price contracts among financially constrained consumers (study 6). We conclude by discussing theoretical and practical implications of our findings and outlining open questions 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.

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). We planned to collect data from 500 people, and 499 UK residents signed up to participate on Prolific. We excluded four people who failed an attention check, leaving a final sample of 495 participants (50.7% female, $M_{\text{age}} = 35.5$, $SD = 12.1$).

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 using an open-ended text box. After estimating the future prices 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). Finally, they completed an attention check, a question assessing their understanding of inflation, and provided demographic information.

Results and Discussion

Data Transformation. 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 95th percentile within each product. Second, for each participant-product pair, we calculated the percentage change implied by each participant's future price estimates, relative to the product's current price. That is, for each participant-product pair, we calculated: $100 * [(\text{estimate of future price} / \text{current price of the product}) - 1]$.

Perceived Financial Constraints and Future Price Expectations. We analyzed the data with a multilevel model with crossed random effects for participants and products, 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 ($b = 0.65$, $SE = 0.28$, $z = 2.32$, $p = .020$), 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 ($\hat{y}_{+1SD} = 9.0\%$).

Prediction Accuracy: Data Transformation. To explore how accurate consumers' predictions were, we collected actual product prices on the same platform one year after the study. Two of the ten products were no longer available and were therefore not included in this analysis. We then applied three transformations to participants' estimates. For each participant-product pair, we (1) calculated the percentage change implied by participants' estimates relative to the product's price, (2) computed the prediction error as the difference between this implied percentage change and the actual percentage change in the product's price 12 months after the study, and (3) winsorized the prediction error at the 95th percentile within each product.

Prediction Accuracy: Results. On average, participants overestimated the extent to which prices increased by 11.9 percentage points. To examine whether prediction errors were associated with perceived financial constraints, we estimated a multilevel model with crossed

random effects for participants and products, with perceived financial constraints as the independent variable. The results revealed that perceived financial constraints were significantly associated with consumers' prediction errors ($b = 0.62$, $SE = 0.29$, $z = 2.15$, $p = .032$), such that for each unit increase in financial constraints, participants overestimated the extent to which prices increased by an additional 0.62 percentage points.

Discussion. Study 1A provided initial evidence for the association between perceived financial constraints and future price expectations. Consumers who felt more financially constrained expected the future prices of various products to be higher than did consumers who felt less financially constrained. Moreover, we found that consumers generally overestimated the extent to which prices would increase and that this overestimation was greater among financially constrained consumers. To examine the generalizability of the association between financial constraints and price expectations, we replicated study 1A using a set of purchases for which prices tend to fluctuate (e.g., airline tickets). Once again, greater perceived financial constraints were associated with higher price expectations ($n = 890$, $b = 1.44$, $SE = 0.63$, $p = .023$; see supplemental study 1 in the web appendix for details).

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

Study 1B sought to disentangle the temporal dynamics of the association between perceived financial constraints and future price expectations. Do greater financial constraints precede higher future price expectations, or do higher future price expectations precede greater feelings of financial constraint? To examine this question, we investigated how these constructs

covary over time. Moreover, study 1B examined whether the association generalizes to estimates of future changes in prices in the economy (rather than 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.

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 using an open-ended text box. Specifically, they were told that the rate of change in prices over a given period is referred to as inflation, and were asked to estimate what inflation would be in 12 months. 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

Analysis. We winsorized participants' future price expectations at the 95th percentile within each wave to remove outliers. We were interested in examining the dynamics of the relationship between financial constraints and 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 wanted to estimate the association between perceived financial constraints in time t and future price expectations in time $t+1$, and the association between future price expectations in time t and perceived financial constraints in time $t+1$.

Model and Results. 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 paths 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 association between financial constraints in time t and future price expectations in time $t+1$ ($b = 0.03$, SE = .01, $z = 4.20$, $p < .001$). In contrast, future price expectations in time t did not correlate with financial constraints in time $t+1$ ($b = -0.00$, SE = .01, $z = -0.32$, $p = .751$).

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 three 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.

Prediction Accuracy. To explore participants' prediction accuracy, we obtained inflation data for the UK corresponding to the 12-month period following each of the nine waves of the study (i.e., October 2023 to June 2024). Specifically, we compared participants' estimates to the 12-month Consumer Price Index (CPI), the most widely used index of inflation, which tracks the average change in prices paid by consumers (Office for National Statistics 2024). In our data, consumers overestimated inflation by 5.7 percentage points, on average, with errors ranging

from 4.5 to 6.6 percentage points across waves. To test whether financial constraints affected prediction errors, we first winsorized prediction errors within each wave at the 95th percentile to remove outliers. We then regressed participants' prediction errors on their perceived financial constraints in each wave. In all nine waves, financial constraints were positively associated with prediction errors ($bs = 0.37$ to 0.68 , all $ps < .01$). For each unit increase in financial constraints, participants overestimated inflation by an additional 0.37 to 0.68 percentage points.

Alternative Explanations and Additional Studies. We further assessed the robustness of the association between financial constraints and future price expectations in four additional 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 an open-ended question ($b = 2.42$, $SE = 0.65$, $t(291) = 3.74$, $p < .001$). In supplemental study 3 ($n = 300$), we controlled for optimism to examine whether the effect emerged simply because financially constrained consumers generally expect worse outcomes. 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 general financial knowledge (supplemental study 4, $n = 298$). Financial constraints were associated with higher price expectations even after we controlled for financial literacy (supplemental study 4; $n = 298$, $b = 0.46$, $SE = .24$, $t(295) = 1.90$, $p = .058$).

Discussion. Study 1B provided evidence of the nature of the association between financial constraints and future price expectations. Our results suggest that greater financial constraints precede higher price expectations, but higher price expectations do not precede greater feelings of financial constraints. Supplemental studies 2-4 demonstrated that this association is not driven by differences in optimism or financial literacy and that it holds when using a different method to elicit consumers' future price expectations. Moreover, by comparing

participants' forecasts with actual inflation, study 1B further showed that financially constrained consumers systematically overestimated price increases.

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 whether 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). 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 (expenditure category, 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 goods and services in the United States in January 2024 will...” (1 = decrease significantly, 7 = increase significantly). As pre-registered, this measure served as a covariate in the main analysis. Participants' scores on this covariate did not differ across

conditions ($p = .975$). 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 (adapted from 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 expenditures (e.g., groceries, gas), adapted from the Consumer Price Index. 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.

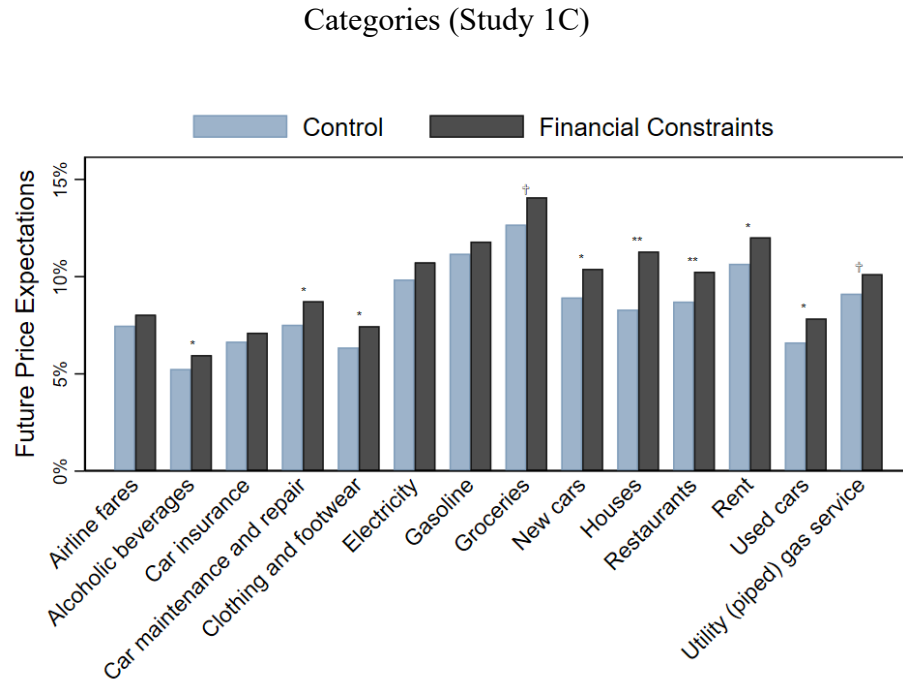
Results and Discussion

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. 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 ($\hat{y} = 8.5\%$, $b = 1.17$, $SE = .50$, $z = 2.36$, $p = .009$; see web appendix for the results within each category). These results do not change if we omit the covariate we collected from the

model ($b = 1.18$, $SE = .57$, $z = 2.09$, $p = .018$). Figure 1 illustrates this result.

Figure 1. Effect of Perceived Financial Constraints on Future Price Expectations in Various



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. *** $p < .001$, ** $p < .01$, * $p < .05$, † $p < .10$.

Prediction Accuracy. To explore the accuracy of participants’ forecasts, we obtained inflation data in the US 12 months after the study (i.e., January 2024) for each of the 14 expenditure categories used in the study. Specifically, we compared participants’ estimates to official inflation data in each of these categories taken from the Consumer Price Index (Bureau of Labor Statistics 2024). On average, participants’ prediction errors ranged from -12.7 to 28.4 across categories. To test whether financial constraints affected accuracy, we winsorized prediction errors within each category at the 95th percentile to remove outliers. We then

estimated a multilevel model with crossed random effects for participants and categories, with prediction errors as the dependent variable and a dummy variable for condition as the independent variable. Participants in the financial constraints condition overestimated future price changes across the categories to a greater extent than did those in the control condition ($b = 1.18$, $SE = .57$, $z = 2.09$, $p = .037$). Notably, this pattern replicated in 13 out of the 14 expenditure categories.

Discussion. Study 1C showed that experimentally inducing feelings of financial constraint led consumers to expect future prices to be higher. Moreover, greater feelings of financial constraint caused consumers to overestimate the extent to which prices would increase. 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: THE MEDIATING ROLE OF PAIN OF PAYING

Study 2 further probed whether financial constraints cause higher future price expectations (H1) and examined the role of pain of paying in mediating this effect (H2), building on study 1C in three ways. First, it used a scenario (instead of a writing task) to manipulate financial constraints, allowing us to assess the robustness of the effect across different operationalizations. Second, instead of using a neutral control condition, study 2 compared two conditions manipulating financial constraints to be high or low. Finally, in study 2 we did not

include a pre-treatment covariate, ruling out the possibility that the effect of the manipulation was influenced by participants' prior responses.

Methods

Sample and Design. We pre-registered this study using AsPredicted (#202080; <https://aspredicted.org/sd79-m772.pdf>). We planned to recruit 600 people, and 607 UK residents signed up to participate on Prolific. We excluded four participants who did not complete the survey and two who failed the same attention check used in studies 1A-1C, resulting in a sample of 601 participants (54.7% female, $M_{\text{age}} = 42.6$, $SD = 12.8$). This study adopted a two-cell between-subjects design (financial constraint: high vs. low).

Procedure. Participants provided demographic information and then read a scenario that served as the financial constraint manipulation. In the scenario, all participants imagined that they recently moved to a new country for work. Participants were told that living in this country has been either more expensive or less expensive than they anticipated. Specifically, participants in the 'high financial constraint' condition read that their expenses were taking up nearly all of their income, and that they have very little money left after paying for their recurring expenses. Participants in the 'low financial constraint' condition read that their expenses were well within their budget, and that they have plenty of money left after paying for their recurring expenses. Specifically, participants in the **high** [vs. **low**] financial constraint condition read the following:

Imagine that you recently moved to a new country for work. Settling into this new environment has been **more challenging** [vs. **easier**] than expected, especially because living in this country is **more** [vs. **less**] expensive than you anticipated. Rent, utilities, food, and other recurring costs are **taking up nearly all of your income** [vs. **well within your budget**], and **you've had to dip into your savings to cover** [vs. **you've been able to save money even after paying for**] unexpected expenses related to the move. After paying for these, **you have very little money left for anything else** [vs. **you still have plenty of money leftover**]. You feel very financially **constrained** [vs. **secure**].

After reading the scenario, we measured pain of paying with the following measure adapted from Choe and Kan (2021): “How painful do you think it would be for you to pay for purchases in this situation?” (1 = not painful at all, 7 = extremely painful). We then measured future price expectations. Specifically, participants reported the percentage by which they expected prices in this new country to change over the next 12 months using an open-ended text box. As a manipulation check, participants reported how financially constrained they felt in the scenario using four items adapted from the scale used in studies 1A-1B (sample item: “To what extent did you feel financially constrained in the situation described in the scenario?”, 1 = not at all, 7 = very much, $\alpha = .95$). Finally, participants completed the same attention check and the same measure of understanding of inflation used in studies 1A-1C.

Results and Discussion

Manipulation Check. Participants in the ‘high financial constraint’ condition reported greater financial constraints ($M = 5.96$, $SD = 0.73$) than did participants in the ‘low financial constraint’ condition ($M = 2.34$, $SD = 1.10$, $t(599) = -47.53$, $p < .001$, $d = -3.88$), indicating that the manipulation was successful.

Future Price Expectations. As pre-registered and consistent with studies 1A-1C, we winsorized participants’ future price expectations at the 95th percentile to remove outliers. As expected, participants in the ‘high financial constraint’ condition reported higher future price expectations ($M = 8.4\%$, $SD = 7.22$) than did those in the ‘low financial constraint’ condition ($M = 6.0\%$, $SD = 5.10$, $t(599) = -4.63$, $p < .001$, $d = -0.38$).

Pain of Paying. As expected, participants in the ‘high financial constraints’ condition reported greater pain of paying ($M = 5.48$, $SD = 1.06$) than participants in the ‘low financial

constraints' condition ($M = 1.44$, $SD = 0.89$, $t(599) = -50.65$, $p < .001$, $d = -4.13$). Furthermore, pain of paying was significantly correlated with future price expectations ($r(599) = .21$, $p < .001$).

Indirect Effect. We tested whether the effect of financial constraints on price expectations was mediated by pain of paying. To do so, we estimated the structural path *condition -> pain of paying -> future price expectations*, with the standard errors estimated with 1,000 bootstrapped samples. The results revealed a significant indirect effect ($axb = 2.29$, $SE = 1.15$, 95% CI: [.03 to 4.56]) and a non-significant direct effect ($c = 0.07$, $SE = 1.21$, 95% CI: [-2.29 to 2.44]), indicating that pain of paying fully mediated the effect.

Discussion. Study 2 further showed that financial constraints cause higher future price expectations and provided initial evidence for the role of pain of paying in mediating this effect. Supplemental study 5 ($n = 299$) in the web appendix conceptually replicated this finding and probed our rationale for why pain of paying leads to higher future price expectations (b-path). Consistent with our theorization, we found that pain of paying was positively associated with perceptions of how much current prices had increased ($r(297) = 0.16$, $p = .007$), and perceptions of current price increases fully mediated the link between pain of paying and future price expectations ($axb = 0.50$, $SE = 0.19$, 95% CI: [0.120 to 0.872]).¹ Studies 3A-3B further probed our proposed mechanism by directly manipulating the b-path of our model.

STUDY 3A: MANIPULATING THE DIAGNOSTICITY OF CURRENT PRICES

¹ While we theorized that pain of paying results in higher price expectations because it increases the perception of how much current prices have changed, we considered the possibility of a different causal chain—namely, that the perception of how much prices have changed results in greater pain of paying. Thus, in supplemental study 5 we also estimated the mediation model: *perceptions of how much current prices have changed -> pain of paying -> future price expectations*. However, this indirect effect was not significant ($axb = 0.01$, $SE = 0.01$, 95% CI: [-0.008 to 0.030]).

Study 3A further examined our proposed mechanism by adopting a process-by-moderation design. Specifically, we sought to attenuate the effect by weakening the b-path of our conceptual model. We theorized that pain of paying explains the effect of financial constraints on future price expectations because it causes consumers to perceive larger increases in current prices, which they then use to form their future price expectations. If this rationale is correct, the effect of financial constraints on future price expectations should be attenuated when consumers believe that their perceptions of current prices are a weak signal of future prices (H3a). Study 3A tested this proposition by directly manipulating consumers' beliefs about how diagnostic current prices are of future prices.

Methods

Sample and Design. We pre-registered this study using AsPredicted (#127572, 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.

Procedure. First, we randomly assigned participants to one of two conditions (treatment vs. control). In the treatment condition, participants read and summarized an article arguing that current prices are not diagnostic of future prices (see below).

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. 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 contributed to higher prices in the UK, but these issues may be resolved in the coming months. 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. 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. 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.

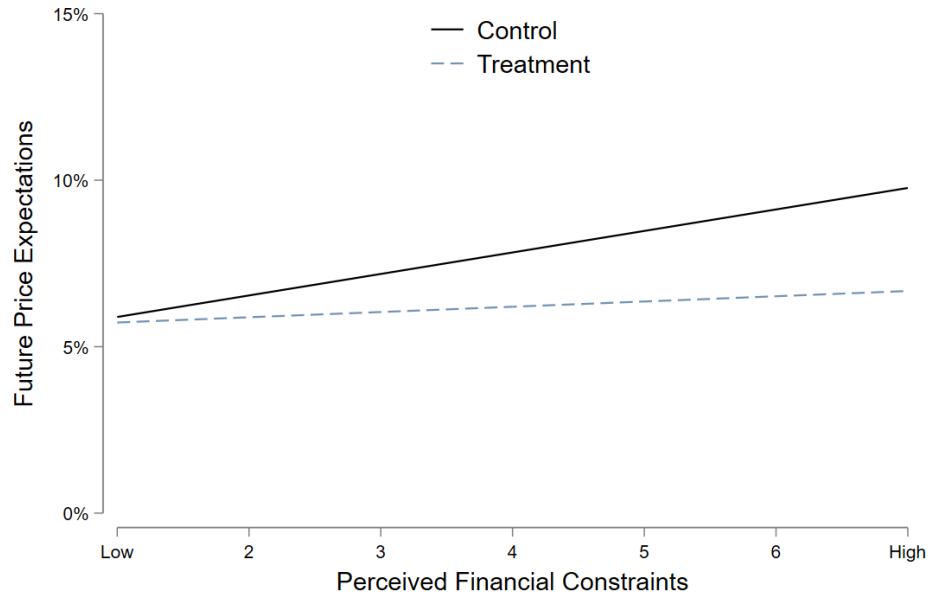
In the control condition, participants did not read any article. Next, all participants reported the percentage by which they expected prices in the overall economy to change in 12 months with the same measure used in study 1B. Finally, participants completed the same measure of perceived financial constraints used in studies 1A-1B ($\alpha = .88$), the same 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 financial constraints were associated with higher future price expectations ($b = 0.65, SE = .14, p < .001$), replicating our prior results. In the treatment condition—i.e., when consumers read that current prices are not diagnostic of future prices—financial constraints had no effect on future price expectations ($b = 0.16, SE = .15, p =$

.283). Figure 2 illustrates this interaction.

Figure 2. Effect of Perceived Financial Constraints on Future Price Expectations (Study 3A)



Note. This graph plots the association between perceived financial constraints and future price expectations when consumers read that current prices are not diagnostic of future prices (treatment condition) and when no manipulation was implemented (control condition).

Discussion. In sum, study 3A provided additional evidence consistent with our theorization. When consumers were led to believe that current prices are not diagnostic of future prices, financial constraints no longer affected consumers' price forecasts.

STUDY 3B: PROVIDING INFORMATION ABOUT CURRENT INFLATION

Study 3B provided additional evidence for the role of pain of paying as the underlying mechanism using a process-by-moderation approach, building on study 3A in two ways: by manipulating financial constraints and directly measuring pain of paying. Specifically, we

investigated another circumstance in which pain of paying may not result in higher future price expectations: when consumers receive information about current inflation. If pain of paying results in higher future price expectations because it increases how much consumers perceive current prices to have increased—which serves as a basis for their future price forecasts—then providing information about how much current prices have increased should attenuate the effect (H3b). Study 3B tested this prediction.

Methods

Sample and Design. We pre-registered this study using AsPredicted (#203014; <https://aspredicted.org/n7rv-mc7x.pdf>). We planned to recruit 2,400 people, and 2,426 US residents signed up to participate on Prolific. We excluded participants who did not finish the survey ($n = 28$) or failed an attention check ($n = 14$), resulting in a final sample of 2,384 participants (54.9% female, $M_{\text{age}} = 41.7$, $SD = 13.2$). Participants were randomly assigned to one cell of a 2 (financial constraint: high vs. low) $\times$ 2 (information about current inflation: present vs. absent) between-subjects design.

Procedure. Participants provided demographic information and were randomly assigned to one of two conditions that manipulated financial constraints. Specifically, all participants read the same scenario used in study 2, in which they imagined relocating to a new country for work and were told that their expenses were either taking up nearly all of their income ('high financial constraint' condition) or were well within their budget ('low financial constraint' condition). Next, about half of the participants were randomly assigned to receive information about current inflation. Specifically, they read that prices in their new country had gone up by 2% over the past 12 months. We chose 2% because it is close to the annualized inflation rate experienced globally

over the past 30 years (Ha, Kose, and Ohnsorge 2023). The remaining half did not receive any information about current inflation. All participants then completed the same measure of pain of paying used in study 2. Next, as a measure of future price expectations, they estimated the percentage by which they expected prices in this new country to change over the next 12 months using an open-ended text box. Finally, participants completed the same measure of financial constraints used in study 2, which served as a manipulation check.

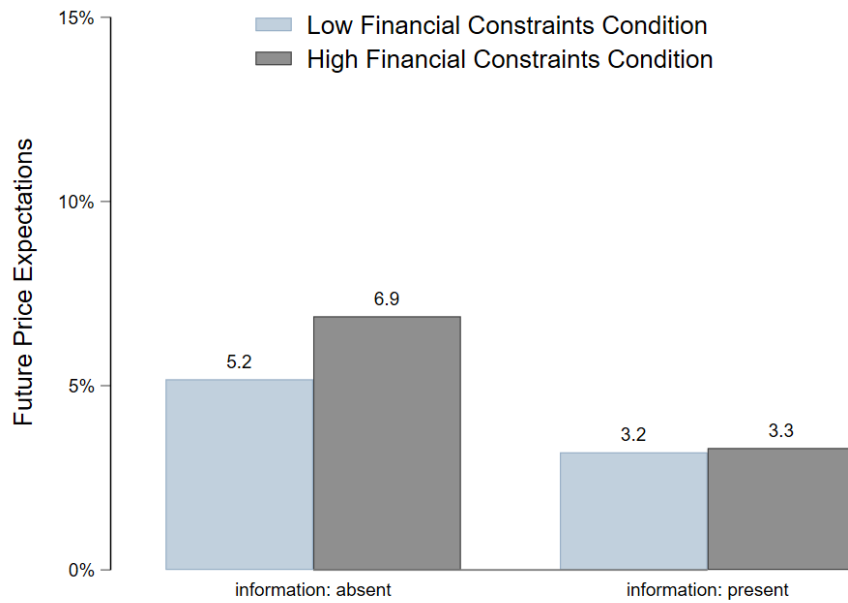
Results and Discussion

Manipulation Check. Participants in the ‘high financial constraint’ condition reported greater financial constraints ($M = 5.91$, $SD = 1.00$) than did participants in the ‘low financial constraint’ condition ($M = 2.53$, $SD = 1.22$, $t(2382) = -73.82$, $p < .001$, $d = -3.02$), indicating that the manipulation was successful.

Future Price Expectations. As pre-registered, we winsorized future price expectations at the 95th percentile to remove outliers. A two-way ANOVA with future price expectations as the dependent variable revealed a significant main effect of the financial constraint manipulation ($F(1, 2380) = 20.04$, $p < .001$, $\eta^2 = .007$). Replicating our prior results, consumers in the ‘high financial constraint’ condition had higher future price expectations ($M = 5.1\%$, $SD = 5.5$) than those in the ‘low financial constraint’ condition ($M = 4.2\%$, $SD = 4.9$). The results also revealed a significant main effect of the ‘information about current inflation’ manipulation ($F(1, 2380) = 185.83$, $p < .001$, $\eta^2 = .071$), such that consumers had higher future price expectations when information about current inflation was absent ($M = 6.0\%$, $SD = 6.0$) than present ($M = 3.2\%$, $SD = 3.7$). Critically, there was also a significant two-way interaction ($F(1, 2380) = 15.26$, $p < .001$, $\eta^2 = .006$). Specifically, the financial constraint manipulation had a significant effect on

consumers' price expectations when information about current inflation was absent ($b = 1.71, p < .001$), but no effect when it was present ($b = 0.12, p = .687$). Figure 3 displays these results.

Figure 3. Effect of Financial Constraints on Future Price Expectations When Information About Current Inflation is Absent vs. Present (Study 3B)



Note. This graph plots the effect of the financial constraint manipulation on consumers' future price expectations when information about current inflation was absent (left) or present (right).

Pain of Paying. A two-way ANOVA with pain of paying as the dependent variable revealed a significant main effect of condition ($F(1, 2380) = 4358.58, p < .001, \eta^2 = .65$), such that participants reported greater pain of paying in the high (vs. low) financial constraint condition ($M_{\text{high}} = 5.42, SD = 1.24; M_{\text{low}} = 1.96, SD = 1.30$). There was also a main effect of the 'information about current inflation' manipulation, such that pain of paying was higher when consumers received information about current inflation ($M = 3.79, SD = 2.00$) than when they did not receive any information ($M = 3.61, SD = 2.28$). Moreover, there was a significant two-way interaction ($F(1, 2380) = 64.29, p < .001, \eta^2 = .009$), such that the effect of financial

constraint manipulation was weaker when consumers received information about current inflation ($b = 3.04$, $SE = 0.73$, $p < .001$) than when they did not receive any information ($b = 3.87$, $SE = 0.73$, $p < .001$).

Pain of Paying and Future Price Expectations. Pain of paying was significantly associated with future price expectations ($r(2382) = .14$, $p < .001$). We further probed whether the effect of pain of paying on future price expectations depended on whether consumers received information about current inflation. To do so, we estimated a two-way ANOVA with future price expectations as the dependent variable and pain of paying (continuous, measured), information about current inflation (present vs. absent), and their interaction as independent variables. The results revealed a significant main effect of pain of paying ($F(1, 2380) = 56.72$, $p < .001$, $\eta^2 = .021$). Replicating the results of study 2, greater pain of paying was associated with future price expectations ($\hat{y}_{+1SD} = 5.4\%$, $SE = 0.14$; $\hat{y}_{-1SD} = 3.9\%$, $SE = 0.14$). Critically, there was also a significant two-way interaction ($F(1, 2380) = 9.78$, $p < .001$, $\eta^2 = .004$). While greater pain of paying was generally associated with higher future price expectations, this effect was less than half as strong when information about current inflation was present ($b = 0.21$, $SE = 0.07$, $p = .003$) compared to when it was absent ($b = 0.51$, $SE = 0.06$, $p < .001$).

Conditional Indirect Effect. We tested whether the effect of the financial constraint manipulation on future price expectations was mediated by pain of paying and, critically, whether this indirect effect depended on whether consumers received information about current inflation. To do so, we estimated the indirect path *financial constraint manipulation* $\rightarrow$ *pain of paying* $\rightarrow$ *future price expectations*, with the ‘information about current inflation’ manipulation moderating the b-path of the model.² We estimated the standard errors with 1,000 bootstrapped

² The results do not change if we allow the ‘information about current inflation’ manipulation to moderate

samples. The results showed that the indirect effect of the financial constraint manipulation on future price expectations through pain of paying was significant when information about current inflation was absent ($axb = 2.46$, $SE = 0.38$, 95% CI: [1.72, 3.21]), replicating the results of study 2. Importantly, this effect was about 40% weaker when consumers received information about current inflation ($axb = 1.45$, $SE = 0.37$, 95% CI: [0.73, 2.17]), and the difference between these two indirect effects was significant (difference = -1.01, $SE = 0.30$, 95% CI: [-1.61, -0.42]).

Discussion. Study 3B provided further evidence for the role of pain of paying as a mechanism that explains the relationship between financial constraints and future price expectations. Importantly, the results support our theorization for why pain of paying operates as a mediator of the effect. Specifically, the effect of financial constraints on future price expectations was attenuated when consumers received information about current inflation, as this information weakened the extent to which pain of paying led to higher future price expectations.

STUDY 4A: CATEGORY-LEVEL VARIATION IN PAIN OF PAYING

Thus far, we have shown that financial constraints increase future price expectations because financially constrained consumers experience greater pain of paying. We have suggested that this effect is amplified in circumstances in which paying for purchases is naturally more painful (H4). In study 4a, we leveraged category-to-category variation in pain of paying and tested whether financial constraints are more strongly associated with price expectations in purchase categories in which paying for purchases is more painful (H4a).

both paths of the model (indirect effect when information about current inflation was absent: $axb = 2.76$, $SE = 0.43$, 95% CI: [1.92, 3.59]; indirect effect when information about current inflation was present: $axb = 1.28$, $SE = 0.33$, $p < .001$, 95% CI: [0.64, 1.92]; difference between the two indirect effects: difference = -1.48, $SE = 0.32$, 95% CI: [-2.10, -0.86]).

Methods

Sample and Design. We pre-registered this study using AsPredicted (#192756; <https://aspredicted.org/j6hx-vm69.pdf>). We planned to recruit 800 people, and 802 signed up to participate on Cloud Research Connect. We excluded one participant who did not complete the study and 12 who failed an attention check, leaving a final sample of 789 participants (53.7% female, $M_{\text{age}} = 41.8$, $SD = 13.3$). This study adopted a 14 (expenditure category, within) x continuous (perceived financial constraints, measured at the participant level) x continuous (pain of paying, measured at the category level) mixed design.

Procedure. Participants reported their future price expectations for the same 14 expenditure categories used in study 1C. Specifically, they indicated the percentage by which they expected prices in each category to change over the next 12 months using an open-ended response format. Next, participants completed the same measure of perceived financial constraints used in studies 1A-1B and 3A ($\alpha = .93$), the same attention check used in studies 1A-1C, 2, and 3A-3B, and provided demographic information.

Category-level Pain of Paying. As indicated in our re-registration, we measured pain of paying in each category using a separate sample of participants drawn from the same population ($n = 100$, 45.4% female, $M_{\text{age}} = 39.4$, $SD = 11.0$). We used this separate sample of participants to create an index of pain of paying in each category. Specifically, participants in this sample saw the same 14 expenditure categories used in the main study and reported how painful it was to pay for purchases in each category (1 = not painful at all, 7 = extremely painful). We averaged the pain of paying ratings across all participants in each category, resulting in a category-level measure of pain of paying.

Results and Discussion

Analysis. We were interested in testing whether the effect of perceived financial constraints on future price expectations in each category depended on how painful it was to pay for purchases in the category. To do so, we estimated a multilevel model predicting participants' future price expectations in each category, with crossed random effects for participants and categories. As pre-registered, we winsorized future price expectations at the 95th percentile within each category to remove outliers. In the fixed part of the model, we entered perceived financial constraints (participant-level, mean-centered), the average pain of paying in each category (category-level, centered around the category mean), and their interaction.

Results. Replicating our prior results, there was a significant positive effect of perceived financial constraints ($b = 0.48$, $SE = .17$, $z = 2.82$, $p = .005$), indicating that the more financially constrained consumers felt, the higher they expected future prices to be. There was also a significant positive effect of category-level pain of paying ($b = 1.13$, $SE = .41$, $z = 2.75$, $p = .006$), indicating that future price expectations were higher in categories in which pain of paying was, on average, higher. Importantly, the results also revealed a significant interaction ($b = 0.09$, $SE = .04$, $z = 2.23$, $p = .026$). Specifically, the effect of perceived financial constraints on future price expectations was stronger in expenditure categories in which pain of paying was higher (e.g., housing, new vehicles; 1 SD above the mean: $b = 0.56$, $SE = .17$, $p = .001$) than in categories in which pain of paying was lower (e.g., alcoholic beverages, clothing and footwear; 1 SD below the mean: $b = 0.39$, $SE = .17$, $p = .023$).

Discussion. Study 4a demonstrated that differences in pain of paying across categories explained heterogeneity in the effect of financial constraints on future price expectations when

consumers forecasted future prices in these categories. While greater financial constraints were associated with higher price expectations, this effect was stronger (vs. weaker) when consumers forecasted prices in categories in which paying for purchases was more (vs. less) painful. These results provide further evidence for pain of paying as a driver of the effect.

STUDY 4B: GEOGRAPHICAL VARIATION IN PAIN OF PAYING

Study 4B accomplished two main goals. First, we probed the generalizability of our findings by examining whether the effect of financial constraints on price expectations holds among consumers residing in various countries. Second, building on recent work showing that pain of paying varies systematically across geographical regions (Rick 2024), we tested whether cross-country differences in the magnitude of the effect could be explained by geographical variation in pain of paying. To be precise, we leveraged differences in pain of paying across countries and tested our prediction that financial constraints have a stronger effect on future price expectations in countries where paying for purchases is generally more painful (H4b).

Methods

Sample and Design. We pre-registered this study using AsPredicted (#196309; <https://aspredicted.org/46by-w9pw.pdf>). We planned to recruit 200 participants in each of 12 countries (Australia, Canada, France, Germany, Italy, Mexico, the Netherlands, Poland, Portugal, Spain, the United Kingdom, and the United States), resulting in a target sample size of 2,400 participants. A total of 2,407 people signed up to participate on Prolific. After applying our pre-registered exclusion criteria, 2,357 participants were left in the final sample (193-201

participants per country, 46.1% women, $M_{\text{age}} = 34.3$, $SD = 10.6$). This study adopted a 12 (countries, between) x continuous (perceived financial constraints, measured at the participant level) x continuous (pain of paying, measured at the country level) mixed design.

Procedure. We first measured future price expectations with the same item used in studies 1B, 2 and 3A-3B. Specifically, participants indicated the percentage by which they expected prices in their country to change over the next 12 months using an open-ended text box. Next, we measured perceived financial constraints with the same items used in studies 1A-1B, 3A, and 4A, and collected demographic information (age, gender, income).

Country-level Pain of Paying. As indicated in our pre-registration, we were interested in measuring pain of paying at the country level. To do so, we recruited a separate sample of participants residing in the same 12 countries from which we sampled participants for the main study ($n = 347$, 49.9% female, $M_{\text{age}} = 34.8$, $SD = 11.6$). Participants in this separate sample indicated how painful it was to pay for purchases in their country (“In your opinion, how painful is it to pay for purchases in your country in the current environment?”, 1 = not painful at all, 7 = extremely painful). We averaged the ratings from all participants within each country to create a country-level index of pain of paying.

Results and Discussion

Analysis. We were interested in estimating the effect of perceived financial constraints on future price expectations and, importantly, examining whether cross-country differences in the magnitude of the effect depended on how painful it was for consumers in each country to pay for purchases. To do so, we estimated a multilevel model predicting future price expectations, with participants nested within countries. In the fixed part of the model, we entered perceived

financial constraints (participant-level, mean-centered), pain of paying in each country (country-level, mean-centered), and their interaction.

Results. Replicating our prior results, there was a positive significant effect of perceived financial constraints ($b = 0.63$, $SE = .11$, $p < .001$), such that consumers who felt more financially constrained had higher future price expectations ($\hat{y}_{+1SD} = 7.1\%$) than consumers who felt less financially constrained ($\hat{y}_{-1SD} = 5.5\%$). There was also a significant effect of country-level pain of paying, such that future price expectations were higher in countries in which it was more painful to pay for purchases ($\hat{y}_{+1SD} = 7.2\%$, $\hat{y}_{-1SD} = 5.4\%$, $b = 2.92$, $SE = 1.46$, $p = .045$). Critically, the results also revealed a marginally significant interaction ($b = .68$, $SE = .35$, $p = .052$), such that the effect of perceived financial constraints on future price expectations was twice as strong among consumers residing in countries in which pain of paying was higher (1 SD above the mean; $b = 0.84$, $p < .001$) than among consumers residing in countries in which pain of paying was lower (1 SD below the mean; $b = .42$, $p = .005$).

Discussion. Study 4B demonstrated that financial constraints were associated with higher price expectations in a sample of consumers drawn from 12 countries and that heterogeneity in the strength of the effect was explained by cross-country differences in pain of paying. Specifically, the positive association between financial constraints and price expectations was stronger among consumers residing in countries where paying for purchases was more (vs. less) painful. Overall, these findings demonstrate the robustness of the effect and further support the role of pain of paying as an underlying mechanism.

STUDY 4C: TEMPORAL VARIATION IN PAIN OF PAYING

In study 4C, we investigated the generalizability of the association between financial constraints and price expectations across various points in history. Moreover, we examined whether our theory could predict heterogeneity in the magnitude of the effect over time. We have proposed that financial constraints cause higher future price expectations due to pain of paying (H2), and that the effect is amplified in circumstances in which paying for purchases is naturally more painful (H4). Study 4C leveraged a unique dataset spanning four decades to test whether the association between financial constraints and price expectations is stronger during historical periods when paying for purchases is especially painful (H4C).

Methods

We compiled a unique dataset by merging two datasets.

Dataset 1. First, we used data from the University of Michigan’s Survey of Consumers, a nationally representative survey of US consumers. 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 (“By what percentage do you expect prices to go up/down, on average, during the next 12 months?”), open-ended, as well as measures assessing respondents’ perceptions of their financial situation. 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). The data contain responses from 277,401 consumers (49.97% female, $M_{\text{age}} = 47.01$, $SD = 17.27$) provided every year from 1978 through 2022.

Dataset 2. We merged the data from the University of Michigan’s Survey of Consumers with survey data we collected. We were interested in testing whether the effect of financial

constraints on price expectations was stronger in years in which paying for purchases was more painful. To do so, we asked a sample of US residents (#219506, <https://aspredicted.org/pqcp-fnmv.pdf>; $n = 100$, 48.0% women, $M_{\text{age}} = 41.1$, $SD = 14.4$) to estimate how painful it was for consumers to pay for purchases in each year from 1978 to 2022. Each participant evaluated 10 randomly selected years from this period. They were shown key macroeconomic indicators for each year (e.g., inflation, unemployment) without being told which year the data referred to, and were asked: “Based on this information, how painful do you think it was for consumers to pay for purchases in that year?” (1 = not painful at all, 7 = extremely painful). We averaged the responses across all participants for each year to create a year-level measure of pain of paying.

Results and Discussion

Analysis. To test whether the effect of financial constraints on price expectations was stronger in years in which paying for purchases was more painful, we leveraged the longitudinal nature of the dataset and estimated a multilevel model with future price expectations nested within year. In the fixed part of the model, we entered perceived financial constraints (participant-level), the average pain of paying in each year (year-level), and their interaction.

Results. Replicating our prior results, there was a significant effect of financial constraints ($b = 0.38$, $SE = 0.01$, $z = 37.32$, $p < .001$), such that consumers who felt more financially constrained expected future prices to increase more ($\hat{y}_{+ISD} = 4.3\%$) than did consumers who felt less financially constrained ($\hat{y}_{-ISD} = 3.7\%$). There was also a significant effect of year-level pain of paying, such that future price expectations were higher in years in which paying for purchases was more painful ($\hat{y}_{+ISD} = 5.1\%$, $\hat{y}_{-ISD} = 2.8\%$, $b = 1.14$, $SE = 0.17$, $z = 6.61$, $p < .001$). Critically, there was also a significant interaction ($b = 0.03$, $SE = 0.01$, $z =$

2.47, $p = .013$). Specifically, the association between financial constraints and price expectations was about 14% stronger in years in which paying for purchases was more painful (1 SD above the mean, $b = 0.40$, $SE = 0.01$, $p < .001$) than in years in which paying for purchases was less painful (1 SD below the mean, $b = 0.35$, $SE = 0.01$, $p < .001$).

Discussion. Using a longitudinal dataset spanning four decades, study 4C showed that financial constraints were systematically associated with higher future price expectations and, critically, that this effect was stronger in years in which paying for purchases was more painful.

STUDY 5: HIGHER PRICE EXPECTATIONS PREDICT STOCKPILING

In study 5, we explored a behavioral consequence of higher price expectations: stockpiling, which refers to the tendency to purchase more units of a product than one immediately needs. Specifically, we tested whether higher price expectations would cause financially constrained consumers to stockpile.

Methods

Sample and Design. We pre-registered this study using AsPredicted (#218492; <https://aspredicted.org/jxq6-kmf2.pdf>). We planned to recruit 1,000 participants, and 1,019 people signed up to participate on Prolific. We excluded 19 participants who did not complete the survey and 19 who failed an attention check, leaving a final sample of 981 participants (57.5% female, $M_{age} = 41.4$, $SD = 13.3$). This study adopted a two-cell between-subjects design (financial constraint: high vs. low).

Procedure. Participants provided demographic information and then read the same

scenario used in studies 2 and 3B, which served as the financial constraints manipulation. All participants imagined that they recently moved to a new country for work. In the high (vs. low) financial constraint condition, they read that their expenses were taking up nearly all of their income (vs. were well within their budget), and that they had little (vs. plenty of) money left after paying for their recurring expenses. After reading the scenario, we measured participants' future price expectations with the same item used in studies 2 and 3B. Specifically, participants reported the percentage by which they expected prices in this new country to change over the next 12 months using an open-ended text box. Next, we measured stockpiling behavior. Specifically, participants reported how likely they would be to stockpile products in five different categories (non-perishable food items, household essentials, personal care products, medications and health-related items, and frozen or preserved foods). They indicated their responses for each category using a 7-point scale ranging from 1 = extremely unlikely to 7 = extremely likely. Finally, participants completed the same 4-item manipulation check ($\alpha = .93$) used in studies 2 and 3B, and the same measure of understanding of inflation and attention check used in all of our prior studies.

Results and Discussion

Manipulation Check. Participants in the 'high financial constraint' condition reported greater financial constraints ($M = 5.63$, $SD = 1.12$) than did those in the 'low financial constraint' condition ($M = 2.36$, $SD = 1.01$, $t(979) = -47.96$, $p < .001$, $d = -3.06$), indicating that the manipulation was successful.

Future Price Expectations. Consistent with our prior results, future price expectations were higher among participants in the 'high financial constraint' condition ($M = 9.3\%$, $SD =$

11.0) than among participants in the ‘low financial constraint’ condition ($M = 7.5\%$, $SD = 10.5$, $t(979) = -2.59$, $p = .005$, $d = -0.17$).

Stockpiling. To examine the effect of financial constraints on stockpiling, we estimated a multilevel model with crossed random effects for participants and categories, with stockpiling in each category as the dependent variable. In the fixed part of the model, we entered a dummy indicator for condition (1 = high financial constraint, 0 = low financial constraint). The results revealed a positive effect of condition, such that participants in the ‘high financial constraint’ condition indicated a greater likelihood of stockpiling ($\hat{y} = 4.71$) than did participants in the ‘low financial constraint’ condition ($\hat{y} = 4.27$, $b = 0.44$, $SE = .10$, $z = 4.42$, $p < .001$).

Indirect Effect. We tested whether the effect of financial constraints on stockpiling was mediated by future price expectations. To do so, we averaged stockpiling likelihood across all five categories ($\alpha = .90$) and estimated the path *condition* $\rightarrow$ *price expectations* $\rightarrow$ *stockpiling*, with the standard errors estimated with 1,000 bootstrapped samples. The results revealed a significant indirect effect ($axb = 0.07$, $SE = 0.02$, 95% CI: [.02 to 0.12]) and a significant direct effect ($c = 0.37$, $SE = 0.09$, 95% CI: [0.19 to 0.55]), suggesting that future price expectations partially mediated the effect of financial constraints on stockpiling. We report the results for each category separately in the web appendix.

Discussion. In sum, study 5 showed that financially constrained consumers were more likely to engage in stockpiling—that is, to purchase more units of a product than immediately needed. This effect was partially driven by higher price expectations: financial constraints led consumers to anticipate steeper price increases, which in turn prompted stockpiling across a wide range of product categories. These findings highlight a behavioral consequence of higher price expectations and suggest that these expectations influence consumption decisions.

STUDY 6: HIGHER FUTURE PRICE EXPECTATIONS PREDICT PREFERENCE FOR FIXED-PRICE CONTRACTS

Study 6 probed whether financial constraints could lead consumers to make costlier choices to avoid future price increases. Specifically, we tested whether financially constrained consumers—who expect higher future prices—preferred fixed-price (vs. variable-price) contracts for recurring expenses, even when doing so required committing to a higher initial price.

Methods

Sample and Design. We pre-registered this study using AsPredicted (#219731; <https://aspredicted.org/yxf5-zn8n.pdf>). We planned to recruit 1,000 participants, and 1,062 people signed up to participate on Cloud Research Connect. We excluded 57 participants who did not complete the survey and 11 who failed an attention check, leaving a final sample of 994 participants (46.8% female, $M_{age} = 42.5$, $SD = 12.4$). This study adopted a two-cell between-subjects design (financial constraint: high vs. low).

Procedure. Participants provided demographic information and then completed the same financial constraint manipulation used in studies 2, 3B, and 5. All participants imagined relocating to a new country for work. In the high (vs. low) financial constraint condition, they learned that their recurring expenses left them with very little (vs. plenty of) money remaining at the end of each month. Participants then reported their expectations for how much prices in the new country would change over the next 12 months using an open-ended text box.

Next, participants completed a decision task designed to measure preferences for

variable- versus fixed-price contracts. They read five scenarios, each involving a different recurring expense (e.g., housing). In each scenario, participants were presented with two pricing structures for that expense: one with a slightly lower price that could fluctuate over time (e.g., leasing an apartment for \$1,400/month, with the rate adjusted every 6 months), and another with a slightly higher price that would remain fixed for a longer period (e.g., leasing the same apartment for \$1,500/month, with the rate locked in for 24 months). In each scenario, participants indicated their preference between the two options on a 7-point scale (1 = strongly prefer the variable-price option, 7 = strongly prefer the fixed-price option). Finally, participants completed the same manipulation check ($\alpha = .94$) used in studies 2, 3B, and 5, as well as the same measure of understanding of inflation and attention check used in all prior studies.

Results and Discussion

Manipulation Check. Participants in the ‘high financial constraint’ condition reported greater financial constraints ($M = 5.65$, $SD = 1.18$) than did those in the ‘low financial constraint’ condition ($M = 2.55$, $SD = 1.12$, $t(992) = -42.55$, $p < .001$, $d = -2.70$), indicating that the manipulation was successful.

Future Price Expectations. Replicating our prior results, future price expectations were higher among participants in the ‘high financial constraint’ condition ($M = 6.0\%$, $SD = 5.1$) than among participants in the ‘low financial constraint’ condition ($M = 4.4\%$, $SD = 4.7$, $t(992) = -4.83$, $p < .001$, $d = -0.31$).

Preference for Fixed-Price Contracts. We estimated a multilevel model with crossed random effects for participants and scenarios, with preference for the variable-price versus the fixed-price contract in each scenario as the dependent variable. For ease of interpretation, we

coded participants' responses such that higher scores represented stronger preferences for fixed-price contracts. In the fixed part of the model, we entered a dummy indicator for condition (1 = high financial constraint, 0 = low financial constraint). The results revealed a significant effect of condition ($b = 0.23$, $SE = .10$, $z = 2.42$, $p = .015$), such that participants in the 'high financial constraint' condition had stronger preferences for fixed-price contracts ($\hat{y}_{+1SD} = 5.51$) than did those in the 'low financial constraint' condition ($\hat{y}_{+1SD} = 5.29$).

Indirect Effect. Finally, we tested whether future price expectations mediated the effect of financial constraints on preference for fixed-price contracts. To do so, we averaged preference for fixed-price contracts across all five scenarios ($\alpha = .89$) and estimated the path *condition -> price expectations -> preference for fixed-price contracts*, with the standard errors estimated with 1,000 bootstrapped samples. The results revealed a significant indirect effect ($axb = 0.07$, $SE = 0.02$, 95% CI: [.03 to 0.10]) and a non-significant direct effect ($c = 0.17$, $SE = 0.09$, 95% CI: [-0.01 to 0.34]), suggesting that future price expectations fully mediated the effect of financial constraints on preference for fixed-price contracts.

Discussion. Study 6 demonstrated another consequence of higher price expectations: a preference for fixed-price contracts. Our results showed that, due to higher price expectations, financially constrained consumers were willing to pay a higher price for recurring expenses in exchange for price stability. Importantly, choosing fixed-price contracts may reflect a suboptimal financial decision when driven by miscalibrated expectations. Indeed, as studies 1A-1C demonstrated, financially constrained consumers were less accurate in their price forecasts, systematically overestimating how much prices would increase. Thus, by locking in higher prices based on distorted expectations, they may be incurring unnecessary financial burdens, potentially reinforcing a cycle of financial vulnerability.

GENERAL DISCUSSION

The current research examined how consumers form future price expectations. We believe this investigation is timely, as inflation—which remains one of the main concerns for consumers worldwide (Ipsos 2024)—is partly a self-fulfilling prophecy driven by consumers’ expectations. Since these expectations influence consumer choice (Gunadi and Evangelidis 2022), firms’ decisions (Coibion, Gorodnichenko, and Ropele 2020), and monetary policy (Bernanke 2007), understanding them is crucial for both firms and policymakers. In the current work, we demonstrate the role of perceived financial constraints as a key factor explaining why consumers disagree on 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 emerges—at least in part—because financially constrained consumers experience greater pain when paying for purchases. Third, consistent with this mechanism, the effect is attenuated when pain of paying does not translate to higher price expectations—e.g., when consumers receive information about how much current prices have increased—and is amplified in circumstances in which paying for purchases is naturally more painful. Finally, we demonstrate that price expectations are consequential, predicting stockpiling and a preference for fixed-price contracts among financially constrained consumers.

Theoretical Contributions

The current manuscript offers two main theoretical contributions. First, we advance the

literature on future price expectations. Relevant to the current research, several studies have reported an association between consumers' income levels and their future price expectations, with lower-income consumers typically expecting higher future prices (Bryan and Venkatu 2001; Ranyard et al. 2008; Pfajfar and Santoro 2008; Leung 2009; Armantier et al. 2013; Meyler and Reiche 2021). However, the evidence has been mixed. Some studies suggest that the correlation between income and future price expectations disappears after other factors are controlled for (e.g., financial literacy; Bruine De Bruin et al. 2010), and some have found no association (Bruine De Bruin et al. 2017). Other studies have reported a significant association in the opposite direction, with higher-income consumers expecting higher future prices (Jonung 1981; Kershoff and Smit 2002; Hjalmarsson and Österholm 2020). Other work has suggested that future price expectations are associated with changes in income, rather than income levels (Tsiaplias 2021).

We believe that these mixed findings are explained by three features of existing work: reliance on cross-sectional associations (which limits the ability to draw causal inferences), focusing on income (which paints an incomplete picture of consumers' financial standing), and, perhaps most critically, focusing on modeling price expectations rather than understanding the psychological mechanism underlying how they are formed. The current manuscript advances this body of work by demonstrating the causal role of perceived financial constraints and, importantly, providing a parsimonious account of how pain of paying drives this effect. As a result, the current manuscript helps explain heterogeneity in the effect and delineates conditions under which the effect is stronger—for example, in categories (study 4A), countries (study 4B), or historical periods (study 4C) in which paying for purchases is more painful. In doing so, the current research answers previous calls for more work providing a psychologically grounded

account of why consumers hold different future price expectations (Ranyard et al. 2008; Armantier et al. 2013).

Our findings also 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 journey, from preference formation (Tully, Hershfield, and Meyvis 2015) and choice (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 affect consumers beyond the purchase funnel. By doing so, our findings raise the possibility that the influence of perceived financial constraints on consumers is more pervasive than previously thought. In addition, while previous research has primarily examined the influence of financial constraints on decisions and judgments pertaining to the self (Tully, Hershfield, and Meyvis 2015; Dias, Sharma, and Fitzsimons 2022) or others (Sharma et al. 2014), the current work extends the effect of financial constraints to outcomes pertaining to the broader environment in which consumers operate.

Implications for Policymakers

The current research also 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 based on objective factors alone. These circumstances may be more common than one may presume given that feelings of financial constraint may 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 economy (Bernanke 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 financial constraints on future price expectations: by changing consumers' beliefs about the extent to which current prices shape future prices (study 3A) and by providing information about how much current prices have changed (study 3B). When consumers were told that current prices were not indicative of future prices (study 3A) or received information about current inflation (study 3B), financial constraints were no longer associated with higher future price expectations. Thus, strategic communications from policymakers may help curb inflation expectations during periods when consumers feel more financially constrained.

Future Research Directions

The current work offers multiple directions for future research. First, it is possible that other mechanisms explain the relationship between financial constraints and price expectations. Indeed, in our some of our data, pain of paying only partially mediated the effect (e.g., study 3B). We believe that exploring additional mechanisms through which financial constraints increase future price expectations is a fruitful avenue for future research, as it may 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 stockpiling behavior and a preference for fixed-price contracts, it is possible that these expectations shape other aspects of consumption. For example, expecting higher future prices may encourage financially constrained consumers to switch to cheaper brands if these brands are

seen as providing better value.

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' 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 financial constraints and consumers' 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 these expectations and provides insights for consumers, marketers, and policymakers. For consumers, being aware of how financial constraints affect their future price expectations can help them make better-informed consumption decisions. Marketers, on the other hand, can use an enhanced understanding of consumers' future price expectations to optimize 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 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.

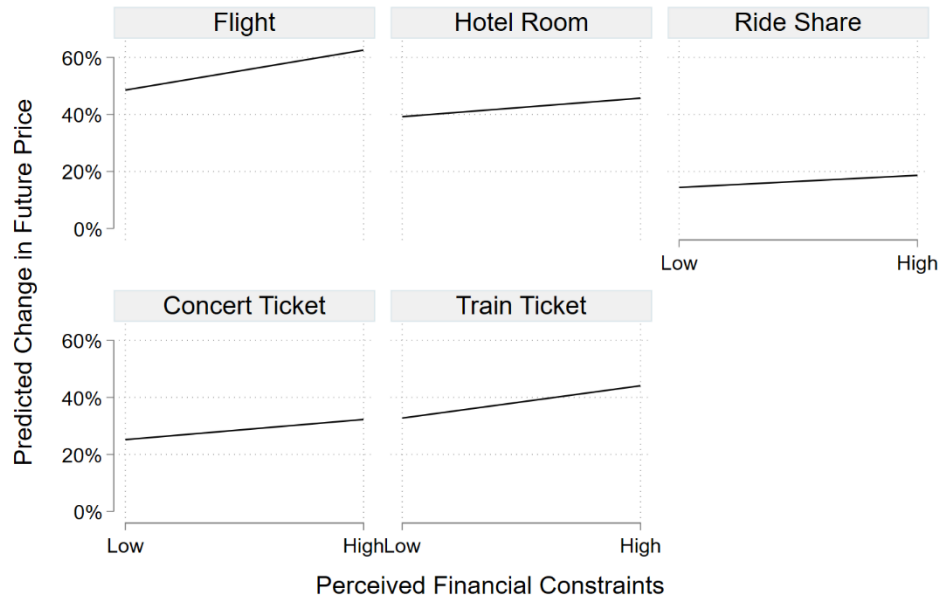
Procedure. Participants were asked to imagine that they were planning a trip and that, as part of their preparations, they were researching several purchases related to this trip. Participants saw five purchases, each presented on a separate screen. They saw the current price of each purchase, and they 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 95th 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: $100 * [(\text{estimate of future price} / \text{current price of the product}) - 1]$.

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, $M_{\text{age}} = 38.9$, $SD = 13.0$). 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 effects 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: Controlling for General Financial Knowledge

Supplemental study 4 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 consumers 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 their perceived financial constraints with the same measure 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) increase, (2) decrease, (3) stay 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.

Supplemental Study 5: Link Between Pain of Paying and Future Price Expectations

In supplemental study 5, we probed our theorization for why pain of paying leads to higher future price expectations—that is, the b-path of our theoretical model. We proposed that pain of paying results in higher price expectations because pain of paying increases the perceptions of how much current prices have increased. Supplemental study 5 assessed this proposition.

Methods

Sample and Design. We planned to recruit 300 US residents on Cloud Research Connect, and 309 people signed up to participate in the study. We excluded 9 participants who did not finish the survey and one who failed an attention check, leaving a sample of 299 people (41.5% female, $M_{\text{age}} = 40.1$, $SD = 10.8$). This study adopted a correlational design.

Procedure. First, participants reported their age, gender and income. Next, they completed the following measure of pain of paying: “How painful is it for you to pay for purchases right now?” (1 = not painful at all, 7 = extremely painful; adapted from Choe and Kan 2021). Next, we measure participants’ perceptions of current inflation. Specifically, participants were asked to estimate the percentage by which they thought prices had changed over the past 12 months. Participants then indicated their future price expectations with the same measure used in studies 1B and 4B in the main manuscript—that is, they indicated the percentage by which they expected prices in their country to change over the next 12 months. Participants provided their responses to the perceived and expected inflation measures using an open-ended text box.

Finally, participants reported their perceived financial constraints with the same 4-item measure used in studies 1A, 1B, 3A, and 4A-4C in the main manuscript ($\alpha = .92$).

Results and Discussion

Financial Constraints and Price Expectations. Replicating the results reported in the manuscript, perceived financial constraints were significantly associated with future price expectations ($b = 0.64$, $SE = .33$, $t(297) = 1.95$, $p = .053$), such that participants who felt more financially constrained expected higher future prices ($\hat{y}_{+1SD} = 8.3\%$) than did participants who felt less financially constrained ($\hat{y}_{-1SD} = 6.4\%$).

Pain of Paying and Price Expectations. Moreover, pain of paying significantly predicted with future price expectations ($b = 0.75$, $SE = .27$, $t(297) = 2.74$, $p = .006$), such that experiencing greater pain of paying was associated with higher price expectations ($\hat{y}_{+1SD} = 8.6\%$, $\hat{y}_{-1SD} = 6.0\%$).

We were primarily interested in probing the link between pain of paying and future price expectations (that is, the b-path in our main theoretical model). In the main manuscript, we theorized that pain of paying results in higher future price expectations because it may increase the perception of how much current prices have increased. Put differently, consumers who experience greater pain of paying will perceive current prices to have increased more, which in turn will result in higher price expectations. To test this proposition, we estimated the structural path *pain of paying -> perceptions of how much current prices have changed -> future price expectations*. Consistent with our theoretical rationale, we found that perceptions of how much current prices have changed fully mediated the association between pain of paying and future

price expectations (indirect effect: $axb = 0.50$, $SE = 0.19$, 95% CI: [0.120 to 0.872]; direct effect: $axb = 0.25$, $SE = 0.20$, 95% CI: [-0.134 to 0.644]).

We considered the possibility of a different causal chain: that the perception of how much current prices have changed results in greater pain of paying. To examine this possibility, we estimated the structural path *perceptions of how much current prices have changed* $\rightarrow$ *pain of paying* $\rightarrow$ *future price expectations*. However, the indirect effect was not significant ($axb = 0.01$, $SE = 0.01$, 95% CI: [-0.008 to 0.030]).

Together, these results support our theorization for why pain of paying results in higher price expectations: pain of paying causes consumers to perceive greater changes in current prices, thus leading to higher future price expectations.

Additional Analyses 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 Analyses 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	χ^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 _t -> Price Expectations _{t+1}					
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 _t -> Financial Constraints _{t+1}					
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 Analyses 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 Analyses for Study 5

In this section, we report additional results for study 5 in the main manuscript. Table 6 reports the effect of financial constraint condition and price expectations on the likelihood of stockpiling in each of the five categories we used in study 5. Table 7 reports the results of mediation models examining the effect of financial constraints on stockpiling through price expectations in each of the five categories used in study 5.

Table 6. Effect of Financial Constraint Condition and Price Expectations on Stockpiling in Each Product Category (Study 5)

	Coefficient	t	SE	p-value	95% CI
Condition -> Preference for Fixed-Price					
Non-Perishable Food Items	0.54	0.12	4.65	< .001	0.310 to 0.762
Household Essentials	0.39	0.12	3.39	.001	0.166 to 0.620
Personal Care Products	0.33	0.12	2.83	.005	0.102 to 0.565
Medications and Health-Related Items	0.26	0.12	2.16	.031	0.023 to 0.491
Frozen or Preserved Foods	0.66	0.12	5.58	< .001	0.427 to 0.890
Price Expectations -> Preference for Fixed-Price					
Non-Perishable Food Items	0.03	0.01	6.20	< .001	0.023 to 0.043
Household Essentials	0.04	0.01	7.83	< .001	0.030 to 0.051
Personal Care Products	0.04	0.01	7.41	< .001	0.029 to 0.050
Medications and Health-Related Items	0.04	0.01	7.79	< .001	0.031 to 0.053
Frozen or Preserved Foods	0.04	0.01	7.51	< .001	0.030 to 0.051

Note. This table reports the effect of financial constraint condition (upper half) and price expectations (bottom half) on stockpiling in each product category used in study 5. Each row displays the results of a linear regression with the likelihood of stockpiling as the dependent variable and condition (upper half) or price expectations (bottom half) as the independent variable.

Table 7. Indirect Effect of Financial Constraints on Stockpiling through Future Price

Expectations in Each Product Category (Study 5)

	Coefficient	SE	p-value	95% CI
Non-perishable food items				
Direct Effect	0.48	0.11	< .001	0.262 to 0.698
Indirect Effect	0.06	0.02	.011	0.012 to 0.097
Household Essentials				
Direct Effect	0.32	0.11	.004	0.104 to 0.540
Indirect Effect	0.07	0.03	.008	0.018 to 0.123
Personal Care Products				
Direct Effect	0.26	0.12	.022	0.038 to 0.491
Indirect Effect	0.07	0.03	.008	0.018 to 0.120
Medications and Health-Related Items				
Direct Effect	0.18	0.11	0.108	-0.040 to 0.408
Indirect Effect	0.07	0.03	0.006	0.021 to 0.126
Frozen or Preserved Foods				
Direct Effect	0.59	0.11	< .001	0.369 to 0.812
Indirect Effect	0.07	0.03	.007	0.019 to 0.118

Note. This table reports the results of mediation models examining the effect of financial constraints on stockpiling intentions through future price expectations in each category used in study 5. We ran a separate mediation model for each category.

Additional Analyses for Study 6

In this section, we report additional analyses for study 6 in the main manuscript. Table 8 reports the effect of condition (financial constraint: low vs. high) and price expectations on preference for fixed-price contracts in each of the five scenarios we used in study 6. Table 9 reports the results of mediation models examining the indirect effect *condition (financial constraint: low vs. high) -> future price expectations -> preference for fixed-price contracts* in each of the five scenarios we used in study 6.

Table 8. Effect of Financial Constraint Condition and Price Expectations on Preference for
Fixed-Price Contracts (Study 6)

	Coefficient	t	SE	p-value	95% CI
Condition -> Preference for Fixed-Price					
Mobile Plan	0.24	0.12	2.06	.039	0.012 to 0.476
Rental Agreement	0.05	0.12	0.44	.657	-0.182 to 0.288
Electricity	0.30	0.11	2.71	.007	0.082 to 0.513
Internet	0.31	0.11	2.79	.005	0.093 to 0.532
Water Service	0.25	0.08	2.12	.034	0.018 to 0.478
Price Expectations -> Preference for Fixed-Price					
Mobile Plan	0.06	0.01	4.86	< .001	0.034 to 0.080
Rental Agreement	0.05	0.01	3.92	< .001	0.023 to 0.070
Electricity	0.04	0.01	3.33	0.001	0.015 to 0.058
Internet	0.04	0.01	3.77	< .001	0.020 to 0.064
Water Service	0.05	0.01	3.98	< .001	0.023 to 0.069

Note. This table reports the effect of financial constraint condition (upper half) and price expectations (bottom half) on preference for fixed-price contracts in each of the five scenarios used in study 6. Each row displays the results of a linear regression with preference for fixed-price contracts as the dependent variable and condition (upper half) or price expectations (bottom half) as the independent variable.

Table 9. Indirect Effect of Financial Constraints on Preference for Fixed-Price Deals through
Future Price Expectations in Each Scenario (Study 6)

	Coefficient	SE	p-value	95% CI
Mobile Plan				
Direct Effect	0.16	0.11	.160	-0.064 to 0.386
Indirect Effect	0.08	0.02	.001	0.035 to 0.131
Rental Agreement				
Direct Effect	-0.02	0.12	.883	-0.252 to 0.217
Indirect Effect	0.07	0.02	.002	0.025 to 0.117
Electricity				
Direct Effect	0.25	0.11	.022	0.036 to 0.460
Indirect Effect	0.05	0.02	.016	0.009 to 0.090
Internet				
Direct Effect	0.25	0.11	.017	0.046 to 0.462
Indirect Effect	0.06	0.02	.005	0.017 to 0.099
Water Service				
Direct Effect	0.18	0.11	.112	-0.043 to 0.407
Indirect Effect	0.07	0.02	.004	0.021 to 0.111

Note. This table reports the results of mediation models examining the effect of perceived financial constraints on preference for fixed-price deals through future price expectations in each scenario used in study 6. We ran a separate mediation model for each scenario.

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