Perceived Deflation Risk

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Abstract

Since the recent high-inflation period, consumer expectations of future inflation rates exhibit a pronounced deflation tail after a *negative* shift in their skewness. Using this unprecedented setting as a laboratory, we find that consumers do not associate expected deflation with an expected worsening of general economic conditions. Individuals with high perceived deflation risk expect higher individual job security, lower unemployment, and no significant decline in incomes. At the same time, they expect lower stock prices, declining home prices, and lower individual household spending. Our results suggest that consumers' subjective model of deflation does not line up with leading economic theories.

Keywords: inflation, deflation, consumer expectations, subjective model, behavioral biases
JEL codes: D12, D84, E31, G51

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1 Introduction

Inflation expectations are closely followed by policy-makers, practitioners, and academic scholars. The expectations of consumers, in particular, can not only be valuable for improving forecasts of actual inflation (Ang, Bekaert and Wei, 2007), but are themselves an important driver of the economy through their influence on consumption-saving decisions (Weber et al., 2022). Gaining a detailed understanding of consumer's inflation expectations as well as their heterogeneity and potential biases is therefore of critical interest.

While the literature focuses on the role of inflation expectations mainly in connection with high-inflation scenarios, the case of high perceived *deflation* risk is much less understood. One of the reasons is that generally, the risk of deflation is perceived to be very low due to the strong commitment of policy-makers to avoid such a scenario. Interestingly, this changed during the recent high-inflation period: Besides a large part of the U.S. population expecting continued high inflation, a significant fraction also started to expect *deflation* over the horizon of the next three years.[1] For example, in August 2022, with a prevailing CPI inflation rate of 8.5%, consumers assigned on average a more than 29% probability to the scenario of a deflation over the next three years (see also Figure 1, top left panel). The increased perceived probability of future deflation is reflected by a pronounced negative change in the skewness of consumers' inflation expectations, suggesting that this pattern is not just a result of high inflation uncertainty (second-moment effects).

In this paper, we utilize this unique and novel setting — which contrasts with the previous observation of a "zero lower bound" on inflation expectations (Gorodnichenko and Sergeyev, 2021) — to analyze, on the one hand, what factors contribute to the high per-

[1] Armantier et al. (2023) also document this pattern and show that it is challenging to explain it within a standard learning model of inflation expectations.

ceived probability of deflation, and on the other hand, how perceived deflation risk interacts with individuals' general expectations about the economy. In other words, our goal is to characterize consumers' subjective economic model of a deflation scenario.

We start off our analysis by investigating whether the high probabilities assigned to a deflation scenario in the post-2021 period are specific to consumer expectations, or if economic analysts and investors perceive a similarly high deflation risk as well. To this end, we first compare the consumer expectations to those of professional forecasters, and second, to market-implied deflation probabilities extracted from inflation options. We find that the probability assigned to a deflation scenario is much lower for both the professional forecasters' and the option-implied probabilities compared to consumer expectations. For example, professional forecasters assign a probability of around 13.7% to a deflation over the next two years in August 2022, and market investors expect deflation over the next three years with less than 3%. In comparison, the probability assigned to a moderate inflation (between zero and four percent) is much greater at more than 85% for both professional forecasters' and market-based expectations, while consumers perceive a deflation and a moderate inflation as almost equally likely (at 29.13% and 30.78%).

Building on this unique setting, we ask what potential factors explain the increased deflation expectations. We first analyze whether the high perceived deflation risk is particularly prevalent within specific demographic groups based on age, education, numeracy, and income of the surveyed individuals. Our main finding across all demographic attributes is that while different demographic groups assign different *baseline* probabilities to a deflation scenario, the dramatic increase in perceived deflation risk after 2021 is not driven by an amplification of these baseline differences and rather observed across all demographic groups. For instance, we find that young individuals and individuals with lower income, numeracy,

or levels of education generally perceive a higher deflation probability compared to the rest of the population throughout our sample. However, as the perceived deflation risk considerably increases in the average population after 2021, the increase is more pronounced for older individuals and individuals with higher numeracy or income.

We next investigate whether factors related to the respondents' employment or financial situation are associated with the increase in perceived deflation risk. Similar to our results on demographic groups, we find that there are factors driving a generally higher *baseline* probability that individuals assign to deflation. Precisely, our results indicate that individuals who are unemployed, respondents whose financial situation has considerably worsened over the past year, and consumers who anticipate difficulties obtaining a loan tend to assign a higher probability to future deflation. However, none of these factors contributes disproportionately to the general increase of perceived deflation risk in the average population after 2021.

We proceed to analyze whether consumers' perceived deflation risk correlates with their expected changes in the prices of goods and services. For all considered items (gas, food, rent, medicine, and college cost), individuals' reported deflation probability is strongly positively related to reporting an expected price decline, and this relation is strongly amplified for the post-2021 period of high perceived deflation risk. The results of this analysis show that individuals' reported deflation probabilities are backed by their expectations of goods and services price declines, addressing concerns that consumers may not fully understand the meaning of "deflation" or confuse "deflation" and "disinflation".[2]

[2]We furthermore show the robustness of our results in Section 5 when removing responses from our sample in which the respondent states that they expect deflation but report a positive point estimate or assign a zero probability to deflation when asked about future scenarios.

The subsequent part of our analysis asks in detail what expectations consumers who perceive a high probability of a future deflation have about the general economy. We address this question by utilizing the rich set of subjective expectations elicited in the Survey of Consumer Expectations from the same pool of individuals that is surveyed on inflation expectations. Our goal is to understand consumers' subjective model of the economy with respect to a deflation scenario, following the spirit of Andre et al. (2022).

We first examine whether individuals' perceived deflation risk is associated with a worsening of general expectations of the economy. While a deflation scenario could be either the cause or the result of a recession, this would either way suggest that individuals who expect a deflation with high probability also expect worse economic outcomes on average. We find that this is not the case. Our results reveal that consumers with high perceived deflation risk assign a lower probability to an increase in the unemployment rate than the general population, and they assign a lower probability to losing their individual job particularly in the recent period after 2021. We also find no evidence of individuals with high perceived deflation risk expecting a decline of their individual earnings or of their household income over the next year. These results document that consumers do not strongly associate a deflation scenario with an economic recession, and rather expect favorable labor market outcomes.

We proceed to analyze the relation between perceived deflation risk and the anticipated actions of individuals. In particular, we evaluate to what extent consumers' reported view on whether they expect their household spending to increase or decrease in the next year is related to their subjective deflation probabilities. We find that individuals with high perceived deflation probabilities generally expect their household spending to increase less compared to the general population. The effect is significant for our overall sample and slightly amplified for the recent increase in perceived deflation probabilities after 2021. In

addition, we also find that consumers with high perceived deflation risk are less likely to expect making a large purchase in the short-term future. Altogether, these results suggest that consumers who consider a deflation scenario to be more likely expect to spend less in both nominal and real terms in the near future.

We finally ask how consumers' perceived deflation probabilities relate to their expectations of stock price and house price changes. We find that individuals expecting a deflation scenario with higher probability expect a lower probability of increasing stock prices compared to the rest of the population. For home prices, we observe a similar and even much more pronounced effect: Individuals' perceived deflation risk is strongly negatively related to their expected home price changes at the one- and three-year horizons, and this effect is strongly amplified during the post-2021 period. Quantitatively, a 10% higher perceived deflation probability is in this latter period associated with a reduction in the expected home price change by 0.43% and 0.69% over one and three years, respectively. Therefore, while individuals perceiving high deflation probabilities do not associate such scenario with a recession, as shown before, they do anticipate falling asset prices, one of the main ingredients for the debt-deflation theory of recessions.

When interpreting these results to characterize consumers' subjective economic model of deflation, we can directly conclude that consumers' views are not in line with the classical deflation spiral and debt deflation theories, as both of them associate a deflation scenario with a recession and higher unemployment. The surveyed individuals in our sample, however, connect a deflation scenario with lower unemployment and higher individual job security. Consumers' subjective model thus contrasts with the classical theories of "bad deflation" and appears to be more consistent with the notion of "good deflation", a deflation accompanied by healthy economic growth (see Bordo, Landon-Lane and Redish 2009 and Borio et al. 2015).

Consumers may also view deflation as a reversal of profit-led inflation or "greedflation" (Bilbiie and Känzig, 2024).

At the same time, our results also suggest that individuals may not fully incorporate the potential negative equilibrium effects of deflation when forming their expectations. In particular, we find that consumers perceiving a high deflation risk anticipate lower spending compared to other households, which is a critical ingredient for the standard theory of deflation spirals. Similarly, our results also show that individuals assigning a high probability to future deflation anticipate declining home prices, which are at the center of the debt deflation mechanism. Our findings can be interpreted as evidence of individuals seeing deflation from a partial equilibrium perspective, without anticipating or incorporating its general equilibrium consequences.

Related literature Our paper contributes to several strands of literature. First, a fast-growing literature aims to understand the formation of consumers' inflation expectations. Consumer expectations are particularly heterogeneous, subject to biases, and influenced by personal experiences (Malmendier and Nagel, 2016). Individuals often recall recent price changes to frequently purchased goods (such as food and gas) in order to forecast aggregate inflation (Cavallo, Cruces and Perez-Truglia 2017, D'Acunto et al. 2021). Another source of the heterogeneity in expectations is consumers' (in)attention, which can result from the cost of acquiring a precise inflation forecast relative to the benefits of using it (Cornand and Hubert, 2022). This literature does not put a strong focus on deflation expectations, partly because the probability of such scenario tends to be low in most historical datasets; however, Romer and Romer (2013) argue that expectations of deflation resulting from monetary contraction are central to explaining the Great Depression. In this paper, we contribute to

a better understanding of deflation expectations by utilizing the recent substantial increase of perceived deflation risk, which allows us to analyze the underlying factors behind deflation expectations as well as consumers' general economic expectations related to a deflation scenario.

Second, there is a long-standing literature on the relation between deflation and general macroeconomic outcomes. The classical theories of deflation spirals and debt deflation (Fisher, 1933) establish a strong link between deflation and economic recession, which plays an important role in understanding the Great Depression. Such strong and unambiguous link between deflation and recession in general is challenged by some authors (e.g., Atkeson and Kehoe, 2004; Cole and Ohanian, 2004). Bordo, Landon-Lane and Redish (2009) and Borio et al. (2015) argue that deflation only has negative effects on economic growth and employment when it is caused by a negative demand shock, as opposed to a positive supply shock, which may lead to "good deflation". Our paper acknowledges the existence of different economic theories and beliefs regarding deflation and asks the question what economic outcomes consumers expect in connection with a deflation scenario. We find that that consumers' subjective economic model (see also Andre et al., 2022) related to deflation is not in line with the classical theories of "bad deflation", but rather consistent with an improvement of supply conditions or with alternative theories, such as a reversal of profit-led inflation.

Third, we add to the literature on individuals' inflation expectations and their (intended) actions. Burke and Ozdagli (2023) highlight that the link between inflation expectations and consumer spending varies across demographic groups. Coibion et al. (2023) show that a change in individuals' inflation expectations causally affects their durable spending. Interestingly, consumers increase durable spending in response to reduced inflation expectations, at odds with standard theory, but likely driven by a more positive view of general economic

outcomes when inflation is reduced. This result demonstrates the importance of understanding consumers' subjective economic model related to inflation or, in our case, deflation. Our analysis highlights that individuals who assign a higher probability to a future deflation scenario anticipate lower future household spending compared to the rest of the population as well as a lower likelihood of making large purchases, in line both with a decreased price level and with postponed spending.

2 Perceived Deflation Risk in Consumer Expectations

We investigate consumers' deflation expectations based on data from the Survey of Consumer Expectations (SCE), conducted by the Federal Reserve Bank of New York. The SCE is a monthly survey where a rotating panel of approximately 1,300 households submits their expectations on various economic outcomes, including inflation. It was launched in 2013, and our dataset runs from the date of the launch until April 2024. The survey collects three pieces of information on inflation expectations from each respondent: (i) whether the respondent expects that there will be inflation or deflation, (ii) a point estimate of the expected inflation rate, and (iii) the probability that the respondent assigns to different inflation bins.[3] The individuals are asked for their expectations for the next 12 months (1-year horizon) as well as for the time period between 24 and 36 months in the future (3-year horizon). In addition, the survey collects consumers' expectations on the economic outlook as well as information on their personal financial and economic situation. Supplemental Appendix Table A.1 provides an overview of the different survey questions which are considered in the analysis of this

[3] In particular, respondents are asked to assign probabilities to the scenario of inflation or deflation (defined as negative inflation) being 12% or higher, between 8 and 12%, between 4 and 8%, between 2 and 4%, or between 0 and 2%.

paper. We utilize these data to document the rise in perceived deflation risk in the post-2021 period and to understand its drivers as well as consumers' subjective economic model related to deflation.

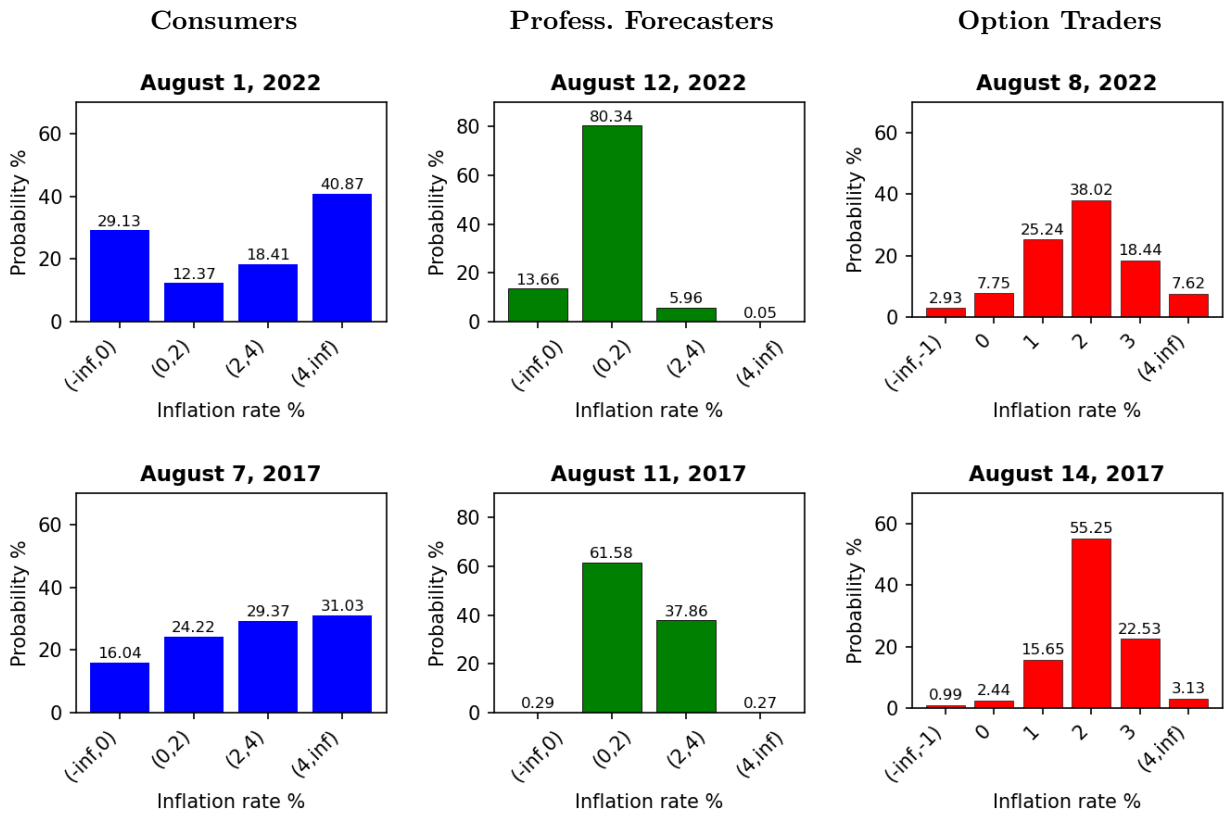
2.1 The Deflation Tail in Consumer Expectations

We start our analysis by examining part (iii) of the collected information on consumer inflation expectations, the reported probability distribution of different inflation scenarios. Throughout the paper, we focus on medium-term expectations at the 3-year horizon. In Figure 1, we plot the cross-sectional averages of the individually reported inflation distributions for two exemplarity dates in 2022 and 2017 in the left column.[4] We reduce the aggregate probability distribution to four bins: $(-\infty, 0)$, $(0, 2)$, $(2, 4)$, and $(4, \infty)$ percent, corresponding to deflation, mild inflation below and above the inflation target, and high inflation.

The figure shows at the example of August 2017 that before the unprecedented rise in perceived deflation risk, the reported distributions are typically concentrated on high-inflation scenarios and on scenarios around the target inflation rate of two percent. The assigned probability of deflation in 2017 was about 16%, much smaller than that of mild to moderate inflation between zero and four percent (more than 53%). Supplemental Appendix Figure C.1 confirms that this observation holds similarly for later years until the end of 2021. After that, a substantial shift is observable, as illustrated by the consumer inflation expectations in August 2022. Here, a probability of more than 29% is assigned to a deflation scenario,

[4] We remove observations from our dataset for which the individual's reported inflation distribution does not sum up to 100%, which is the case for only a small number of observations. If an individual has missed to report a value for some of the inflation bins, these values are set to zero as long as the overall reported density sums up to 100%.

Figure 1: Perceived Probabilities of Deflation and Inflation



This figure shows individuals' perceived probability of different future deflation or inflation outcomes for consumers, professional forecasters, and option traders, in August 2022 compared to August 2017. For consumers and professional forecasters, we average the probabilities that survey respondents assign to different inflation scenarios at a given date across all respondents and aggregate them to the given bins. Consumers' probabilities are from the Survey of Consumer Expectations reported for a three-year horizon, and professional forecasters' probabilities are from the Survey of Professional Forecasters and for a two-year horizon, which is the longest available. For option traders, we compute risk-neutral probabilities from inflation options with expiry in three years.

almost as much as to inflation between zero and four percent, resulting in a distribution where respondents see high risks of both a high-inflation and a deflation scenario. We show in Section 2.4 that the dramatic increase in perceived deflation probabilities is reflected by a

substantial negative shift in the distribution's skewness, and thus not attributable to a mere rise in inflation uncertainty.

Separately plotting all reported inflation bins (instead of aggregating to four main bins) in Supplemental Appendix Figure C.2 reveals a pronounced "deflation tail" after 2021. This pattern is very remarkable, as it is unique in the history of the SCE that respondents assign such high probabilities to a deflation scenario, and, in addition, this happens during a time when the prevailing inflation rate is clearly above the two percent inflation target. Before using this setting as a laboratory to understand the drivers and economic expectations related to perceived deflation risk, we compare the consumer expectations to densities elicited in the Survey of Professional Forecasters and to market-based densities implied by prices of inflation options.

2.2 Comparison to Professional Inflation Forecasts

We obtain professional inflation forecasts from the Survey of Professional Forecasters, conducted by the Federal Reserve Bank of Philadelphia. Similar to the SCE, respondents are asked to assign probabilities to a number of bins for the future inflation rate. Important differences to the SCE are, besides the fact that the respondents are professional forecasters, that the considered horizons are 1 year and 2 years ahead, and the forecasted inflation rate is *core* CPI inflation (based on the CPI less food and energy).

We plot the distribution for professional forecasters in a manner identical to the consumer expectations by aggregating the data to four main bins, and show the plots for the same survey months in the middle column of Figure 1 for 2-year expectations. It is eye-catching that the largest part of the mass (more than 85%) falls on the inflation interval between zero

and four percent both in 2017 and in 2022. This observation also holds for other dates, as Supplemental Appendix Figure C.3 shows. The deflation probability reported by professional forecasters is elevated in 2022 compared to the previous years, but it is considerably lower than that reported by the consumers. Plotting all reported bins in detail in Supplemental Appendix Figure C.4 further confirms the stark difference between the consumer expectations and the professional forecasts.

There are at least two possible explanations for these differences. First, it is possible that the high deflation risk perceived by consumers is attributable to expected declines in food and energy prices, which are not considered in the Survey of Professional Forecasters. However, we show in Section 3.3 that consumers' perceived deflation probabilities are also related to expected price declines in rents, medical costs, and costs of education. Second, it is possible that the differences are explained by different information available to consumers versus professional forecasters and by potential biases in their expectation formation. Before investigating consumers' subjective economic model associated with deflation in detail, we compare the consumers' inflation densities to market-implied probabilities extracted from prices of inflation options as an additional benchmark.

2.3 Comparison to Option-Implied Inflation Probabilities

We employ data on zero-coupon inflation caps and floors to extract market-implied probabilities of different inflation scenarios (see also Kitsul and Wright, 2013).[5] Quotes on inflation options are obtained from Bloomberg, and are available for a number of different maturities

[5]There is a growing number of papers analyzing inflation and deflation probabilities based on information from inflation derivatives, including Fleckenstein, Longstaff and Lustig (2017), Mertens and Williams (2021), and Hilscher, Raviv and Reis (2025).

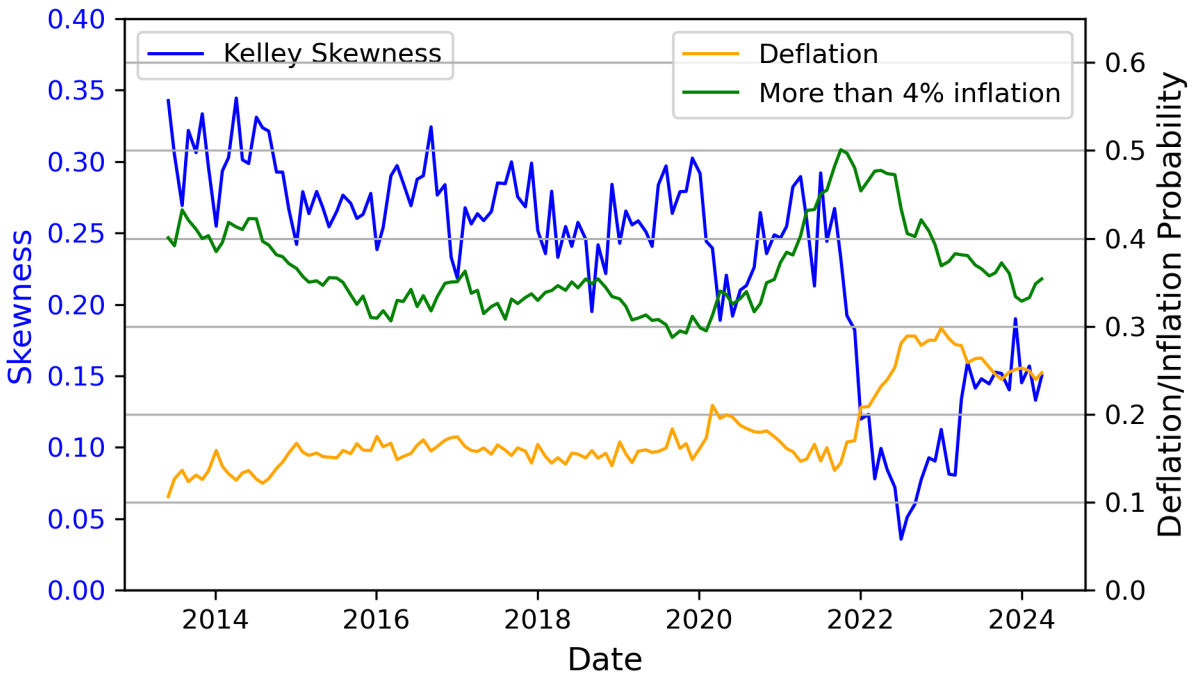
and strike prices. The market for inflation caps and floors has grown significantly over the past decade and offers insights on the market's assessment of future inflation outcomes.

We extract option-implied inflation probabilities using the Breeden and Litzenberger (1978) method, which allows to approximate the inflation probability distribution for a given horizon by assuming only integer support. Note that the probabilities implied by option prices are under the risk-neutral measure, which typically assigns greater probabilities to the tails of the distribution compared to the real measure due to positive risk premia. Accordingly, the option-implied probabilities for tail scenarios can be interpreted as an upper bound of the real probabilities that investors assign to these scenarios. That said, the right column of Figure 1 shows very clearly that the risk-neutral inflation densities at a 3-year horizon have a much smaller deflation tail than the survey-based consumer expectations. Particularly in 2022, when the consumers' perceived deflation risk is above 29%, the option-implied probability of a below-zero inflation is less than 3%. Supplemental Appendix Figure C.5 confirms for additional dates that the market-implied distributions generally assign very small probabilities to a deflation scenario.

2.4 Skewness of Consumer Inflation Probabilities

The previous sections emphasize the substantial increase in consumers' perceived deflation risk after 2021, contrasting with their expectations in prior years and with professional forecasters' and investors' expectations. We illustrate the dynamics of perceived deflation risk over time by plotting the average probability that consumers assign to a deflation scenario in Figure 2, together with the perceived probability of high inflation (above four percent) and the skewness of the inflation expectations distribution.

Figure 2: Consumers' Perceived Inflation Probabilities: Skewness, Deflation, and High Inflation



This figure plots the skewness of consumers' perceived probability distribution of future inflation outcomes together with the perceived probabilities of deflation and high inflation. Each month, we average the probabilities assigned to different inflation scenarios for a three-year horizon across all respondents of the Survey of Consumer Expectations, and report the Kelley skewness as well as the probabilities of deflation (negative inflation) and high inflation (greater than four percent inflation) of the aggregated distributions.

The figure confirms the remarkable shift in deflation expectations, which can be dated very clearly to the end of the year 2021. The perceived deflation probability increases substantially after 2021, while being mostly flat before. In contrast, the probability of high inflation starts rising one year earlier (in the beginning of 2021) and, in fact, declines again in the post-2021 period. The different dynamics of deflation and high-inflation probabilities suggest that the increase in perceived deflation risk is not merely a result of increased inflation uncertainty (i.e., second-moment effects), but rather results from a shift in expectations

specifically for a deflation scenario. To explore this point further, we plot the skewness of consumers' perceived inflation distribution over time.[6] Figure 2 shows that the inflation distribution's skewness exhibits a substantial negative shift at the end of 2021, indicating that the rise in perceived deflation risk is not just driven by inflation uncertainty.

This shift in perceived deflation risk and the inflation distribution's skewness is unique since the launch of the Survey of Consumer Expectations, as the figure reveals. We utilize this unique setting — a scenario of high perceived deflation risk in times of moderate to high inflation — as a laboratory to analyze the drivers of deflation expectations and consumer's economic model of a deflation scenario.

3 Determinants of Perceived Deflation Risk

We investigate the determinants and drivers of consumers' perceived deflation risk. In particular, we first ask whether perceived deflation risk is related to individuals' demographic characteristics such as age, education, numeracy, or income, both in general as well as for the recent period of high perceived deflation probabilities. Second, we extend the analysis to factors describing consumers' individual economic and financial situation. Third, we examine whether individuals' perceived deflation probabilities are consistent with their expectation of price changes for individual goods and services such as gas, food, and rent.

[6] In particular, we compute the Kelley skewness as a non-parametric measure, defined as $\frac{(P90-P50)-(P50-P10)}{(P90-P10)}$, where P90 is the 90 percent quantile of the average reported inflation distribution, P50 is the median, and P10 is the 10 percent quantile. Intuitively, the Kelley skewness measures what fraction of the dispersion is attributable to the left (deflation) tail of the distribution compared to the right (high-inflation) tail.

We consider, for each individual consumer at each monthly survey date, two variables measuring the consumer's perceived deflation risk at the 3-year horizon throughout this paper. The first variable is the reported *deflation probability*, which is the sum of probabilities that the individual assigns to the different deflation bins at a given survey date.[7] The second variable is the *deflation indicator*, standing for a consumer's binary answer to the question whether they expect future inflation (value 0) or deflation (value 1). By considering the deflation indicator as an alternative measure, we ensure that our results are not driven by potential biases in individual's reported probability distributions (see Boctor et al., 2024; Comerford, 2024).

3.1 Demographic Characteristics

We investigate if deflation expectations and their substantial increase can be attributed to particular demographic characteristics, namely age, education, numeracy, or income. Supplemental Appendix Figure C.7 illustrates the percentage of individuals in each demographic group expecting a deflation scenario over a 3-year horizon. The plots suggest, first, that the baseline level of perceived deflation risk differs across demographic groups. For example, respondents with higher education and respondents over 60 years of age assign a lower probability to a deflation scenario compared to lower-education respondents and those who are younger than 60 years. Second, the figures indicate that the substantial rise in perceived deflation risk after 2021 is driven by all demographic groups across the board.

We formally analyze the relation of perceived deflation risk to demographic characteristics by means of panel regressions, regressing the individuals' reported probability of deflation

[7] The deflation bins in the Survey of Consumer Expectations are those standing for an inflation of $(-\infty,-12)$, $(-12,-8)$, $(-8,-4)$, $(-4,-2)$, and $(-2,0)$ percent. See also Supplemental Appendix Figure C.2.

Table 1: Demographic Attributes and Deflation Expectations

This table reports the results from regressions of consumers' three-year deflation expectations on indicator variables for their demographic attributes with respect to age, education, numeracy, and income. The lowest value for each attribute is omitted: "under 40", "high school", "low numeracy", and "under 50k", respectively. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the demographic attribute indicators. Columns (1)–(4) present results from panel regressions in which the dependent variable is the perceived deflation probability, aggregated from all bins that represent less-than-zero inflation. Columns (5)–(8) present results from panel logit regressions in which the dependent variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Defl. Prob.	(2) Defl. Prob.	(3) Defl. Prob.	(4) Defl. Prob.	(5) Defl. Ind.	(6) Defl. Ind.	(7) Defl. Ind.	(8) Defl. Ind.
Post 2021	0.0783***	0.0848***	0.0833***	0.0926***	1.047***	0.887***	0.937***	0.992***
	(0.007)	(0.013)	(0.009)	(0.008)	(0.063)	(0.088)	(0.063)	(0.060)
Age								
40 to 60	-0.0201***				-0.0764*			
	(0.004)				(0.043)			
Over 60	-0.0486***				-0.377***			
	(0.004)				(0.048)			
40 to 60 × Post 2021	0.0296***				0.214***			
	(0.010)				(0.075)			
Over 60 × Post 2021	0.0367***				0.298***			
	(0.011)				(0.084)			
Education								
College		-0.0827***				-0.645***		
		(0.006)				(0.055)		
Some College		-0.0426***				-0.225***		
		(0.006)				(0.054)		
College × Post 2021		0.0192				0.485***		
		(0.013)				(0.095)		
Some College × Post 2021		0.0231				0.286***		
		(0.015)				(0.102)		
Numeracy								
High			-0.0869***				-0.770***	
			(0.004)				(0.037)	
High × Post 2021			0.0239**				0.453***	
			(0.009)				(0.065)	
Income								
50k to 100k				-0.0351***				-0.220***
				(0.004)				(0.042)
Over 100k				-0.0619***				-0.546***
				(0.004)				(0.053)
50k to 100k × Post 2021				0.0181				0.312***
				(0.011)				(0.078)
Over 100k × Post 2021				0.0210**				0.502***
				(0.010)				(0.084)
Constant	0.178***	0.214***	0.217***	0.185***	-2.011***	-1.746***	-1.648***	-1.934***
	(0.003)	(0.006)	(0.004)	(0.003)	(0.036)	(0.048)	(0.031)	(0.032)
Observations	165124	164685	165147	163647	167219	166783	167246	165709

on the different demographic attributes age, education, numeracy, and income. In these and in all main regressions throughout the paper, we analyze the baseline effect for our whole sample as well as the incremental effect in the post-2021 period, in which high deflation probabilities and the pronounced deflation tail are present.

The results reported in columns (1)–(4) of Table 1 confirm, indeed, that the baseline deflation probabilities perceived by different demographic groups are significantly different from each other. For example, respondents with some college education generally exhibit a 4.26% lower deflation probability than respondents with only high school education (the baseline group). The rise in perceived deflation risk after 2021 is, however, driven by all demographic groups. For instance, respondents with only high school education assign a 8.48% higher probability to a deflation scenario after 2021 compared to before, and the increase is significant at the 1% level. For individuals with college education, the increase since 2022 is not significantly different in magnitude and, if anything, slightly stronger. With respect to the other demographic attributes, our results show that the rise in perceived deflation risk is observed for all age groups, but significantly stronger for respondents above 40 years compared to those younger than 40 years; it is observed for low-numerary individuals, but significantly stronger for high-numeracy respondents; and it is present for individuals with low incomes, but stronger for respondents with very high incomes. These findings are confirmed across the board when using the deflation indicator as the dependent variable and performing panel logit regressions in columns (5)–(8).

The results speak to the possibility that the upward-shift in perceived deflation risk after 2021 is driven by an amplification of biases in consumers' expectation formation. Generally, individuals with lower education and income, for example, have stronger biases when forming their expectations, as established in the literature (e.g., Souleles, 2004). These groups are also

the ones that have higher baseline deflation expectations before the year 2022. However, our results show that the increase in perceived deflation risk after 2021 is at least as pronounced for the other demographic groups as for these groups, and in some cases significantly stronger. We therefore do not find any indication that the increased deflation expectations after 2021 are predominantly driven by demographic characteristics that are typically associated with biased expectations.

3.2 Individual Economic and Financial Situation

We next investigate whether factors related to the consumers' individual economic and financial situation can explain the recent rise in perceived deflation risk. We particularly consider the respondents' employment status as well as their recent credit and financial situation. We employ the same panel regression setup as in the previous section and report the results in the supplemental appendix.

The results on the relation of employment status to perceived deflation risk reported in Supplemental Appendix Table B.1 support the view that people who are employed, especially full-time, assign a lower probability to a deflation scenario in our full sample. On the contrary, individuals who have been laid off, are on leave, or are unable to work perceive higher deflation probabilities. While these effects can be observed over our whole sample, they are not amplified for the time period of increased perceived deflation risk after 2021. In fact, most coefficients capturing the incremental effect during this specific time period are either insignificant or in the opposite direction of the baseline effect, indicating that respondents' employment status is not strongly related to the recent rise of perceived deflation risk.

Supplemental Appendix Table B.2 relates respondents' perceived deflation risk to their recent finance situation. Interestingly, the results reveal that individuals who evaluate their recent financial situation to be in the extremes — both on the negative (baseline effect) and on the positive side ("much better") — assign a greater probability to deflation over the full sample. People who report that their financial situation is "somewhat worse", "about the same", or "somewhat better", but not extreme, generally assign lower probabilities to a deflation scenario. Similar to our results on demographic characteristics and employment status, these baseline effects are not significantly amplified in the post-2021 period, and in fact, the post-2021 increase is rather driven by those groups with a moderate financial situation. The results are very similar for respondents' evaluation of the general credit situation in the economy, as Supplemental Appendix Table B.3 shows.

We thus find that individuals' employment status and recent financial and credit situation are generally factors that determine their baseline perceived deflation risk. However, the increase in perceived deflation probabilities after 2021 is not particularly driven by the corresponding groups of consumers that have higher baseline deflation probabilities.

3.3 Perceived Deflation Risk and Expected Goods Price Declines

We proceed to examine the relation between households' deflation expectations and their price predictions of goods and services over the next year. This analysis provides first evidence of the internal consistency of individuals' reported deflation expectations, as high probabilities assigned to a deflation scenario should be associated with expected price declines of individual goods and services.

In Supplemental Appendix Table B.4, we run a panel regression of the individuals' reported deflation probability on an indicator variable that is one if the respondent reports an expected negative price change for a given good. The respondents' price change expectations are elicited for gas, food, rent, medical care, and college costs. We control for the consumers' demographic attributes, their state, and their employment-status by including the corresponding fixed effects in our regression. The results show that an expected price decline for any of the considered items is strongly significantly positively related to the individual's perceived deflation probability. For example, expecting a gas price decline translates to a 6.91% higher reported deflation probability, and the effect is amplified to 11.24% (=6.91%+4.33%) in the period after 2021.

These results clearly indicate that individuals' reported deflation probabilities are strongly grounded in their expectations on the development of goods and services prices. The fact that expected negative price changes in individual goods and services translate to higher reported deflation probabilities helps mitigate concerns that consumers may not fully understand the meaning of "deflation" or confuse "deflation" and "disinflation". In Section 5, we further address such concerns by confirming our main results after filtering out individuals with internally inconsistent deflation expectations.

4 Perceived Deflation Risk and Economic Expectations

We utilize the striking increase in consumers' deflation expectations after 2021 as a laboratory to investigate the relation between individuals' perceived deflation risk and their expectations regarding other dimensions of the state of the economy. In other words, our goal is to understand consumers' subjective model of the economy with respect to a deflation scenario,

in the spirit of Andre et al. (2022). The unique setting provided by the post-2021 period is particularly suitable for this purpose since it captures a time of unprecedentedly high perceived deflation risk without exhibiting actual deflation in the economy.

We first ask whether individuals associate a deflation scenario with worse economic outcomes, that is, an economic recession and high unemployment. Second, we analyze the relation between perceived deflation risk and expected household spending, which allows us to relate individuals' deflation expectations to their (planned) actions. Finally, we investigate how respondents' perceived deflation probabilities relate to their expectations on future stock and house prices. To address these points, we utilize the rich set of subjective expectations elicited in the SCE from the same pool of consumers that is surveyed on inflation expectations. Supplemental Appendix Table A.1 provides an overview of the different survey questions that we use for our analysis.

4.1 Is Perceived Deflation Risk Associated with Worse Economic Outcomes?

We first analyze whether consumers associate high perceived deflation risk with worse future economic outcomes. The classical "deflation spiral" theory prominently predicts that a deflation depresses economic growth as consumers postpone the purchase of goods and services, ultimately leading to reduced employment and income. We evaluate whether consumers' subjective model of a deflation scenario follows this theory by investigating the relation between people's deflation expectations and their expectations on the change of the economy's unemployment rate and their personal job insecurity in the future.

Table 2: Perceived Deflation Risk and Economic Expectations

This table reports results from panel regressions of variables capturing consumers' economic expectations on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. The economic expectations variables are the perceived probability of increasing unemployment and of losing one's individual job, the expected change in employment-based earnings, household income, and spending, and the perceived chance that the stock market will increase as well as the expected change in home prices. In Panel A, deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins that represent less-than-zero inflation. In Panel B, the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We include demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

Panel A: Deflation Probability

	(1) Unempl.	(2) Job Insec.	(3) Earnings	(4) Income	(5) Spending	(6) Stocks	(7) Homes
Post 2021	4.218***	-1.739***	-13.33	-9.818	3.136***	-3.496***	0.325
	(0.700)	(0.388)	(13.552)	(9.382)	(0.422)	(0.509)	(0.238)
Defl. Prob.	-1.182**	1.099**	-29.55	-19.37	-1.563**	0.169	-2.262***
	(0.570)	(0.454)	(31.616)	(20.028)	(0.759)	(0.460)	(0.270)
Defl. Prob. × Post 2021	-5.484***	-3.266***	27.63	18.99	-0.0461	-2.032**	-4.606***
	(1.000)	(0.794)	(29.191)	(18.159)	(0.873)	(0.821)	(0.556)
Constant	37.46***	14.26***	19.87	16.59	4.716***	42.94***	5.721***
	(0.304)	(0.202)	(15.785)	(10.574)	(0.339)	(0.264)	(0.096)
Demographics FE	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y	Y	Y
Number of Observations	162,386	97,427	110,439	162,489	162,566	161,833	142,280

Panel B: Deflation Indicator

	(1) Unempl.	(2) Job Insec.	(3) Earnings	(4) Income	(5) Spending	(6) Stocks	(7) Homes
Post 2021	3.855***	-1.861***	-10.33	-7.824	3.182***	-3.746***	0.460**
	(0.673)	(0.363)	(10.422)	(7.362)	(0.369)	(0.476)	(0.226)
Defl. Ind.	-1.406***	-0.142	-14.20	-9.870	-1.252**	-0.820**	-2.956***
	(0.486)	(0.386)	(15.191)	(9.921)	(0.506)	(0.385)	(0.250)
Defl. Ind. × Post 2021	-3.318***	-1.906***	12.85	9.571	0.0527	-0.435	-3.599***
	(0.761)	(0.579)	(13.717)	(8.626)	(0.599)	(0.615)	(0.434)
Constant	37.44***	14.45***	16.75	14.52*	4.616***	43.01***	5.713***
	(0.305)	(0.195)	(12.448)	(8.430)	(0.277)	(0.255)	(0.091)
Demographics FE	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y	Y	Y
Number of Observations	164,417	98,207	111,319	164,469	164,551	163,845	143,712

Table 2 reports, in column (1) of Panel A, the results of a panel regression of individuals' reported probability of an increase in unemployment on their perceived probability of deflation. We find that individuals assigning a high probability to a deflation scenario are significantly *less likely* to expect an increase in unemployment. This effect is present in the overall sample and strongly amplified during the recent period of high perceived deflation risk after 2021. In particular, a 10% higher perceived deflation probability corresponds to a 0.67% (=0.12%+0.55%) lower assigned probability of increased future unemployment. Repeating the analysis using respondents' deflation indicator as the dependent variable instead of the reported deflation probability in Panel B confirms a statistically significant negative relation of perceived deflation risk to the expectations about general unemployment.[8] We include demographics, state, and employment-status fixed effects in our main results, and report specifications without these fixed effects in Supplemental Appendix Table B.5. Overall, all these results show that consumers' view of a deflation scenario and its relation to general unemployment is in clear contrast with theories associating a deflation with increased unemployment.

We ask whether this finding, which refers to unemployment at the economy level, is also reflected by the relation between respondents' perceived deflation probability and their expected individual job insecurity. Column (2) of Panels A and B shows that while the results on the baseline relation are mixed, perceived deflation risk is strongly negatively related to consumers' perceived individual job insecurity in the period after 2021. Note that perceived individual job insecurity is only elicited for individuals who are working and not

[8] As Comerford (2024) points out, the inflation or deflation indicator is not subject to the potential biases that elicited probability distributions may suffer from (see also Boctor et al., 2024). We ensure the robustness of our results to either measure of deflation expectations.

self-employed, leading to a smaller sample size for this analysis. In Supplemental Appendix Table B.6, we report extended results with different sets of fixed effects.

We next analyze the relation of perceived deflation risk to individuals' expected future earnings and overall income. Associating a deflation scenario with an economic downturn would suggest significantly lower income expectations for those individuals with a high perceived deflation risk. Our results in columns (3) and (4) of Panels A and B show that there is no significant relation between perceived deflation risk and future earnings and income in individuals' expectations. Focusing on the period of high perceived deflation after 2021 particularly shows that the combined impact of the baseline effect over the whole sample and the incremental effect over this special period almost entirely cancel out to zero. Altogether, we find that consumers do not connect a deflation scenario with lower (or higher) expected future earnings or income. Supplemental Appendix Tables B.7 and B.8 present detailed results for specifications with different fixed effects, and Section 4.4 shows that our conclusions remain the same when removing extreme responses on earnings or income expectations from our sample.

In Supplemental Appendix Table B.9, we further examine whether individuals associate a deflation scenario with a worsening of their future financial situation. Consistent with our results on unemployment, earnings, and income, we find that this is not the case. In fact, the results reveal that consumers who report a higher deflation probability are significantly *less likely* to expect that they will be financially worse off one year ahead, and this effect is amplified for the post-2021 period of high perceived deflation risk.

In summary, our results reveal that consumers' expectations related to a deflation scenario do not line up with theories that imply a strong link between deflation and economic

recession. Individuals who assign a high probability to a deflation state predict lower unemployment as well as unchanged earnings and income, and are less likely to expect a worsening of their financial situation.

4.2 Perceived Deflation Risk and Household Spending

We proceed to examine the link between perceived deflation risk and expected household spending. Understanding the relation between consumers' inflation expectations and their actions is one of the most important and policy-relevant research goals in this area. While standard theory predicts a positive relation between expected inflation and consumer spending, recent research shows that the relation is hard to identify in general, but negative for durables spending (Bachmann, Berg and Sims 2015, Coibion et al. 2023). These results, which are obtained in the context of positive inflation scenarios, motivate the question whether consumers intend to reduce or increase spending in a deflation scenario. For this case, classical theory predicts a deflation to provide incentives for consuming less and saving more, such that individuals who assign high probabilities to a deflation scenario should expect to spend less in the future.

Column (5) in Panels A and B of Table 2 analyzes the relation between consumers' perceived deflation risk and their expected spending. We find that over the full sample, higher perceived deflation risk is significantly associated with lower expected spending in the future, both for reported deflation probabilities and for the deflation indicator. Precisely, a 10% higher probability assigned to a future deflation translates to a reduction of expected spending by about 0.16% on average, and this result is not significantly altered in the pe-

riod after 2021. We report results for additional specifications with varying fixed effects in Supplementary Appendix Table B.10.

An important question is whether the expected reduction in spending in a deflation scenario is mechanically induced by the expectation of falling prices, or reflects an expected reduction of spending in real terms. We address this question based on information from the SCE Household Spending Survey, a module of the Survey of Consumer Expectations that is issued at a four-months frequency to the same individuals as the main survey. This module asks consumers to report the probability of making large purchases within the next four months, similar to the information considered by Bachmann, Berg and Sims (2015). As Supplementary Appendix Table B.11 shows, we find that a high deflation probability is significantly negatively related to the reported propensity of making large purchases over the full sample. Therefore, consumers' lower expected spending in a deflation scenarios is not just driven by expected lower prices, but also by the quantity dimension.

These results show that in contrast to positive-inflation scenarios, where the response of consumers' spending to lower inflation turns out to be positive, individuals associate a deflation scenario with lower expected spending both in nominal and real terms. This relation is consistent with the central channel of the classical "deflation spiral" theory that postulates postponed and reduced spending in deflation states.

4.3 Perceived Deflation Risk and Asset Prices

We finally examine how perceived deflation risk is related to expected changes in asset prices, in particular stock and house prices. Falling asset prices are the main ingredient of the debt deflation channel, under which deflation leads to financial instability and recession due to an

increasing real value of debt. While Section 4.1 indicates that consumers do not associate a deflation with a recession scenario, it is nevertheless possible that they expect declining asset prices but either neglect the feedback effect to the real economy or assume that it is economically small.

Column (6) of Table 2 reports results on the relation between individuals' perceived deflation risk and their expected stock price changes. The results reveal that individuals with higher perceived deflation risk assign significantly lower probabilities to stock market increases. Across different specifications based on deflation probabilities or the deflation indicator in Panels A and B, it is not entirely clear whether the negative relation is present in general or mainly driven by the post-2021 period. Supplementary Appendix Table B.12 suggests that controlling for demographics, state, and employment-status fixed effects, as we do in our main specification, substantially alleviates the observed baseline effect, while these fixed effects strengthen the negative effect observed in the post-2021 period.

The relation between perceived deflation risk and expected home price changes, reported in column (7), is strikingly clear and unambiguous. Both Panels A and B show that there is a strong and highly significant negative relation between perceived deflation risk and expected home price changes. A 10% higher perceived probability of deflation is accompanied by 0.23% lower expected home prices over a 3-year horizon, and this effect is strongly amplified in the post-2021 period, where it is associated with 0.69% (=0.23%+0.46%) lower expected home prices. Supplementary Appendix Table B.13 shows that the negative effect over the full sample and the amplification after 2021 is consistently observed across all specifications and almost unaffected when controlling for demographics, state, and employment-status fixed effects. In addition, Supplementary Appendix Table B.14 confirms these results when

considering home prices over a shorter (1-year) horizon, suggesting that consumers expect a steady home price decline over time in a deflation scenario.

In summary, we find strong evidence that consumers who assign a high probability to a deflation scenario associate such scenario with lower stock and house prices compared to the general population.

4.4 Additional Tests

We conduct several additional tests of our results. In particular, we demonstrate that our findings are not affected by individuals who report internally inconsistent deflation expectations, are not driven by consumers who report extreme economic expectations, and are not confounded by the political orientation of the individuals' home state.

Internal consistency of reported deflation expectations It is possible that the deflation expectations reported by some individuals cannot be taken and interpreted at face value if these individuals fail to fully comprehend the meaning of such scenario. The SCE survey data allow us to identify such cases; for example, when individuals confuse deflation with "disinflation" (i.e., lower inflation compared to previous time periods) and report that they expect deflation while at the same time reporting a positive inflation point estimate. We repeat our main analysis from Table 2 after removing such "internally inconsistent" responses from our sample.[9]

[9]We consider responses to be internally inconsistent in which a respondent reports that they expect deflation (in the binary deflation indicator) but also reports a non-negative inflation point estimate, and we apply the same logic on the side of inflation (reported expected inflation in the binary indicator and a negative point estimate). We also deem observations as internally inconsistent that report expected deflation and do not assign a positive probability to any of the deflation brackets, and do the same on the inflation side (expected inflation but no positive probability to any of the inflation brackets).

Supplemental Appendix Table B.15 reports the results. First, comparing the number of observations to Table 2 shows that only a small number of responses are internally inconsistent, for example 2,790 out of 162,386 (1.72%) in column (1) of Panel A. Moreover, the regression results for the sample without internally inconsistent responses yields results that are very similar to our baseline analysis. Overall, these findings indicate that individuals who misunderstand the meaning of deflation or confuse deflation and disinflation do not substantially confound our results.

Extreme responses on economic expectations Some individuals in our sample also submit rather extreme responses when asked about their economic expectations for the future. For example, there are cases in which a respondent expects an earnings increase of 10,000% over the next 12 months, which appears to be possible only if current earnings are very close to zero. To address the concern that such outliers could substantially drive or confound our results, we rigorously trim our sample by removing observations outside of the 10% and 90% quantiles, for each of the economic variables considered in Table 2.

Supplemental Appendix Table B.16 repeats our main analysis from Table 2 for the trimmed sample. The results show that the removal of extreme responses does not affect our main findings. In fact, the most notable difference to our baseline results is a significantly positive relation of perceived deflation risk to the expected change in household income over the full sample. Such effect is line with and strengthens the interpretation that consumers do not associate a deflation scenario with a worsening of general economic conditions.

Political orientation Individuals' political orientation is an important factor explaining their economic beliefs, including inflation expectations (e.g. Stantcheva, 2024). In our

dataset, we are able to characterize the *more likely* political orientation of a respondent based on the state that they live in. In Supplemental Appendix Table B.17, we address the question whether deflation probabilities are perceived to be different for respondents from Blue (Democrat-leaning) states or Red (Republican-leaning) states, relative to swing states. The results show that consumers living in Democrat-leaning states tend to report lower deflation probabilities, but the effect is insignificant when controlling for demographics fixed effects. The gap in perceived deflation risk between Blue and Red states does also not widen in the post-2021 period.

We further repeat our main analysis from Table 2 separately for the sample of respondents from Democrat-leaning states and Republican-leaning states in Supplemental Appendix Tables B.18 and B.19. While the results confirm all our main results for both samples, there are also some small differences between Blue and Red states. Most notably, the expectation of lower stock prices in a deflation scenario for the post-2021 period is much more pronounced in Red states compared to Blue states.

5 Understanding Consumers' Deflation Beliefs

Our results show that consumers (i) do not associate a deflation scenario with an economic recession and rather expect lower unemployment and a less likely worsening of their financial situation, (ii) predict, at the same time, reduced spending in a deflation scenario and, (iii) expect lower asset prices. We put our results into perspective, with the goal of understanding consumers' economic model of a deflation scenario. In particular, we discuss to what extent individuals' beliefs on deflation and the relation to the state of the economy are in line with

different economic theories, and finally consider the possibility that people's expectations do not fully account for the general equilibrium effects of a deflation.

Bad vs. good deflation We first discuss our results in light of the dichotomy of "bad" and "good" deflation. For inflation, consumers, firms, and investors tend to consider higher inflation as a "bad" state of the economy (Shiller, 1997; Stantcheva, 2024; Knox and Timmer, 2025). For deflation, established economic theories strongly emphasize mechanisms through which a deflation negatively affects the economy. Nevertheless, the possibility of "good deflation" — a deflation that is accompanied by strong economic growth and low unemployment — is also highlighted in the literature (e.g., Bordo, Landon-Lane and Redish 2009, Borio et al. 2015). A "good deflation" can be caused by positive technology shocks, leading to an expansion of supply that outpaces the increase in aggregate demand, a price decline in imported goods that has a positive effect on both the supply and demand side of the economy, or a price reversal due to the possible resolution of underlying supply chain issues (see also Rai and Sabourin, 2023).

Our findings in Section 4 strongly indicate that U.S. consumers do not associate a deflation scenario with an economic downturn. Therefore, consumers' subjective model of deflation appears to be inconsistent with theories of "bad deflation". Consumers rather expect lower general unemployment, greater personal job security, and no decline in future earnings or income, suggesting that their subjective model is one of "good deflation".

Reversal of profit-led inflation The recent debate on "profit-led" inflation (see, e.g., Weber and Wasner, 2023) adds an additional dimension to the potential sources of inflation and deflation. According to this theory, the inflation in recent years is driven mostly by

corporate greed ("greedflation") and thus accompanied by higher corporate profits through higher markups, translating also to higher realized stock returns. We discuss the possibility that consumers view a deflation scenario as the reversal of such supposed profit-led inflation, thus leading to lower stock returns but increased welfare for consumers. Consumers may entertain such views subjectively, even if the recent high-inflation period may formally not be consistent with the profit-led inflation theory, as Bilbiie and Känzig (2024) argue.

Our results in Section 4 show that individuals' beliefs may indeed be consistent with a reversal of profit-led inflation, as reflected by lower stock returns expected by respondents who assign a high probability to a deflation scenario. At the same time, individuals do not expect a reduction in household income or employment, consistent with the idea that a deflation would reduce corporate profits while having no negative effect on consumer welfare.

Neglect of general equilibrium effects From a general equilibrium perspective, consumers' beliefs about a deflation scenario characterized by our results in Section 4 seem in itself inconsistent. Individuals associate deflation with lower household spending and a lower likelihood of making large purchases, which they, however, do not connect with a negative effect on other economic variables such as employment and household income. Similarly, we find that consumers strongly link a deflation scenario to declining home prices, which would typically affect the economy negatively through the debt deflation channel.

A potential explanation for consumers having these beliefs is that they think of deflation from the perspective of their own individual utility maximization — taking economic state variables as given — and neglect longer-term general equilibrium effects. Under such type of "partial equilibrium thinking", a well-established psychological bias (see also Bastianello

and Fontanier, 2025), individuals correctly understand and react to the first-order effects of deflation, but do not account for feedback effects when forming their economic expectations.

6 Conclusion

In this paper, we investigate consumers' subjective deflation expectations and the economic outcomes that they associate with a future deflation scenario. We use the post-2021 period as a laboratory, in which consumer expectations of future inflation rates surprisingly exhibit a pronounced deflation tail after a negative shift in their skewness.

We find that consumers' subjective model of deflation is inconsistent with leading economic theories that strongly link deflation with economic recession (either as a cause or as a consequence). Rather, our results reveal that individuals with high perceived deflation risk expect lower unemployment in the economy and higher personal job security, and they do not anticipate significantly lower individual earnings or household income compared to the general population. Overall, these results correspond to the subjective model of "good deflation".

Our findings are particularly consistent with respondents viewing a future deflation as the result of a reversal of goods price increases and past profit-lead inflation, that is, inflation caused by an increase in firms' markups and profits. Consistent with that, we find that individuals with high perceived deflation risk expect lower future stock prices. At the same time, consumers also associate a deflation with lower individual household spending and declining home prices, which are the typical ingredients for "bad deflation". Therefore, the

subjective "good deflation" view entertained by consumers may not fully account for the potential negative equilibrium effects of deflation.

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Appendix

A Survey Questions

Table A.1: This table provides an overview of the survey questions from the Survey of Consumer Expectations (SCE), conducted by the New York Fed, that we investigate in the empirical analysis of this paper. This first column refers to the variable name used in our tables, followed by the question identifier specified by the New York Fed and the precise formulation of the question as presented to the survey participants. The last column lists the table(s) in our paper analyzing the responses to the respective question.

Variable	Question ID	Question	Table
Deflation indicator	Q9bv2	Over the 12-month period between [Month, Year - 24 months from survey date] and [Month, Year - 36 months from survey date], do you think that there will be inflation or deflation?	All
Deflation estimate	Q9bv2part2	What do you expect the rate of [inflation (if Q9bv2=inflation) / deflation (if Q9bv2=deflation)] to be over that period? Please give your best guess.	B.15 (filter criteria)
Deflation probability	Q9c	And in your view, what would you say is the percent chance that, over the [Month, Year - 24 months from survey date] and [Month, Year - 36 months from survey date], the rate of [inflation / deflation] will be [inflation / deflation bins, such as between 0% and 2%]	All
Recent finance	Q1	Do you think you (and any family living with you) are financially better or worse off these days than you were 12 months ago?	B.2
Recent credit	Q28	Compared to 12 months ago, do you think it is generally harder or easier these days for people to obtain credit or loans (including credit and retail cards, auto loans, student loans, and mortgages)?	B.3
Expected price decline	C4info	Twelve months from now, what do you think will have happened to the price of the following items? I expect the price of [different items] to have [increased / decreased] by [...] %	B.4
Unemployment	Q4new	What do you think is the percent chance that 12 months from now the unemployment rate in the U.S. will be higher than it is now?	2, B.5
Job insecurity	Q13new	What do you think is the percent chance that you will lose your job during the next 12 months?	2, B.6
Earnings	Q23v2part2	Please think ahead to 12 months from now. Suppose that you are working in the exact same job at the same place you currently work, and working the exact same number of hours. By about what percent do you expect your earnings to have [increased / decreased]? Please give your best guess.	2, B.7
Income	Q25v2part2	By about what percent do you expect your total household income to [increase / decrease]? Please give your best guess.	2, B.8
Worse finance situation	Q2	And looking ahead, do you think you (and any family living with you) will be financially better or worse off 12 months from now than you are these days?	B.9
Spending	Q26v2part2	By about what percent do you expect your total household spending to [increase / decrease]? Please give your best guess.	2, B.10
Large purchases	SCE Spending Survey QSP4	Now looking ahead, what do you think is the percent chance that a member of your household (including you) will make any of the following large purchases within the next 4 months?	B.11
Stocks	Q6new	What do you think is the percent chance that 12 months from now, on average, stock prices in the U.S. stock market will be higher than they are now?	2, B.12
Homes 3Y	C2part2	Over the 12-month period between [Month, Year - 24 months from survey date] and [Month, Year - 36 months from survey date] [...], I expect the average home price to [increase / decrease by [...] %	2, B.13
Homes 1Y	Q31v2part2	Over the next 12 months [...], I expect the average home price to [increase / decrease by [...] %	B.14

B Additional Empirical Results

Table B.1: Employment Status and Deflation Expectations

This table reports results from regressions of consumers' three-year deflation expectations on indicator variables for their employment status. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the employment status indicators. Columns (1)–(3) present results from panel regressions in which the dependent variable is the perceived deflation probability, aggregated from all bins that represent less-than-zero inflation. Columns (4)–(6) present results from panel logit regressions in which the dependent variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics and state fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Defl. Prob.	(2) Defl. Prob.	(3) Defl. Prob.	(4) Defl. Ind.	(5) Defl. Ind.	(6) Defl. Ind.
Post 2021	0.0906***	0.0806***	0.0852***	1.097***	1.048***	1.087***
	(0.016)	(0.016)	(0.016)	(0.110)	(0.114)	(0.112)
Full-time	-0.0205***	-0.0110**	-0.0109**	-0.117*	-0.0530	-0.0456
	(0.005)	(0.005)	(0.005)	(0.062)	(0.062)	(0.062)
Part-time	-0.00798	-0.00321	-0.00238	-0.0141	0.0231	0.0319
	(0.005)	(0.005)	(0.005)	(0.058)	(0.059)	(0.059)
Looking for work	0.0188**	0.0125*	0.0124*	0.212***	0.165**	0.168**
	(0.008)	(0.007)	(0.007)	(0.076)	(0.075)	(0.076)
Temporarily laid off	0.0479***	0.0412***	0.0414***	0.417***	0.372***	0.380***
	(0.013)	(0.013)	(0.013)	(0.135)	(0.135)	(0.135)
On leave	0.0509***	0.0388**	0.0387**	0.660***	0.588***	0.589***
	(0.017)	(0.018)	(0.018)	(0.136)	(0.146)	(0.146)
Unable to work	0.0479***	0.0233***	0.0241***	0.331***	0.162*	0.178**
	(0.009)	(0.009)	(0.009)	(0.082)	(0.085)	(0.085)
Retiree	-0.0438***	-0.0141**	-0.0137**	-0.340***	-0.0994	-0.0907
	(0.005)	(0.006)	(0.006)	(0.063)	(0.070)	(0.070)
Student	0.0269***	0.0136	0.0130	0.193**	0.141	0.135
	(0.008)	(0.008)	(0.008)	(0.089)	(0.089)	(0.089)
Homemaker	0.0374***	0.0269***	0.0271***	0.301***	0.230***	0.232***
	(0.007)	(0.007)	(0.007)	(0.078)	(0.078)	(0.078)
Other	0.0161*	0.0189**	0.0194**	0.132	0.163*	0.167*
	(0.009)	(0.009)	(0.009)	(0.098)	(0.098)	(0.098)
Full-time × Post 2021	0.0109	0.0197	0.0155	0.187*	0.245**	0.211*
	(0.016)	(0.016)	(0.016)	(0.113)	(0.116)	(0.114)
Part-time × Post 2021	0.0172	0.0194	0.0160	0.0870	0.0978	0.0723
	(0.016)	(0.016)	(0.016)	(0.107)	(0.111)	(0.109)
Looking for work × Post 2021	-0.00170	0.00235	-0.000643	-0.272*	-0.247	-0.277*
	(0.023)	(0.023)	(0.023)	(0.158)	(0.165)	(0.166)
Temporarily laid off × Post 2021	-0.0209	-0.0214	-0.0235	-0.232	-0.209	-0.256
	(0.036)	(0.037)	(0.038)	(0.250)	(0.267)	(0.267)
On leave × Post 2021	-0.0380	-0.0246	-0.0312	-0.725***	-0.621**	-0.661**
	(0.034)	(0.034)	(0.033)	(0.261)	(0.268)	(0.269)
Unable to work × Post 2021	-0.0394*	-0.0368*	-0.0441**	-0.411***	-0.387**	-0.442***
	(0.022)	(0.022)	(0.021)	(0.150)	(0.154)	(0.152)
Retiree × Post 2021	0.0274	0.0321*	0.0266	0.301***	0.325***	0.289**
	(0.017)	(0.017)	(0.016)	(0.115)	(0.119)	(0.118)
Student × Post 2021	-0.00809	-0.00535	-0.0114	-0.141	-0.128	-0.165
	(0.023)	(0.023)	(0.022)	(0.162)	(0.166)	(0.166)
Homemaker × Post 2021	0.00387	0.0163	0.0133	-0.0801	0.00737	-0.0124
	(0.021)	(0.021)	(0.021)	(0.142)	(0.149)	(0.149)
Other × Post 2021	-0.00340	0.00126	-0.00332	0.0190	0.0352	0.0119
	(0.030)	(0.030)	(0.030)	(0.189)	(0.197)	(0.200)
Constant	0.170***	0.160***	0.160***	-2.074***	-1.507***	-1.054***
	(0.005)	(0.005)	(0.005)	(0.062)	(0.082)	(0.267)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Number of Observations	165,207	163,079	162,680	167,314	165,125	164,717

Table B.2: Recent Finance Situation and Deflation Expectations

This table reports results from regressions of consumers' three-year deflation expectations on indicator variables for their recent financial situation. The baseline is a "much worse" financial situation, for which the indicator is omitted. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the finance situation indicators. Columns (1)–(3) present results from panel regressions in which the dependent variable is the perceived deflation probability, aggregated from all bins that represent less-than-zero inflation. Columns (4)–(6) present results from panel logit regressions in which the dependent variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Defl. Prob.	(2) Defl. Prob.	(3) Defl. Prob.	(4) Defl. Ind.	(5) Defl. Ind.	(6) Defl. Ind.
Post 2021	0.0921***	0.0968***	0.101***	0.927***	0.958***	0.983***
	(0.014)	(0.014)	(0.014)	(0.102)	(0.107)	(0.108)
Somewhat worse	-0.0306***	-0.0130*	-0.00809	-0.346***	-0.227***	-0.206***
	(0.007)	(0.007)	(0.007)	(0.070)	(0.071)	(0.071)
About the same	-0.0301***	-0.00965	-0.00235	-0.465***	-0.333***	-0.300***
	(0.007)	(0.007)	(0.007)	(0.071)	(0.072)	(0.073)
Somewhat better	-0.0275***	-0.00368	0.00453	-0.416***	-0.254***	-0.217***
	(0.008)	(0.008)	(0.008)	(0.075)	(0.077)	(0.078)
Much better	-0.0146	0.00773	0.0158*	-0.132	0.0221	0.0602
	(0.009)	(0.009)	(0.009)	(0.093)	(0.095)	(0.096)
Somewhat worse × Post 2021	0.00483	0.000597	-0.00256	0.228**	0.220**	0.206**
	(0.014)	(0.014)	(0.014)	(0.099)	(0.102)	(0.103)
About the same × Post 2021	0.0153	0.00746	0.00307	0.350***	0.320***	0.295***
	(0.015)	(0.015)	(0.015)	(0.107)	(0.108)	(0.109)
Somewhat better × Post 2021	0.0137	0.00593	0.00195	0.385***	0.363***	0.340***
	(0.016)	(0.016)	(0.016)	(0.111)	(0.113)	(0.114)
Much better × Post 2021	-0.00980	-0.0171	-0.0229	-0.0859	-0.144	-0.164
	(0.021)	(0.022)	(0.022)	(0.155)	(0.161)	(0.162)
Constant	0.182***	0.162***	0.155***	-1.759***	-0.772***	-0.856***
	(0.008)	(0.007)	(0.008)	(0.073)	(0.270)	(0.275)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	165,116	162,990	162,591	167,229	164,633	164,633

Table B.3: Recent Credit Situation and Deflation Expectations

This table reports results from regressions of consumers' three-year deflation expectations on indicator variables for their evaluation of the recent credit situation in the economy. The baseline is a "much worse" credit situation, for which the indicator is omitted. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the credit situation indicators. Columns (1)–(3) present results from panel regressions in which the dependent variable is the perceived deflation probability, aggregated from all bins that represent less-than-zero inflation. Columns (4)–(6) present results from panel logit regressions in which the dependent variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Defl. Prob.	(2) Defl. Prob.	(3) Defl. Prob.	(4) Defl. Ind.	(5) Defl. Ind.	(6) Defl. Ind.
Post 2021	0.0613***	0.0621***	0.0624***	0.712***	0.720***	0.730***
	(0.011)	(0.011)	(0.011)	(0.080)	(0.087)	(0.087)
Somewhat worse	-0.0453***	-0.0238***	-0.0213***	-0.332***	-0.178***	-0.167***
	(0.006)	(0.006)	(0.006)	(0.053)	(0.053)	(0.053)
Equal	-0.0589***	-0.0332***	-0.0298***	-0.561***	-0.368***	-0.353***
	(0.006)	(0.006)	(0.006)	(0.054)	(0.056)	(0.056)
Somewhat better	-0.0544***	-0.0225***	-0.0188***	-0.448***	-0.206***	-0.188***
	(0.006)	(0.006)	(0.006)	(0.060)	(0.063)	(0.063)
Much better	-0.0148	0.00811	0.0103	0.0955	0.269***	0.282***
	(0.010)	(0.010)	(0.010)	(0.092)	(0.093)	(0.093)
Somewhat worse × Post 2021	0.0298**	0.0339***	0.0341***	0.397***	0.456***	0.452***
	(0.012)	(0.011)	(0.011)	(0.086)	(0.092)	(0.092)
Equal × Post 2021	0.0513***	0.0462***	0.0461***	0.688***	0.673***	0.666***
	(0.014)	(0.013)	(0.013)	(0.094)	(0.098)	(0.098)
Somewhat better × Post 2021	0.0676***	0.0556***	0.0537***	0.706***	0.632***	0.623***
	(0.017)	(0.016)	(0.017)	(0.110)	(0.115)	(0.115)
Much better × Post 2021	0.0246	0.00553	0.00631	0.170	0.0344	0.0213
	(0.029)	(0.028)	(0.028)	(0.158)	(0.168)	(0.168)
Constant	0.204***	0.180***	0.177***	-1.739***	-0.780***	-0.848***
	(0.006)	(0.006)	(0.006)	(0.054)	(0.264)	(0.269)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	165,161	163,039	162,640	167,261	164,671	164,671

Table B.4: Expected Price Declines and Deflation Expectations

This table reports results from regressions of consumers' three-year deflation probabilities on indicator variables for expected price declines in individual goods and services. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the expected price decline indicators. The expected price decline indicator for a given good or service (gas, food, rent, medical cost, or college cost) is one if the consumer reports that they expect a negative price change for that good or service over the following twelve months. We include demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Defl. Prob.	(2) Defl. Prob.	(3) Defl. Prob.	(4) Defl. Prob.	(5) Defl. Prob.
Post 2021	0.0819***	0.0841***	0.0930***	0.0985***	0.0964***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Gas price decline	0.0691***				
	(0.004)				
Gas price decline × Post 2021	0.0433***				
	(0.010)				
Food price decline		0.195***			
		(0.008)			
Food price decline × Post 2021		-0.00706			
		(0.013)			
Rent decline			0.114***		
			(0.007)		
Rent decline × Post 2021			0.0476***		
			(0.015)		
Medical cost decline				0.0922***	
				(0.007)	
Medical cost decline × Post 2021				0.0684***	
				(0.018)	
College cost decline					0.0819***
					(0.006)
College cost decline × Post 2021					0.0398***
					(0.013)
Constant	0.146***	0.149***	0.150***	0.150***	0.150***
	(0.002)	(0.002)	(0.002)	(0.002)	(0.002)
Demographics FE	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y
Number of Observations	162,680	162,680	162,680	162,680	162,680

Table B.5: Deflation Expectations and Perceived Probability of Increasing Unemployment

This table reports results from panel regressions of consumers' perceived probability of increasing unemployment on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. In columns (1)–(3), deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins representing less-than-zero inflation. In columns (4)–(6), the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Unempl.	(2) Unempl.	(3) Unempl.	(4) Unempl.	(5) Unempl.	(6) Unempl.
Post 2021	4.324***	4.213***	4.218***	3.983***	3.862***	3.855***
	(0.719)	(0.709)	(0.700)	(0.689)	(0.682)	(0.673)
Defl. Prob.	-1.598***	-1.085*	-1.182**			
	(0.567)	(0.567)	(0.570)			
Defl. Prob. × Post 2021	-5.334***	-5.488***	-5.484***			
	(1.024)	(1.015)	(1.000)			
Defl. Ind.				-1.746***	-1.354***	-1.406***
				(0.487)	(0.487)	(0.486)
Defl. Ind. × Post 2021				-3.183***	-3.375***	-3.318***
				(0.767)	(0.769)	(0.761)
Constant	37.52***	37.46***	37.46***	37.46***	37.45***	37.44***
	(0.311)	(0.306)	(0.304)	(0.308)	(0.306)	(0.305)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	164,910	162,785	162,386	167,005	164,819	164,417

Table B.6: Deflation Expectations and Perceived Personal Job Insecurity

This table reports results from panel regressions of consumers' perceived probability of losing their job on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. In columns (1)–(3), deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins representing less-than-zero inflation. In columns (4)–(6), the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Job Insec.	(2) Job Insec.	(3) Job Insec.	(4) Job Insec.	(5) Job Insec.	(6) Job Insec.
Post 2021	-2.138***	-1.855***	-1.739***	-2.206***	-1.939***	-1.861***
	(0.397)	(0.401)	(0.388)	(0.373)	(0.376)	(0.363)
Defl. Prob.	1.675***	1.392***	1.099**			
	(0.482)	(0.473)	(0.454)			
Defl. Prob. × Post 2021	-3.310***	-3.199***	-3.266***			
	(0.817)	(0.818)	(0.794)			
Defl. Ind.				0.311	0.122	-0.142
				(0.414)	(0.405)	(0.386)
Defl. Ind. × Post 2021				-2.242***	-2.041***	-1.906***
				(0.600)	(0.596)	(0.579)
Constant	14.27***	14.24***	14.26***	14.50***	14.45***	14.45***
	(0.218)	(0.212)	(0.202)	(0.210)	(0.206)	(0.195)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	98,612	97,707	97,427	99,411	98,488	98,207

Table B.7: Deflation Expectations and Expected Change of Personal Earnings

This table reports results from panel regressions of consumers' expected change of personal earnings on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. In columns (1)–(3), deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins representing less-than-zero inflation. In columns (4)–(6), the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Earnings	(2) Earnings	(3) Earnings	(4) Earnings	(5) Earnings	(6) Earnings
Post 2021	-15.36	-14.92	-13.33	-12.62	-11.91	-10.33
	(15.311)	(15.045)	(13.552)	(12.454)	(11.912)	(10.422)
Defl. Prob.	-24.52	-28.14	-29.55			
	(26.546)	(30.122)	(31.616)			
Defl. Prob. × Post 2021	25.12	28.20	27.63			
	(26.548)	(29.604)	(29.191)			
Defl. Ind.				-11.41	-13.05	-14.20
				(12.384)	(14.014)	(15.191)
Defl. Ind. × Post 2021				11.58	13.09	12.85
				(12.386)	(13.841)	(13.717)
Constant	19.61	19.91	19.87	16.97	16.88	16.75
	(15.310)	(15.801)	(15.785)	(12.453)	(12.569)	(12.448)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	111,831	110,729	110,439	112,732	111,610	111,319

Table B.8: Deflation Expectations and Expected Change of Household Income

This table reports results from panel regressions of consumers' expected change in total household income on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. In columns (1)–(3), deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins representing less-than-zero inflation. In columns (4)–(6), the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Income	(2) Income	(3) Income	(4) Income	(5) Income	(6) Income
Post 2021	-10.87	-11.18	-9.818	-9.018	-9.119	-7.824
	(10.243)	(10.540)	(9.382)	(8.341)	(8.465)	(7.362)
Defl. Prob.	-15.52	-18.85	-19.37			
	(17.372)	(19.714)	(20.028)			
Defl. Prob. × Post 2021	17.58	19.84	18.99			
	(17.382)	(18.877)	(18.159)			
Defl. Ind.				-7.569	-9.212	-9.870
				(8.329)	(9.414)	(9.921)
Defl. Ind. × Post 2021				8.797	9.884	9.571
				(8.341)	(8.893)	(8.626)
Constant	16.19	16.71	16.59	14.47*	14.65*	14.52*
	(10.239)	(10.705)	(10.574)	(8.337)	(8.556)	(8.430)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	165,008	162,888	162,489	167,038	164,871	164,469

Table B.9: Deflation Expectations and Expected Worsening of Financial Situation

This table reports results from panel regressions of a binary indicator for consumers expecting a worsening of their financial situation on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. In columns (1)–(3), deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins representing less-than-zero inflation. In columns (4)–(6), the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Worse Fin.	(2) Worse Fin.	(3) Worse Fin.	(4) Worse Fin.	(5) Worse Fin.	(6) Worse Fin.
Post 2021	0.128***	0.140***	0.138***	0.127***	0.137***	0.135***
	(0.012)	(0.012)	(0.012)	(0.013)	(0.012)	(0.012)
Defl. Prob.	-0.0581***	-0.0517***	-0.0536***			
	(0.007)	(0.007)	(0.007)			
Defl. Prob. × Post 2021	-0.0260*	-0.0352**	-0.0316**			
	(0.015)	(0.015)	(0.015)			
Defl. Ind.				-0.0240***	-0.0202***	-0.0212***
				(0.005)	(0.005)	(0.005)
Defl. Ind. × Post 2021				-0.0261**	-0.0298***	-0.0264**
				(0.011)	(0.011)	(0.011)
Constant	0.169***	0.165***	0.166***	0.163***	0.160***	0.160***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	165,136	163,011	162,612	167,245	165,059	164,657

Table B.10: Deflation Expectations and Expected Change of Household Spending

This table reports results from panel regressions of consumers' expected change in total household spending on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. In columns (1)–(3), deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins representing less-than-zero inflation. In columns (4)–(6), the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Spending	(2) Spending	(3) Spending	(4) Spending	(5) Spending	(6) Spending
Post 2021	2.943***	3.102***	3.136***	2.965***	3.126***	3.182***
	(0.396)	(0.404)	(0.422)	(0.364)	(0.366)	(0.369)
Defl. Prob.	-0.916**	-1.420**	-1.563**			
	(0.455)	(0.617)	(0.759)			
Defl. Prob. × Post 2021	-0.499	-0.284	-0.0461			
	(0.623)	(0.688)	(0.873)			
Defl. Ind.				-0.838***	-1.133***	-1.252**
				(0.314)	(0.404)	(0.506)
Defl. Ind. × Post 2021				-0.329	-0.108	0.0527
				(0.428)	(0.473)	(0.599)
Constant	4.757***	4.710***	4.716***	4.713***	4.620***	4.616***
	(0.307)	(0.324)	(0.339)	(0.271)	(0.272)	(0.277)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	165,084	162,965	162,566	167,118	164,953	164,551

Table B.11: Deflation Expectations and Expected Large Purchases

This table reports results from panel regressions of consumers' perceived probability of making a large purchase on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. In columns (1)–(3), deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins representing less-than-zero inflation. In columns (4)–(6), the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Lg. Purch.	(2) Lg. Purch.	(3) Lg. Purch.	(4) Lg. Purch.	(5) Lg. Purch.	(6) Lg. Purch.
Post 2021	1.276**	0.602	0.617	1.240**	0.626	0.655
	(0.616)	(0.640)	(0.622)	(0.574)	(0.598)	(0.589)
Defl. Prob.	-3.173***	-1.674***	-1.514***			
	(0.287)	(0.287)	(0.279)			
Defl. Prob. × Post 2021	1.301**	0.743	0.674			
	(0.512)	(0.475)	(0.448)			
Defl. Ind.				-2.180***	-1.260***	-1.153***
				(0.299)	(0.276)	(0.263)
Defl. Ind. × Post 2021				1.390***	0.712*	0.587
				(0.416)	(0.364)	(0.354)
Constant	15.58***	15.47***	15.44***	15.26***	15.28***	15.27***
	(0.352)	(0.354)	(0.348)	(0.340)	(0.355)	(0.348)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	26,203	25,937	25,877	26,439	26,170	26,110

Table B.12: Deflation Expectations and Perceived Probability of Increasing Stock Prices

This table reports results from panel regressions of consumers' perceived probability of a stock market increase on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. In columns (1)–(3), deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins representing less-than-zero inflation. In columns (4)–(6), the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Stocks	(2) Stocks	(3) Stocks	(4) Stocks	(5) Stocks	(6) Stocks
Post 2021	-3.549***	-3.593***	-3.496***	-3.682***	-3.835***	-3.746***
	(0.527)	(0.510)	(0.509)	(0.499)	(0.477)	(0.476)
Defl. Prob.	-2.856***	0.0885	0.169			
	(0.457)	(0.458)	(0.460)			
Defl. Prob. × Post 2021	-0.390	-1.892**	-2.032**			
	(0.813)	(0.820)	(0.821)			
Defl. Ind.				-2.742***	-0.884**	-0.820**
				(0.388)	(0.385)	(0.385)
Defl. Ind. × Post 2021				0.850	-0.326	-0.435
				(0.625)	(0.619)	(0.615)
Constant	43.38***	42.97***	42.94***	43.17***	43.03***	43.01***
	(0.266)	(0.265)	(0.264)	(0.261)	(0.257)	(0.255)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	164,333	162,231	161,833	166,405	164,246	163,845

Table B.13: Deflation Expectations and Expected Home Price Change 3 Years Ahead

This table reports results from panel regressions of consumers' expected home price change at a three-year horizon on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. In columns (1)–(3), deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins representing less-than-zero inflation. In columns (4)–(6), the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Homes 3Y	(2) Homes 3Y	(3) Homes 3Y	(4) Homes 3Y	(5) Homes 3Y	(6) Homes 3Y
Post 2021	0.294	0.333	0.325	0.396*	0.464**	0.460**
	(0.240)	(0.239)	(0.238)	(0.231)	(0.228)	(0.226)
Defl. Prob.	-1.044***	-2.163***	-2.262***			
	(0.272)	(0.271)	(0.270)			
Defl. Prob. × Post 2021	-5.260***	-4.688***	-4.606***			
	(0.549)	(0.553)	(0.556)			
Defl. Ind.				-2.168***	-2.898***	-2.956***
				(0.251)	(0.250)	(0.250)
Defl. Ind. × Post 2021				-4.117***	-3.654***	-3.599***
				(0.438)	(0.434)	(0.434)
Constant	5.563***	5.702***	5.721***	5.656***	5.702***	5.713***
	(0.091)	(0.095)	(0.096)	(0.088)	(0.089)	(0.091)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	144,489	142,635	142,280	145,954	144,070	143,712

Table B.14: Deflation Expectations and Expected Home Price Change 1 Year Ahead

This table reports results from panel regressions of consumers' expected home price change at a one-year horizon on their three-year deflation expectations. We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the deflation expectation variables. In columns (1)–(3), deflation expectations are measured by means of individuals' perceived deflation probability for a three-year horizon, aggregated from all bins representing less-than-zero inflation. In columns (4)–(6), the deflation expectation variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Homes 1Y	(2) Homes 1Y	(3) Homes 1Y	(4) Homes 1Y	(5) Homes 1Y	(6) Homes 1Y
Post 2021	0.109	0.193	0.164	0.214	0.323	0.299
	(0.509)	(0.516)	(0.518)	(0.482)	(0.487)	(0.487)
Defl. Prob.	-0.415	-1.633***	-1.735***			
	(0.360)	(0.381)	(0.395)			
Defl. Prob. × Post 2021	-3.244***	-2.637***	-2.522***			
	(0.550)	(0.555)	(0.555)			
Defl. Ind.				-1.059***	-1.845***	-1.907***
				(0.259)	(0.265)	(0.271)
Defl. Ind. × Post 2021				-2.691***	-2.131***	-2.044***
				(0.398)	(0.395)	(0.397)
Constant	5.638***	5.795***	5.819***	5.718***	5.767***	5.782***
	(0.185)	(0.192)	(0.196)	(0.176)	(0.178)	(0.180)
Demographics FE	N	Y	Y	N	Y	Y
State FE	N	N	Y	N	N	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	165,063	162,943	162,544	167,093	164,923	164,521

Table B.15: Perceived Deflation Risk and Economic Expectations: Removing Internally Inconsistent Deflation Responses

This table reports results from panel regressions of variables capturing consumers' economic expectations on their three-year deflation expectations, repeating the analysis from Table 2 after removing internally inconsistent responses on deflation expectations. Responses are considered as internally inconsistent if the respondent reports that they expect deflation (inflation) but reports a non-negative (negative) inflation point estimate or does not assign any positive probability to any of the deflation (inflation) brackets. The economic expectations variables are the expected change in employment, the expected job insecurity, the expected change in household income, employment-based earnings, and spending, and the perceived chance that the stock market will increase as well as the expected change in home prices. We include demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

Panel A: Deflation Probability

	(1) Unempl.	(2) Job Insec.	(3) Earnings	(4) Income	(5) Spending	(6) Stocks	(7) Homes
Post 2021	4.536***	-1.604***	-13.64	-9.994	3.148***	-3.378***	0.556**
	(0.723)	(0.399)	(13.828)	(9.539)	(0.425)	(0.510)	(0.238)
Defl. Prob.	-1.049*	0.973**	-31.01	-20.27	-1.534*	0.116	-2.441***
	(0.600)	(0.488)	(33.329)	(21.120)	(0.805)	(0.484)	(0.293)
Post 2021 × Defl. Prob.	-6.155***	-3.411***	29.03	19.83	-0.140	-2.186**	-4.976***
	(1.053)	(0.839)	(30.772)	(19.058)	(0.905)	(0.850)	(0.578)
Constant	37.48***	14.29***	20.17	16.79	4.719***	43.03***	5.759***
	(0.304)	(0.203)	(16.104)	(10.784)	(0.343)	(0.263)	(0.096)
Demographics FE	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y	Y	Y
Number of Observations	159,596	95,673	108,469	159,697	159,774	159,049	139,727

Panel B: Deflation Indicator

	(1) Unempl.	(2) Job Insec.	(3) Earnings	(4) Income	(5) Spending	(6) Stocks	(7) Homes
Post 2021	3.855***	-1.840***	-10.40	-7.852	3.169***	-3.729***	0.457**
	(0.675)	(0.361)	(10.477)	(7.395)	(0.372)	(0.474)	(0.227)
Defl. Ind.	-1.326***	0.0228	-14.56	-9.863	-1.326**	-0.438	-2.996***
	(0.486)	(0.388)	(15.688)	(10.031)	(0.544)	(0.391)	(0.257)
Defl. Ind. × Post 2021	-3.160***	-1.927***	12.86	9.495	0.0140	-0.535	-3.641***
	(0.769)	(0.589)	(13.939)	(8.613)	(0.658)	(0.620)	(0.446)
Constant	37.47***	14.43***	16.86	14.58*	4.627***	43.04***	5.714***
	(0.304)	(0.195)	(12.551)	(8.475)	(0.277)	(0.254)	(0.090)
Demographics FE	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y	Y	Y
Number of Observations	161,596	96,444	109,342	161,662	161,744	161,030	141,150

Table B.16: Perceived Deflation Risk and Economic Expectations: Removing Extreme Responses on Economic Expectations

This table reports results from panel regressions of variables capturing consumers' economic expectations on their three-year deflation expectations, repeating the analysis from Table 2 after removing extreme responses on economic expectations. A response for one the economic expectations variables is considered as extreme if it lies outside the range between the 10% and 90% quantile of responses for the same variable in our full sample. The economic expectations variables are the expected change in employment, the expected job insecurity, the expected change in household income, employment-based earnings, and spending, and the perceived chance that the stock market will increase as well as the expected change in home prices. We include demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

Panel A: Deflation Probability

	(1) Unempl.	(2) Job Insec.	(3) Earnings	(4) Income	(5) Spending	(6) Stocks	(7) Homes
Post 2021	2.631***	-0.463**	0.465***	0.544***	1.785***	-2.319***	0.283**
	(0.439)	(0.217)	(0.050)	(0.063)	(0.125)	(0.365)	(0.113)
Defl. Prob.	0.0300	0.246	0.394***	0.535***	-0.431***	0.0395	-1.104***
	(0.339)	(0.239)	(0.060)	(0.069)	(0.088)	(0.326)	(0.091)
Defl. Prob. × Post 2021	-4.052***	-2.029***	-0.279***	-0.0987	-0.345**	-1.788***	-1.029***
	(0.623)	(0.404)	(0.106)	(0.118)	(0.167)	(0.619)	(0.189)
Constant	36.61***	8.654***	3.106***	3.592***	4.271***	41.59***	5.090***
	(0.209)	(0.107)	(0.026)	(0.029)	(0.061)	(0.148)	(0.054)
Demographics FE	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y	Y	Y
Number of Observations	132,907	87,770	96,235	131,358	131,611	132,758	118,204

Panel B: Deflation Indicator

	(1) Unempl.	(2) Job Insec.	(3) Earnings	(4) Income	(5) Spending	(6) Stocks	(7) Homes
Post 2021	2.373***	-0.581***	0.445***	0.548***	1.792***	-2.502***	0.306***
	(0.411)	(0.205)	(0.047)	(0.060)	(0.121)	(0.338)	(0.108)
Defl. Ind.	-0.611*	-0.455**	0.281***	0.337***	-0.245***	-1.028***	-0.861***
	(0.313)	(0.187)	(0.050)	(0.060)	(0.074)	(0.272)	(0.088)
Defl. Ind. × Post 2021	-2.444***	-0.953***	-0.218***	-0.147	-0.342***	-0.224	-0.945***
	(0.472)	(0.298)	(0.080)	(0.094)	(0.127)	(0.448)	(0.153)
Constant	36.68***	8.725***	3.135***	3.633***	4.235***	41.65***	5.024***
	(0.202)	(0.102)	(0.024)	(0.029)	(0.058)	(0.141)	(0.052)
Demographics FE	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y	Y	Y
Number of Observations	134,577	88,436	96,953	132,841	133,000	134,443	119,205

Table B.17: Political Orientation and Deflation Expectations

This table reports results from regressions of consumers' three-year deflation expectations on indicator variables for the political leaning of their state of residence. The states CA, CO, CT, DE, HI, IL, MA, MD, MN, NH, NJ, NM, NY, OR, RI, VT, VA, WA, and DC are classified as Democrat-leaning (Blue), and AK, AL, AR, IA, ID, IN, KS, KY, LA, MO, MS, MT, ND, NE, OK, SC, SD, TN, TX, UT, WV, and WY are classified as Republican-leaning (Red). AZ, FL, GA, ME, MI, NC, NV, OH, PA, and WI are classified as swing states (Purple). We also include a "Post 2021" indicator, which is one for all observations in January 2022 or later, and interact it with the political leaning indicators. Columns (1)–(3) present results from panel regressions in which the dependent variable is the perceived deflation probability, aggregated from all bins that represent less-than-zero inflation. Columns (4)–(6) present results from panel logit regressions in which the dependent variable is a binary indicator for expecting future deflation (1) or inflation (0) at a three-year horizon. We report results with and without including demographics and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

	(1) Defl. Prob.	(2) Defl. Prob.	(3) Defl. Prob.	(4) Defl. Ind.	(5) Defl. Ind.	(6) Defl. Ind.
Post 2021	0.110***	0.109***	0.109***	1.253***	1.267***	1.271***
	(0.010)	(0.010)	(0.010)	(0.074)	(0.075)	(0.075)
Blue state	-0.0134***	-0.00495	-0.00561	-0.152***	-0.0919**	-0.0956**
	(0.004)	(0.003)	(0.003)	(0.044)	(0.043)	(0.043)
Red state	0.00300	0.00371	0.00407	0.00707	0.0103	0.0122
	(0.004)	(0.004)	(0.004)	(0.048)	(0.048)	(0.048)
Blue state × Post 2021	-0.00530	-0.00536	-0.00522	0.0595	0.0518	0.0517
	(0.010)	(0.010)	(0.010)	(0.075)	(0.077)	(0.077)
Red state × Post 2021	-0.0200*	-0.0252**	-0.0257**	-0.186**	-0.230***	-0.232***
	(0.011)	(0.011)	(0.011)	(0.084)	(0.087)	(0.087)
Constant	0.159***	0.156***	0.156***	-2.095***	-1.445***	-1.513***
	(0.003)	(0.003)	(0.003)	(0.040)	(0.072)	(0.085)
Demographics FE	N	Y	Y	N	Y	Y
Employment FE	N	N	Y	N	N	Y
Number of Observations	164,721	162,674	162,674	166,822	164,717	164,717

Table B.18: Perceived Deflation Risk and Economic Expectations: Blue States

This table reports results from panel regressions of variables capturing consumers' economic expectations on their three-year deflation expectations, repeating the analysis from Table 2 only for respondents residing in Democrat-leaning (Blue) states. The states CA, CO, CT, DE, HI, IL, MA, MD, MN, NH, NJ, NM, NY, OR, RI, VT, VA, WA, and DC are classified as Democrat-leaning. The economic expectations variables are the expected change in employment, the expected job insecurity, the expected change in household income, employment-based earnings, and spending, and the perceived chance that the stock market will increase as well as the expected change in home prices. We include demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

Panel A: Deflation Probability

	(1) Unempl.	(2) Job Insec.	(3) Earnings	(4) Income	(5) Spending	(6) Stocks	(7) Homes
Post 2021	4.348***	-1.224**	-34.51	-23.53	3.034***	-3.201***	-0.500
	(0.872)	(0.591)	(34.663)	(23.541)	(0.414)	(0.705)	(0.327)
Defl. Prob.	-0.123	2.544***	-74.09	-49.12	-1.319**	-0.689	-2.681***
	(0.802)	(0.809)	(76.560)	(48.906)	(0.608)	(0.691)	(0.416)
Post 2021 × Defl. Prob.	-7.528***	-6.716***	84.08	54.34	-0.910	-0.780	-3.310***
	(1.464)	(1.194)	(85.477)	(52.664)	(0.880)	(1.303)	(0.669)
Constant	37.84***	14.95***	41.14	31.21	4.812***	44.30***	5.571***
	(0.390)	(0.293)	(36.828)	(25.003)	(0.300)	(0.322)	(0.116)
Demographics FE	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y	Y	Y
Number of Observations	66,420	40,101	45,828	66,436	66,476	66,166	58,255

Panel B: Deflation Indicator

	(1) Unempl.	(2) Job Insec.	(3) Earnings	(4) Income	(5) Spending	(6) Stocks	(7) Homes
Post 2021	3.824***	-1.783***	-27.02	-18.39	2.898***	-3.529***	-0.362
	(0.836)	(0.563)	(27.149)	(18.444)	(0.376)	(0.654)	(0.305)
Defl. Ind.	-0.953	0.187	-36.90	-23.95	-1.087**	-1.696***	-3.359***
	(0.687)	(0.652)	(37.674)	(24.384)	(0.418)	(0.536)	(0.371)
Defl. Ind. × Post 2021	-4.323***	-3.109***	44.58	28.10	-0.0373	1.290	-2.359***
	(1.111)	(0.945)	(45.249)	(27.161)	(0.631)	(0.919)	(0.555)
Constant	37.92***	15.30***	33.92	26.14	4.733***	44.31***	5.528***
	(0.384)	(0.284)	(29.331)	(20.032)	(0.259)	(0.302)	(0.112)
Demographics FE	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y	Y	Y
Number of Observations	67,198	40,387	46,168	67,193	67,234	66,934	58,790

Table B.19: Perceived Deflation Risk and Economic Expectations: Red States

This table reports results from panel regressions of variables capturing consumers' economic expectations on their three-year deflation expectations, repeating the analysis from Table 2 only for respondents residing in Republican-leaning (Red) states. The states AK, AL, AR, IA, ID, IN, KS, KY, LA, MO, MS, MT, ND, NE, OK, SC, SD, TN, TX, UT, WV, and WY are classified as Republican-leaning. The economic expectations variables are the expected change in employment, the expected job insecurity, the expected change in household income, employment-based earnings, and spending, and the perceived chance that the stock market will increase as well as the expected change in home prices. We include demographics, state, and employment-status fixed effects. Standard errors double-clustered by respondent and survey date are reported in parentheses.

Panel A: Deflation Probability

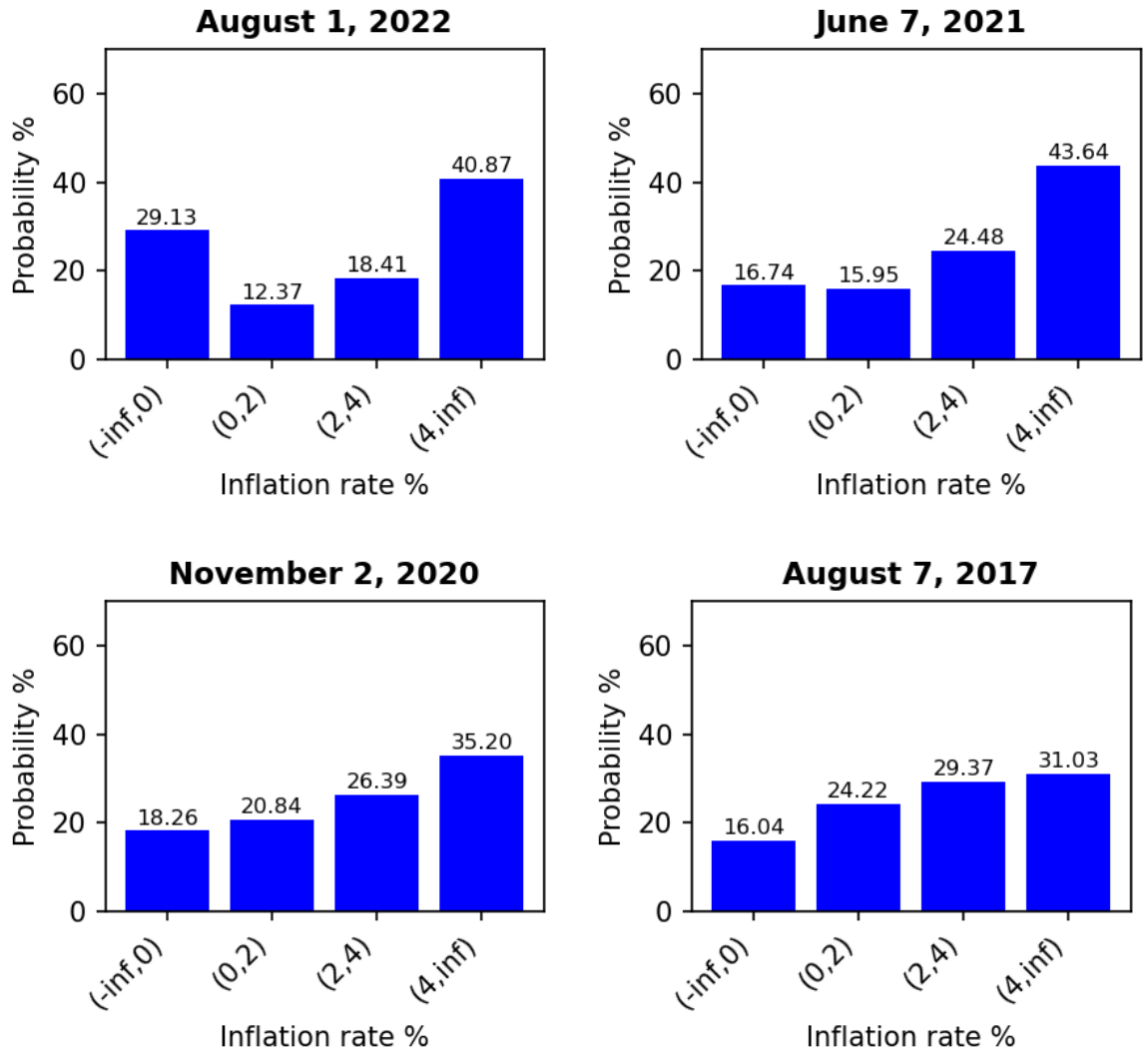
	(1) Unempl.	(2) Job Insec.	(3) Earnings	(4) Income	(5) Spending	(6) Stocks	(7) Homes
Post 2021	4.496***	-1.638**	-0.0844	-0.833	2.366*	-3.921***	1.531***
	(0.889)	(0.666)	(0.368)	(1.075)	(1.387)	(0.733)	(0.405)
Defl. Prob.	-1.421*	0.580	0.773	0.278	-4.700*	1.416	-2.116***
	(0.844)	(0.877)	(0.493)	(1.345)	(2.625)	(0.873)	(0.503)
Post 2021 × Defl. Prob.	-5.702***	-1.888	-0.800	0.996	3.312	-3.244**	-6.724***
	(1.515)	(1.563)	(0.796)	(1.484)	(2.793)	(1.443)	(0.981)
Constant	37.56***	13.55***	4.204***	5.891***	5.377***	41.75***	5.924***
	(0.430)	(0.349)	(0.209)	(1.133)	(1.144)	(0.404)	(0.191)
Demographics FE	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y	Y	Y
Number of Observations	44,575	27,014	30,496	44,617	44,628	44,506	38,823

Panel B: Deflation Indicator

	(1) Unempl.	(2) Job Insec.	(3) Earnings	(4) Income	(5) Spending	(6) Stocks	(7) Homes
Post 2021	3.957***	-1.495**	-0.217	-0.878	2.767**	-4.179***	1.452***
	(0.824)	(0.610)	(0.339)	(1.082)	(1.208)	(0.677)	(0.381)
Defl. Ind.	-1.500**	0.126	0.597	-0.786	-3.518*	-0.281	-2.834***
	(0.709)	(0.633)	(0.429)	(1.375)	(1.919)	(0.693)	(0.435)
Defl. Ind. × Post 2021	-3.155***	-2.050**	-0.402	1.586	1.949	-1.567	-5.160***
	(1.137)	(1.028)	(0.583)	(1.424)	(2.213)	(1.089)	(0.738)
Constant	37.51***	13.65***	4.266***	6.000***	5.026***	41.96***	5.919***
	(0.398)	(0.317)	(0.188)	(1.072)	(0.922)	(0.390)	(0.167)
Demographics FE	Y	Y	Y	Y	Y	Y	Y
State FE	Y	Y	Y	Y	Y	Y	Y
Employment FE	Y	Y	Y	Y	Y	Y	Y
Number of Observations	45,156	27,261	30,766	45,188	45,200	45,084	39,241

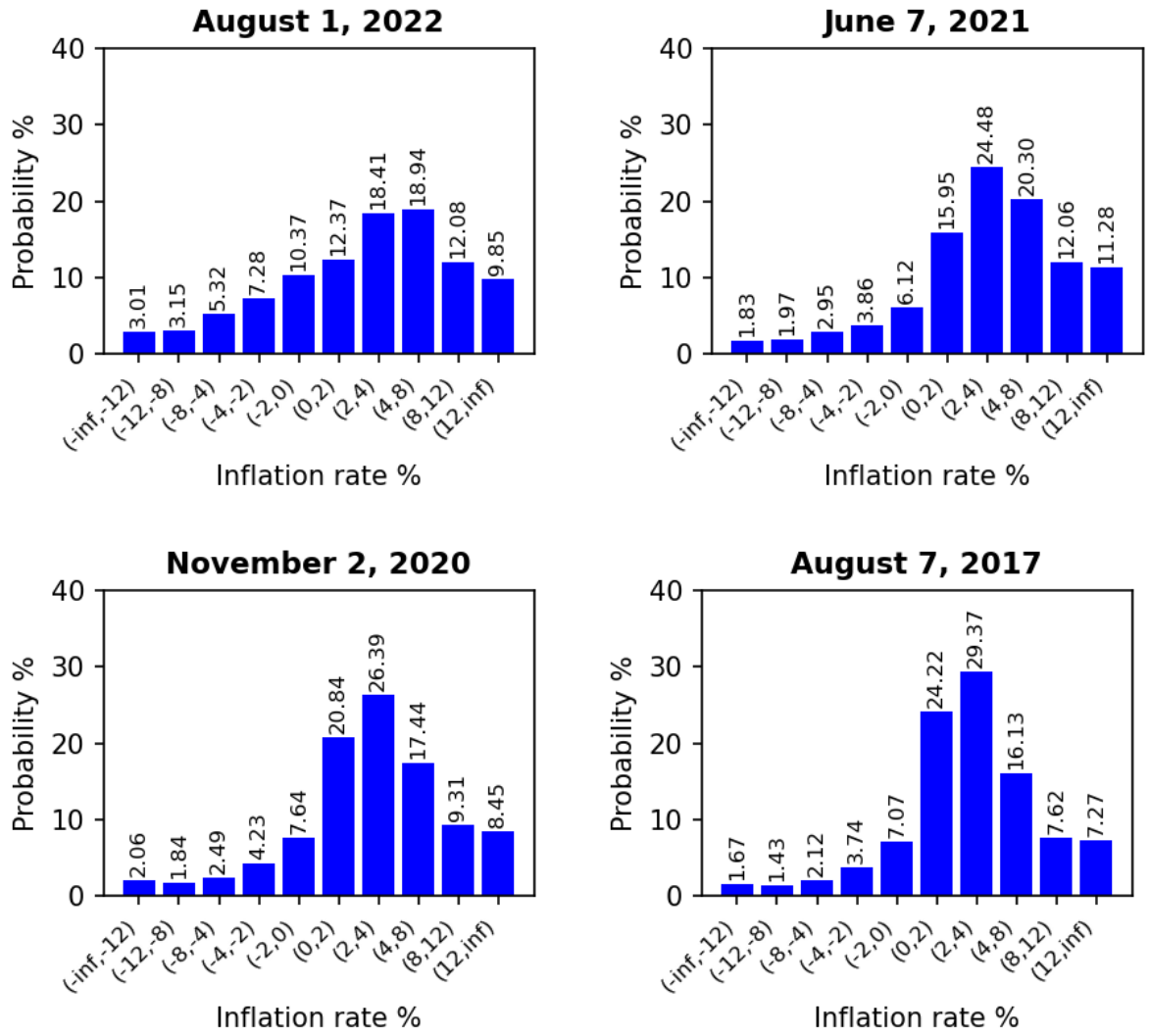
C Additional Figures

Figure C.1: Consumers' Perceived Probabilities of Deflation and Inflation



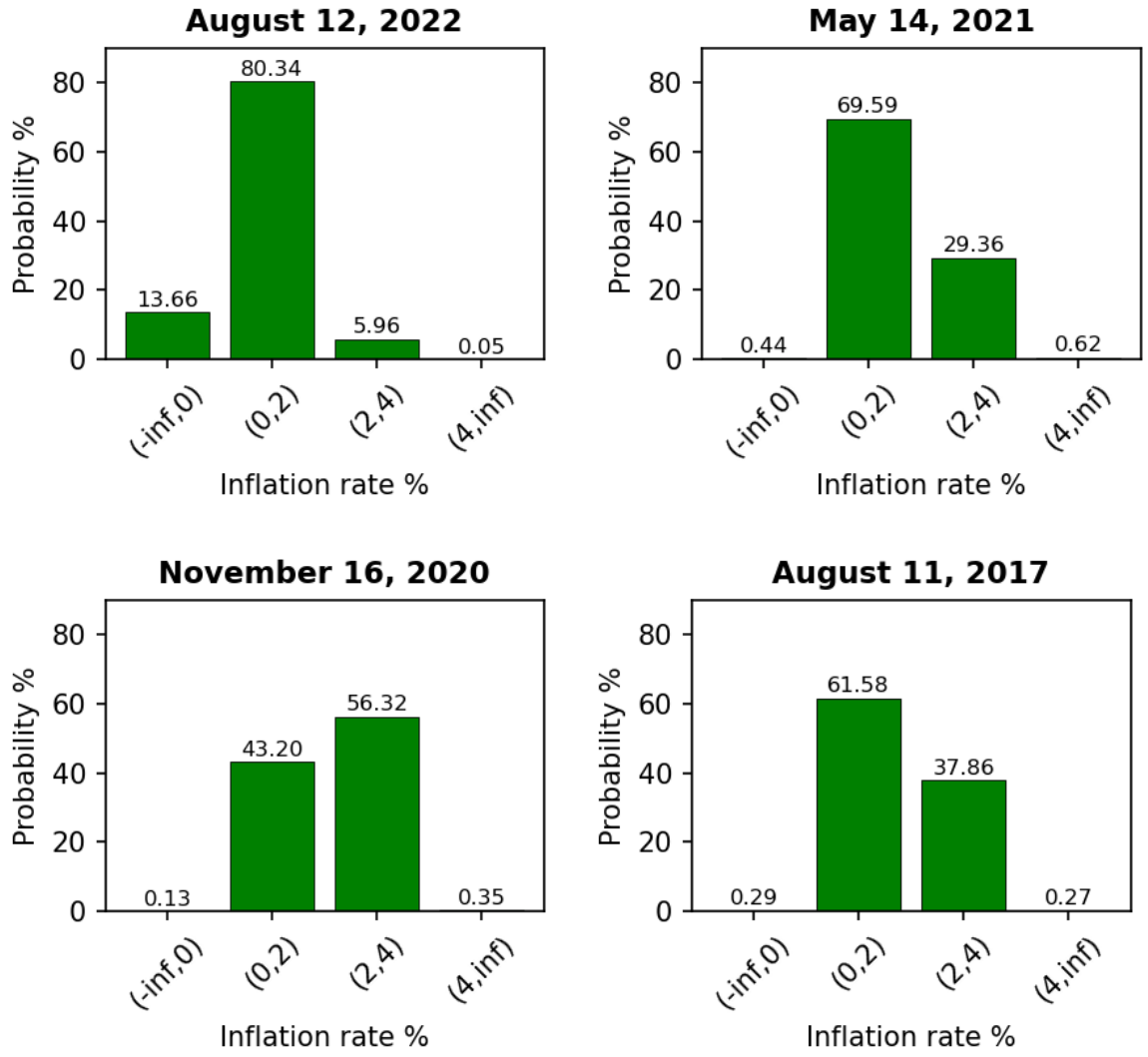
This figure plots consumers' perceived probability of different deflation or inflation outcomes for a three-year horizon. We average the probabilities assigned to different inflation scenarios at a given date across all respondents of the Survey of Consumer Expectations, and aggregate them to the given bins. In the survey, each respondent assigns subjective probabilities of future inflation scenarios to the bins $(-\infty,-12)$, $(-12,-8)$, $(-8,-4)$, $(-4,-2)$, $(-2,0)$, $(0,2)$, $(2,4)$, $(4,8)$, $(8,12)$, and $(12,\infty)$ percent.

Figure C.2: Consumers' Perceived Probabilities of Deflation and Inflation: Detailed



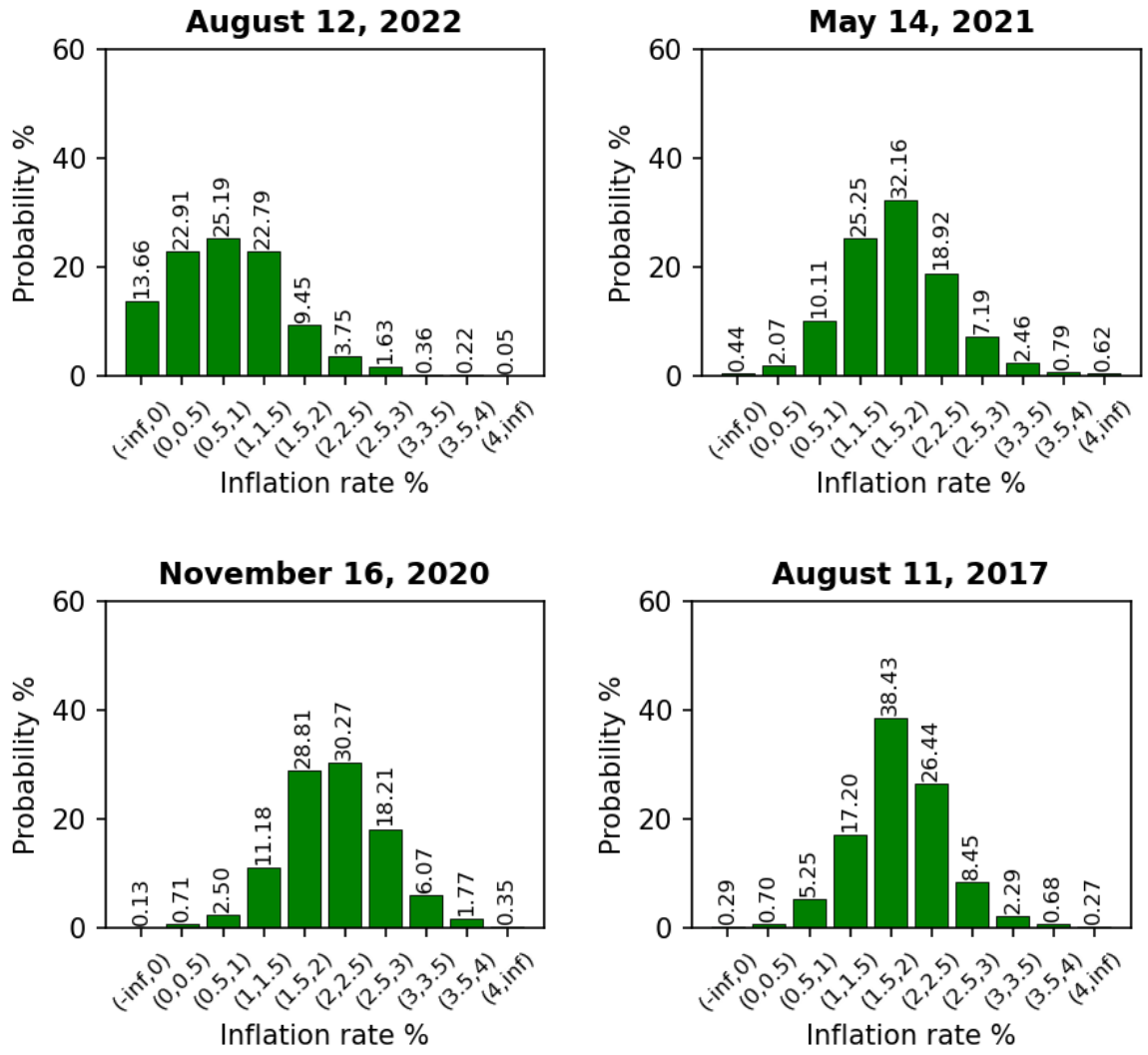
This figure plots consumers' perceived probability of different deflation or inflation outcomes for a three-year horizon. We average the probabilities assigned to different inflation scenarios at a given date across all respondents of the Survey of Consumer Expectations. In the survey, each respondent assigns subjective probabilities of future inflation scenarios to the bins $(-\infty,-12)$, $(-12,-8)$, $(-8,-4)$, $(-4,-2)$, $(-2,0)$, $(0,2)$, $(2,4)$, $(4,8)$, $(8,12)$, and $(12,\infty)$ percent.

Figure C.3: Professional Forecasters' Perceived Probabilities of Deflation and Inflation



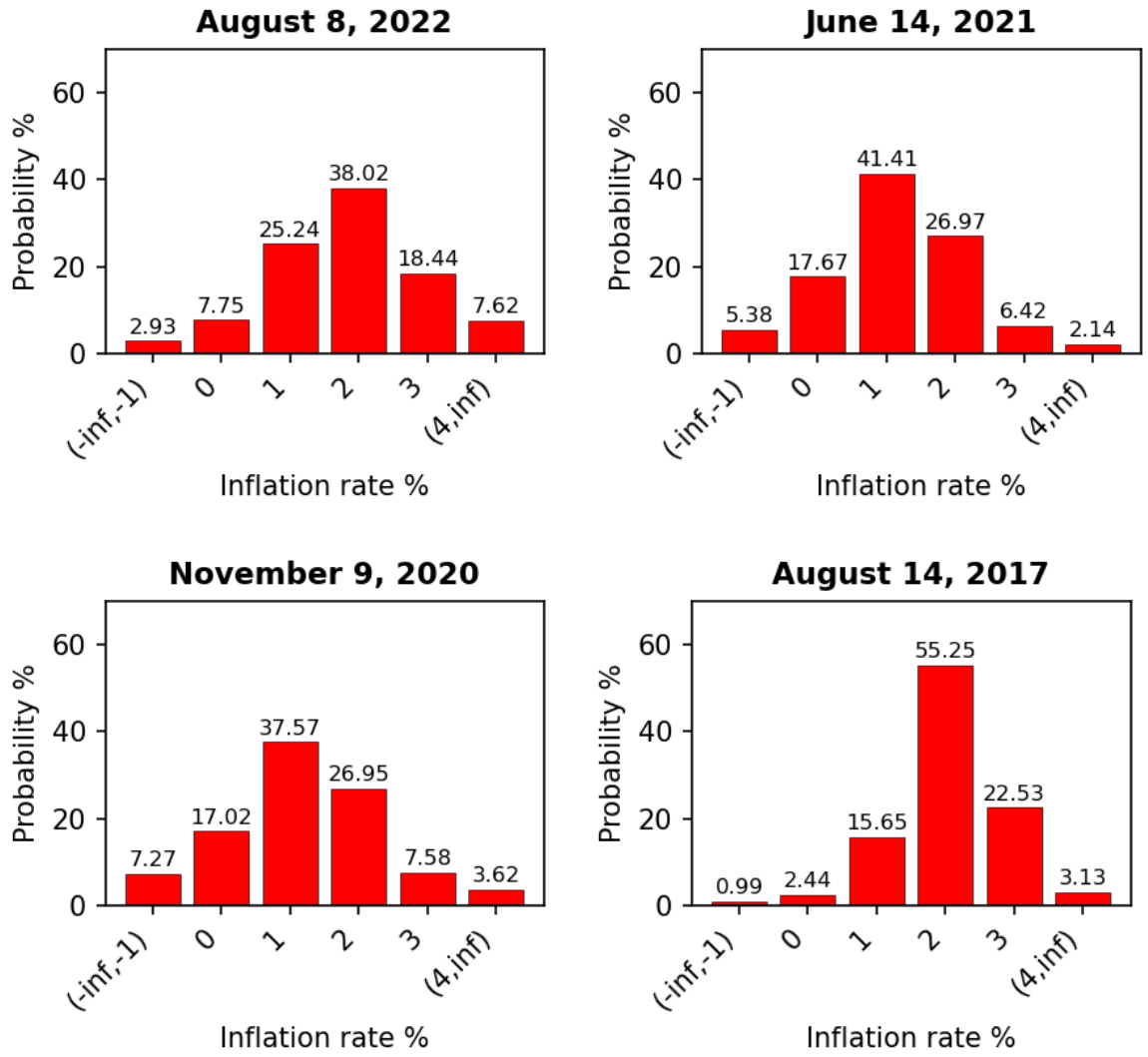
This figure plots professional forecasters' perceived probability of different deflation or inflation outcomes for a two-year horizon. We average the probabilities assigned to different inflation scenarios at a given date across all respondents of the Survey of Professional Forecasters, and aggregate them to the given bins. In the survey, each respondent assigns subjective probabilities of future inflation scenarios to the bins $(-\infty,0)$, (0,0.5), (0.5,1), (1,1.5), (1.5,2), (2,2.5), (2.5,3), (3,3.5), (3.5,4), and $(4,\infty)$ percent.

Figure C.4: Professional Forecasters' Perceived Probabilities of Deflation and Inflation: Detailed



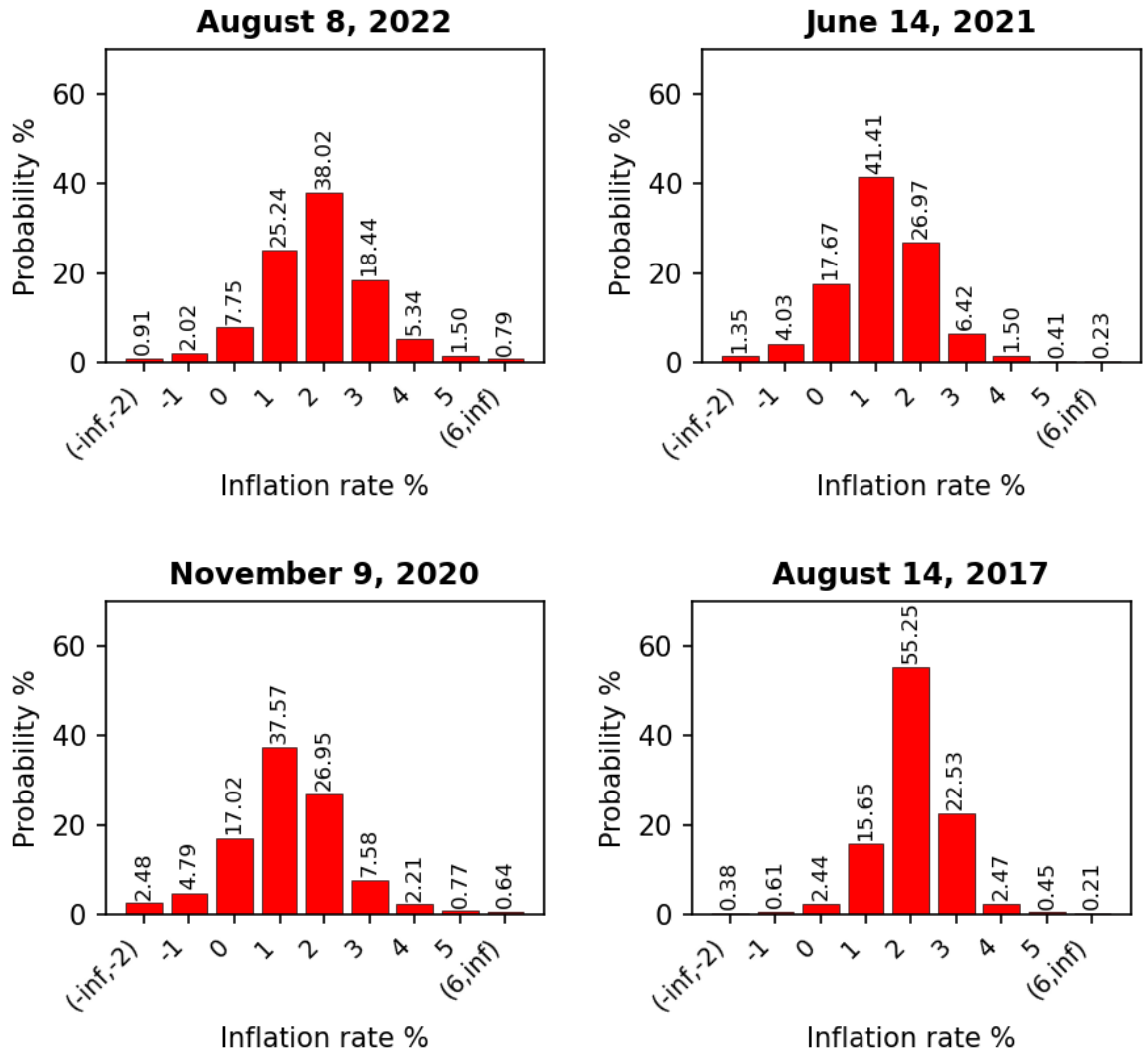
This figure plots professional forecasters' perceived probability of different deflation or inflation outcomes for a two-year horizon. We average the probabilities assigned to different inflation scenarios at a given date across all respondents of the Survey of Professional Forecasters. In the survey, each respondent assigns subjective probabilities of future inflation scenarios to the bins $(-\infty,0)$, (0,0.5), (0.5,1), (1,1.5), (1.5,2), (2,2.5), (2.5,3), (3,3.5), (3.5,4), and $(4,\infty)$ percent.

Figure C.5: Option Traders' Perceived Probabilities of Deflation and Inflation



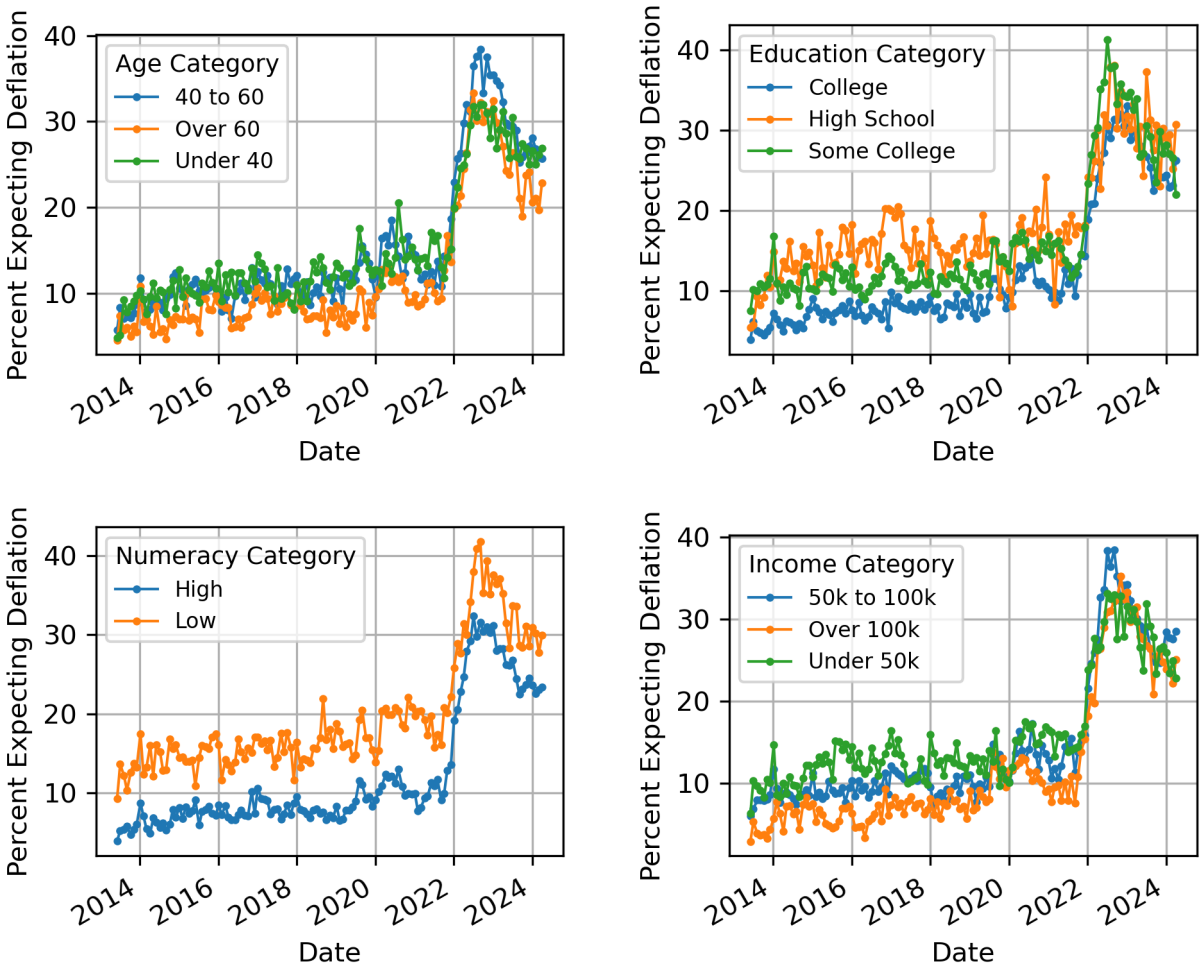
This figure plots option-implied risk-neutral probabilities of different deflation or inflation outcomes for a three-year horizon. The probabilities were computed based on zero-coupon inflation caps and floors using the Breeden and Litzenberger (1978) method, which attributes the implied probabilities to full-integer inflation rates. We compute the market-implied probabilities for scenarios of $(-\infty, -2)$, -1, 0, 1, 2, 3, 4, 5 and $(6, \infty)$ percent inflation, and aggregate them to the given bins.

Figure C.6: Option Traders' Perceived Probabilities of Deflation and Inflation: Detailed



This figure plots option-implied risk-neutral probabilities of different deflation or inflation outcomes for a three-year horizon. The probabilities were computed based on zero-coupon inflation caps and floors using the Breeden and Litzenberger (1978) method, which attributes the implied probabilities to full-integer inflation rates. We compute the market-implied probabilities for scenarios of $(-\infty, -2)$, -1, 0, 1, 2, 3, 4, 5 and $(6, \infty)$ percent inflation.

Figure C.7: Consumers' Deflation Expectations Across Demographic Groups



This figure plots the percentage of consumers who expect a future deflation scenario for different demographic groups by age, education, numeracy, and income. For each demographic group, we calculate the percentage of respondents of the Survey of Consumer Expectations indicating that they expect a deflation for a three-year horizon, when being asked whether they expect inflation or deflation.