PIIE PETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS

POLICY BRIEF

24-3 The Influence of Gasoline and Food Prices on Consumer Expectations and Attitudes in the COVID Era

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INTRODUCTION

Food and gasoline are high-frequency consumption items that compose a substantial share of budgets for most families. On average, consumers spend over 10 percent of their disposable personal income on food, with lower-income consumers spending as much as one-third of their budgets (USDA ERS 2022). Aggregate gasoline expenditure shares vary across time, typically ranging between 1.5 and 5.5 percent of disposable personal income since 1974 (EIA 2022). Like food, household expenditure shares for gasoline fall with income.[1]

Food and gasoline prices are extremely salient to consumers; they regularly purchase these goods, and their prices are highly visible. In particular, gasoline prices are visible outdoors even to those who do not pump gasoline or drive cars. Over the past two years, numerous media stories have explored the influence of gasoline prices on consumer attitudes. One 2022 piece in the *New York Times* noted that "gasoline, distinct from other things we buy, wields real power over how Americans think about their personal circumstances, the wider economy and even the state of the nation."[2] The shared experience of purchasing food and gasoline makes it no surprise that those prices have been blamed for the relatively dismal consumer views of the economy in 2023 amid strong economic indicators,

1 See, for example, Glaeser et al. (2023) and Chernick and Reschovsky (1997).

2 Emily Badger and Eve Washington, "Why the Price of Gas Has Such Power over Us," *New York Times*, October 25, 2022.

including slowing inflation, low unemployment, and robust growth. At the same time, consumer inflation expectations have eased during this past year.

This Policy Brief investigates the role food and gasoline prices play in influencing consumer inflation expectations and economic sentiment, as measured on the University of Michigan Surveys of Consumers, and focuses on the COVID inflationary episode. Understanding how realized inflation from gasoline, food, and core goods drives consumer attitudes is important for several reasons. First, the determinants of inflation expectations are of interest to policymakers focused on controlling inflation and ensuring the anchoring of expectations. Furthermore, economic sentiment factors into consumer behavior, including spending decisions, which affect the trajectory of the macroeconomy. Finally, survey data reveal the costs of realized inflation on consumers, or at least how consumers experience those costs, even in an environment where other economic indicators appear relatively strong.

Ultimately, although consumer sentiment now appears to be more sensitive to inflation than prior to the pandemic, inflation expectations do not. Even as inflation has waned, consumers continue to spontaneously comment on the negative impact of high prices on their lives. That said, these persistently negative perceptions about inflation have not translated into persistently high inflation expectations. Even as high prices, particularly gasoline and food, continue to weigh on consumers' experiences in the economy in a way that appears unique, inflation expectations have eased through the end of 2023 in ways that are consistent with the slowdown in realized inflation.

GASOLINE AND FOOD PRICES, EXPECTATIONS, AND SENTIMENT BEFORE AND AFTER 2020

Founded in 1946, the Surveys of Consumers at the University of Michigan have collected a rich set of data on the economic attitudes and expectations of Americans and are used widely by economic researchers, policymakers, and forecasters. Monthly data releases began in 1978 and are based on representative samples of consumers in the coterminous United States.[3]

The most-cited measures on the Surveys of Consumers include the Index of Consumer Sentiment and inflation expectations. The sentiment index is based on five questions on current assessments and expectations of personal finances; buying conditions for large durable goods; and business conditions. Inflation expectations are elicited for both short- and long-run horizons using the following questions:

1. "During the next 12 months, do you think that prices in general will go up, or go down, or stay where they are now?"
2. "By about what percent do you expect prices to go (up/down) on the average, during the next 12 months?"
3. "What about the outlook for prices over the next 5 to 10 years? Do you think prices will be higher, about the same, or lower, 5 to 10 years from now?"
4. "By about what percent per year do you expect prices to go (up/down) on the average, during the next 5 to 10 years?"

3 More information about the Surveys of Consumers can be found at https://data.sca.isr.umich.edu/.

In figure 1, the left panels plot the historical time series of inflation expectations and sentiment over the last 45 years, and the right panels zoom in on the 3 years before and following the start of the COVID pandemic in March 2020.

Similarly, the left panels of figure 2 display the evolution of core, food, and gasoline inflation over the last several decades, expressed as year-over-year percentage changes in monthly readings. The right panels of figure 2 focus on 2017–23.

Even at its peak during this period, at 6.6 percent year over year in September 2022, core inflation did not come close to the double-digit inflation of the 1970s and 1980s. In contrast, the more highly volatile prices of food and gasoline reached inflation rates comparable to the early 1980s.

Gasoline prices are unique on one key dimension: They frequently decline. Since 1960 about one-third of monthly gasoline consumer price index (CPI) readings exhibit year-over-year deflation. In contrast, food CPI exhibits deflation in about 2 percent of months, and core CPI never declines. As such, the two highly volatile categories of food and gasoline may play separate roles in informing the views of consumers.

When the pandemic began in the United States in March 2020, food inflation rose while core and gasoline inflation dipped. Inflation expectations bumped up at that time (see figure 1, top and middle right panels). Consumers appeared to perceive this initial rise in inflation to be a temporary result of extenuating circumstances; short- and long-run inflation expectations both eased by the end of 2020.

Starting in early 2021, however, year-ahead inflation expectations began a precipitous climb that peaked in the late spring and early summer of 2022. Long-run expectations rose modestly but remained remarkably stable through much of the COVID era. Long-run expectations fell between the narrow range of 2.9 to 3.1 percent for all but four months between August 2021 and December 2023 and ultimately remained elevated relative to the 2.2 to 2.6 percent range seen during the two years prepandemic.

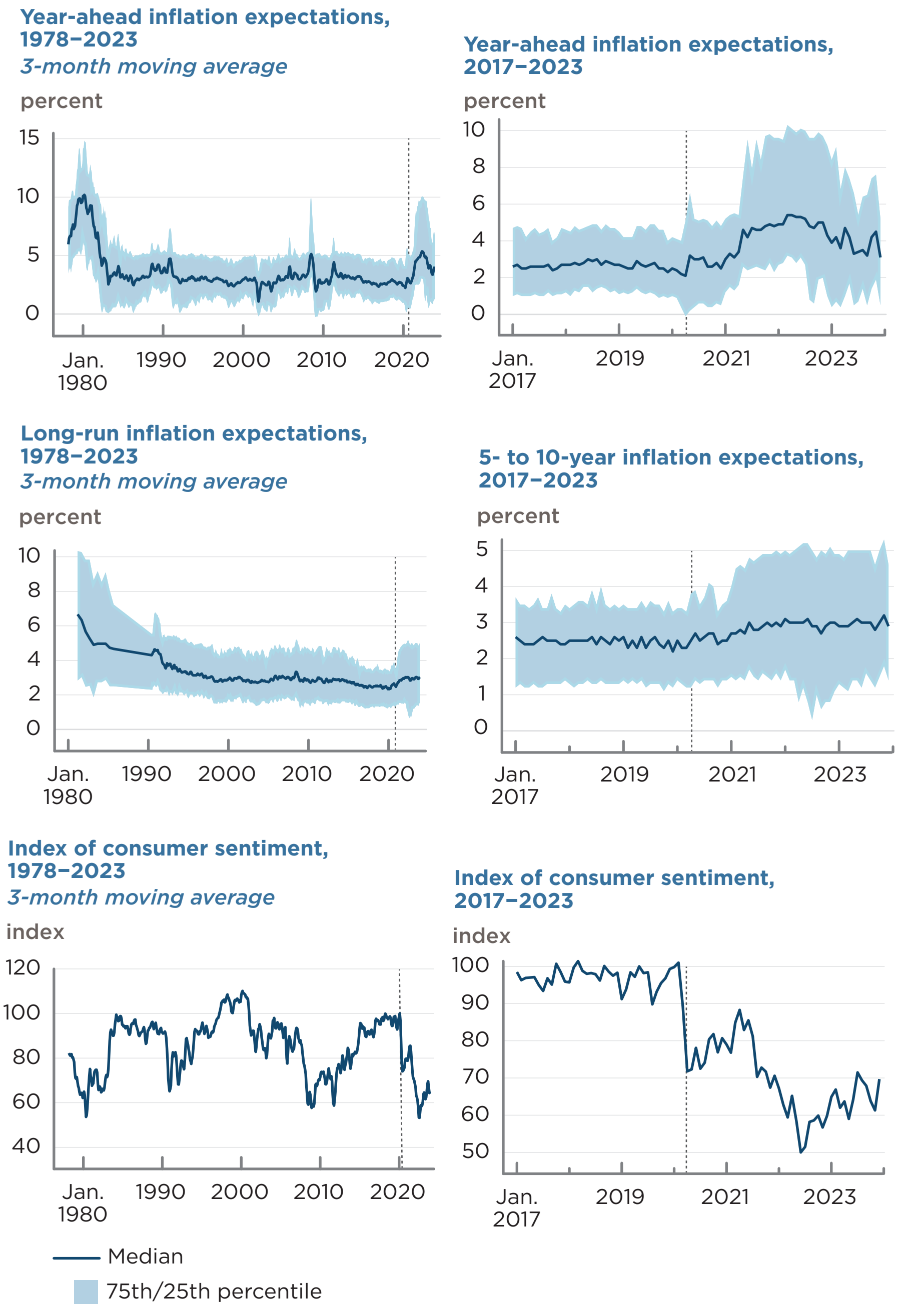
For both short- and long-run expectations, the interquartile range (visible on the top and middle panels of figure 1 as the blue shaded areas), which measures the dispersion of inflation expectations and is often taken as a proxy for inflation uncertainty, grew sharply through 2022 and reached levels not seen since the early 1980s. For short-run expectations, this was primarily driven by an increase in the share of consumers expecting high inflation. In contrast, a growing share of consumers began expecting very low inflation, or even perhaps deflation in the long run. The rise in uncertainty is unsurprising given the robust debates over the past two years among economists, policymakers, and pundits on the nature and expected duration of the inflationary episode. Increased uncertainty could reflect (or cause) greater unease about inflation or the economy.

Did inflation expectations co-move with core, food, or gasoline inflation in the COVID era?

Past research suggests that food and gasoline prices could be highly influential for consumers' inflation expectations. For example, Coibion and Gorodnichenko (2015) find that the increase in consumer inflation expectations, as measured

Figure 1

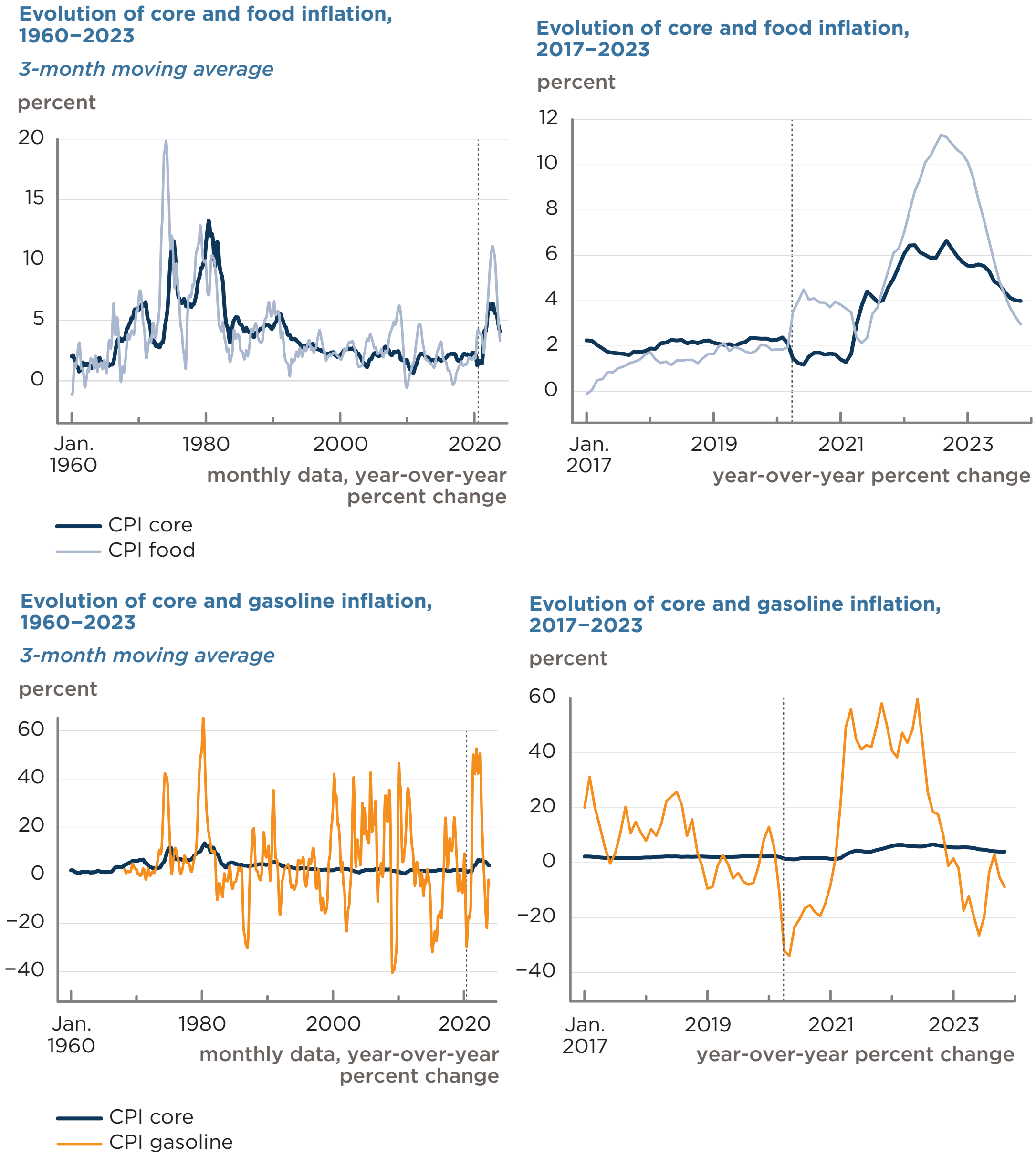
Evolution of short- and long-run inflation expectations and consumer sentiment



Source: Data are from University of Michigan, Survey Research Center, Surveys of Consumers.

by the University of Michigan Surveys of Consumers, relative to expectations of professional forecasters between 2009 and 2011, can be explained by the concurrent increase in oil prices. In a set of survey experiments conducted in 2012 and 2013, Cavallo, Cruces, and Perez-Truglia (2017) find that "even when information about inflation statistics is available, individuals still place a significant weight on inaccurate sources of information, such as their memories

Figure 2
Evolution of core, food, and gasoline CPI prices

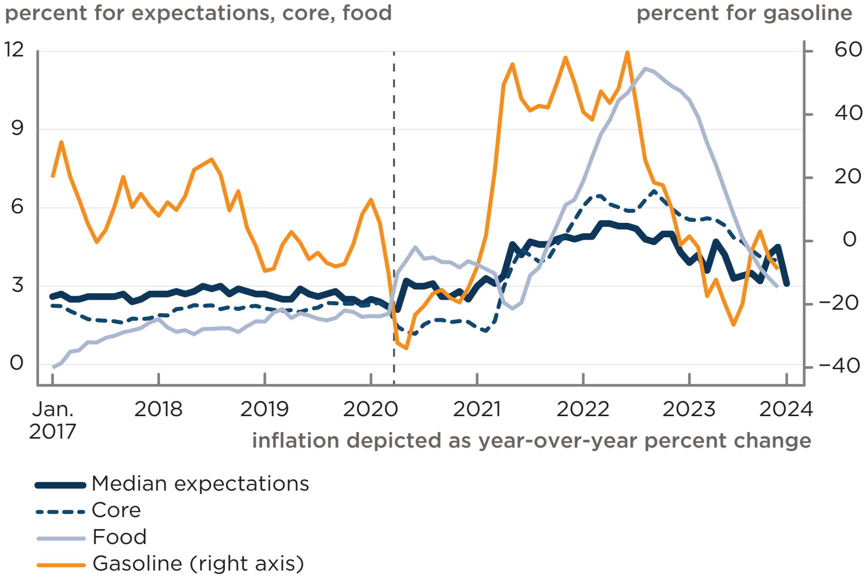


CPI = consumer price index
Sources: Data are from University of Michigan, Survey Research Center, Surveys of Consumers; US Bureau of Labor Statistics.

of the price changes of the supermarket products they purchase." Bruine de Bruin, van der Klaauw, and Topa (2011) compared the inflation expectations of individuals who were first prompted to recall specific price changes to the expectations to those who were not. For individuals who recalled specific prices, inflation expectations were "more extreme and more disagreeing . . . because they were biased towards various items associated with more extreme perceived price changes." In general, studies such as these have analyzed low-inflation periods that differ greatly from the COVID era.

Figure 3
Short-run inflation expectations and realized inflation both rose sharply in late 2021

Year-ahead inflation expectations and realized CPI inflation, 2017–2023



CPI = consumer price index.
Sources: Data are from University of Michigan, Survey Research Center, Surveys of Consumers; US Bureau of Labor Statistics.

The Surveys of Consumers elicit inflation expectations without providing any statistics about current inflation or prompting participants to consider specific price changes. Still, during high-inflation episodes, consumers may be particularly sensitive to price changes of familiar goods like gasoline and food when forming their expectations.

Figure 3 plots year-ahead inflation expectations and realized inflation—core, food, and gasoline prices—before and after the onset of the pandemic. Throughout this period, expectations closely matched core inflation patterns, with little of the volatility seen in gasoline prices. This can also be seen in a simple regression comparing the relationships between core, food, and gasoline inflation and short-run inflation expectations, shown in table 1. Between 1978 and 2023, a 1 percentage point increase in year-over-year gasoline inflation is associated with only a 0.02 percentage point increase in short-run inflation expectations. A 1 percentage point increase in food inflation is associated with a 0.19 percentage point rise in inflation expectations. In contrast, a 1 percentage point increase in core inflation is associated with a much larger 0.38 percentage point rise in short-run expectations and, interestingly, a 0.49 percentage point increase in long-run expectations. When restricting the analysis to the COVID era, expectations became even less sensitive to food and gasoline prices, with a more modest reduction in the still sizable influence of core inflation.

Although inflation expectations are relatively insensitive to food or gasoline prices, these patterns do not imply that consumers are completely unmoved by those prices. In fact, the sentiment index, which encompasses views of business conditions and personal finances (incorporating the impact of high prices or

Table 1
Regressions show that inflation expectations are more highly influenced by core inflation than by gasoline and food inflation, particularly in recent years

A 1 percentage point increase in...	Is associated with a change in year-ahead inflation expectations of:		Is associated with a change in long-term inflation expectations of:		Is associated with a change in sentiment index of:	
	1978–2023	*2020–2023*	*1978–2023*	*2020–2023*	*1978–2023*	*2020–2023*
Gas inflation	0.02 pp	0.01 pp	–0.00 pp	–0.00 pp	–0.06	0.08
Food inflation	0.19 pp	0.06 pp	–0.10 pp	–0.02 pp	–1.82	–2.06
Core inflation	0.38 pp	0.27 pp	0.49 pp	0.12 pp	–0.73	–2.47

pp = percentage point
Sources: Data are from University of Michigan, Survey Research Center, Surveys of Consumers; US Bureau of Labor Statistics.

inflation) but does not include a direct measure of inflation expectations, is highly influenced by both food and core inflation. These patterns are visible in the last two columns of table 1.[4] These relationships strengthened even further since 2020, suggesting that the relatively dismal views of consumers in 2023 partly reflect greater sensitivity to and frustration with each incremental unit of inflation than the historical averages across previous periods. One possible reason for this sensitivity could be the fact that American consumers had become accustomed to the extended period of very low inflation preceding the COVID pandemic.

Consumers expressed specific concerns over food and gasoline prices without prompting

The Surveys of Consumers began tracking spontaneous mentions of food and gasoline prices in January 2021, displayed in figure 4. These mentions suggest that food or gasoline are prominent in the minds of those consumers. In early 2021 less than 10 percent of consumers mentioned food or gasoline, but rates began climbing soon thereafter. These mentions were overwhelmingly negative comments on the high prices of either good. Gasoline mentions peaked in June 2022 at nearly 50 percent of consumers, and food mentions reached their apex of 26 percent the next month.

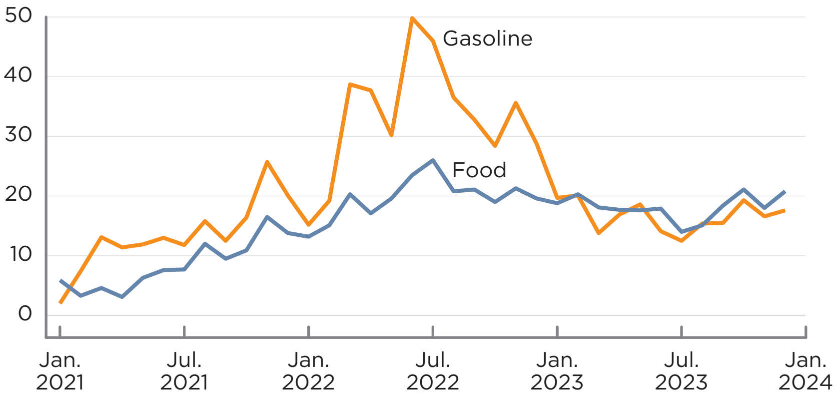
As seen in the bottom panel of figure 5, the rise in spontaneous food comments climbed between January 2021 and July 2022 and mirrored the increase in both food prices and inflation. Although food inflation slowed since then to rates seen at the beginning of the period, food price mentions remain quite elevated. In contrast, gasoline mentions (top panel of figure 5) were quite stable for much of 2021, then rose and fell closely with gasoline prices. Year-over-year gasoline inflation increased sharply in early 2021, but it was not until prices climbed sharply in early 2022 that gasoline mentions began to escalate in earnest. Given that gasoline prices exhibit both inflation and deflation, it is unsurprising that consumers appear to be more affected by gasoline price levels than inflation rates.

4 The relationships do vary over time and across different inflationary or recessionary episodes, and the 1978–2023 regression averages across these episodes.

Figure 4
Spontaneous mentions of food and gasoline prices escalated in 2021 and peaked in mid-2022

Gasoline/food mentions, 2021–2023

percent of consumers mentioning



Source: Data are from University of Michigan, Survey Research Center, Surveys of Consumers.

Consumers expressing concerns about food or gasoline prices reported higher inflation expectations than other consumers (figure 6, top panels). On average each month between 2021 and 2023, consumers who mentioned food prices had year-ahead inflation expectations that were about 1.4 percentage points higher than those who did not. Those who mentioned gasoline prices had expectations that were 1.2 percentage points higher. For long-run inflation expectations, the wedges were 0.5 and 0.3 percentage points, respectively. Likewise, those who mentioned gasoline or food exhibited lower sentiment than those who did not (figure 6, bottom panels), showing that the views of those with gasoline and food price concerns have generally less favorable views toward the economy. As gasoline and food prices rise, a growing share of consumers report concerns as well as higher inflation expectations, worsening the population average or median.

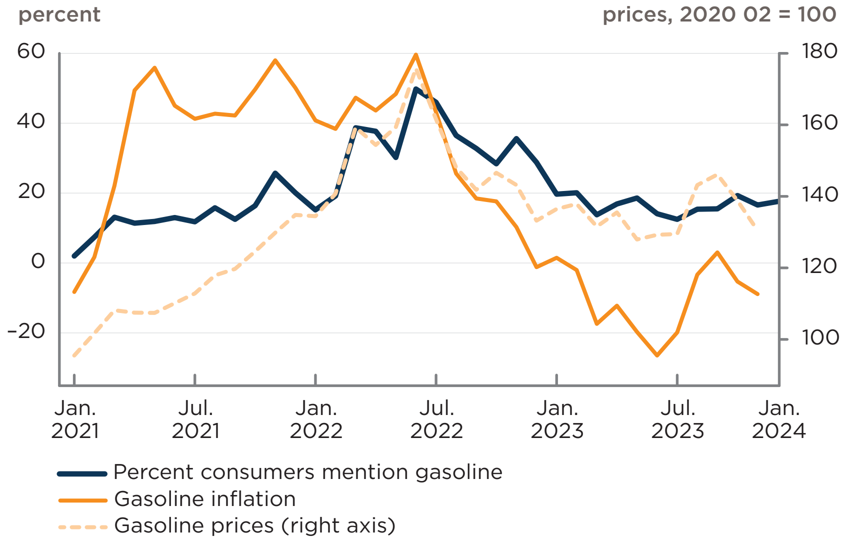
The frequency of food mentions varies across demographic groups; gasoline mentions are more balanced across groups

Figure 7 displays the shares of different demographic groups mentioning gasoline and food during the survey interview. Across all demographic groups, gasoline mentions are more common than food mentions. A possible reason is that within households with more than one adult, there may be a household division of labor in which one member may be responsible for most of the food shopping, whereas multiple members may drive or otherwise notice gasoline station prices in their daily lives. The patterns by gender—more women mentioning food than men, but both mentioning gasoline at similar rates—are also suggestive of this explanation. Consistent with established patterns of how lower-income consumers spend a larger share of their budgets on food than higher-income consumers, there is a strong negative income gradient for food mentions, from about 20 percent of those in the lowest income quintile

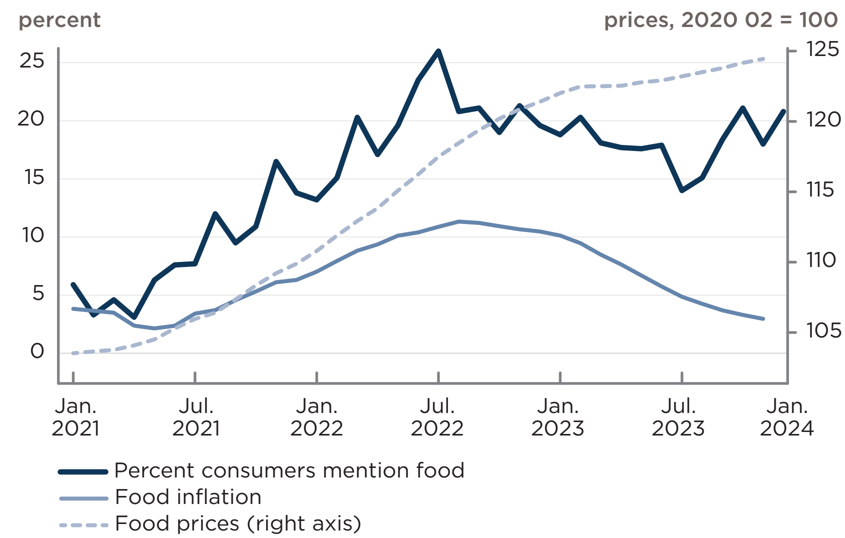
Figure 5

Gasoline mentions tracked the rise and fall of gasoline prices; food mentions followed food prices but leveled off as food inflation slowed

Gasoline mentions and realized prices, 2021–2023



Food mentions and realized prices, 2021–2023



Sources: Data are from University of Michigan, Survey Research Center, Surveys of Consumers; US Bureau of Labor Statistics.

mentioning food declining to less than 10 percent in the highest quintile. Rates of gasoline mentions are similar in the first, second, and third quintiles at about 22 percent; a slightly smaller share of the top quintile, 18 percent, mentioned gasoline as well. Similar patterns are visible by education. About 15 percent of consumers under the age of 35 commented on gasoline; these comments increase with age and peak between 55 and 64, declining slightly thereafter, likely an effect of reduced driving during retirement years. Food concerns also rise continuously with age, even beyond age 65.

Figure 6

Consumers mentioning food or gasoline report higher inflation expectations and sentiment

Source: Data are from University of Michigan, Survey Research Center, Surveys of Consumers.

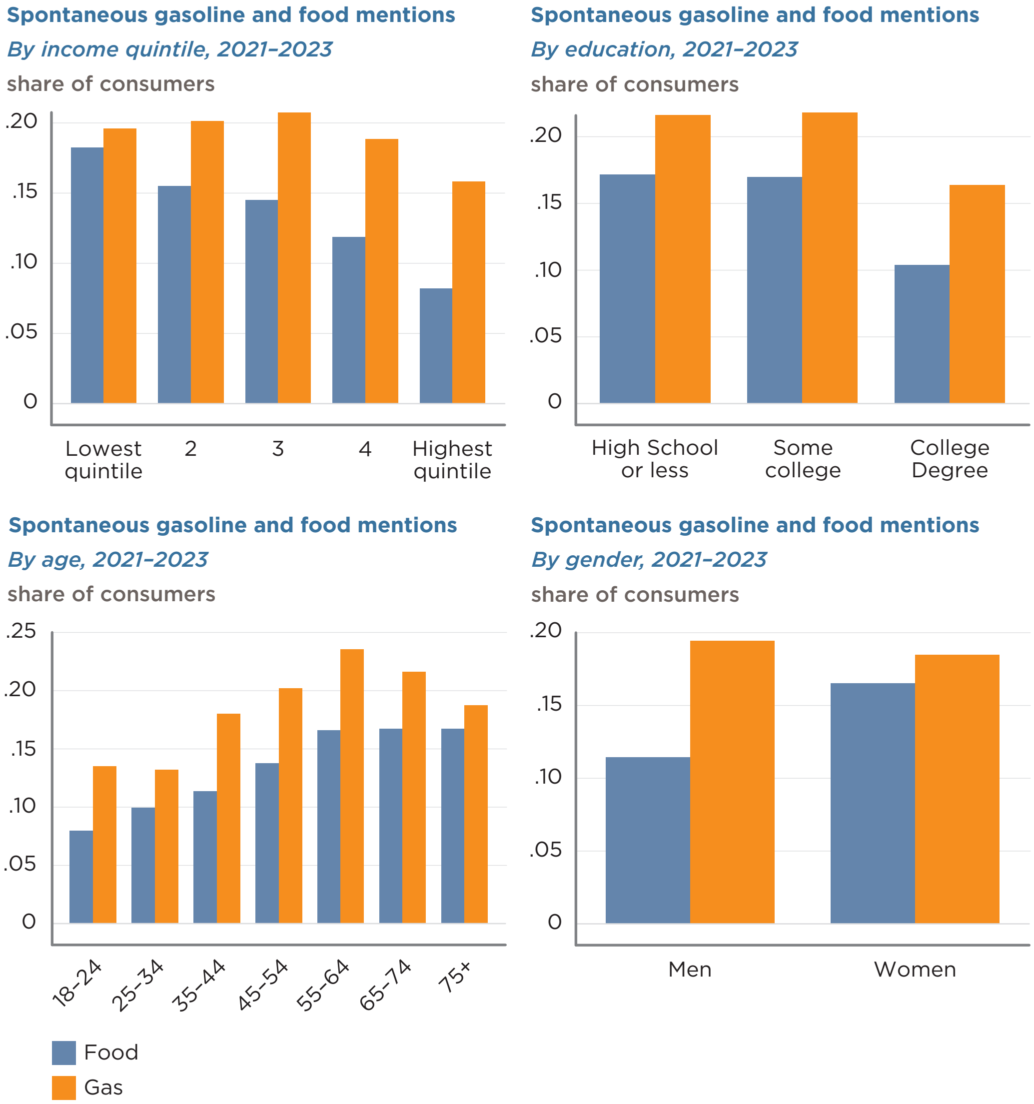
WHAT IS DIFFERENT ABOUT THE 2020S INFLATIONARY EPISODE?

High prices continued to weigh down consumers' perceptions of their personal finances and their sentiment even as inflation waned

CPI inflation fell from a peak of 8.9 percent year over year in June 2022 to 3.1 percent in November 2023, compared with 2.3 percent in February 2020 prior to the pandemic. Consumer sentiment, which reached a historic low in June 2022, lifted 39 percent by December 2023, supported by a slowdown in inflation. However, sentiment remained 37 percent below its February 2020 prepandemic reading. Concerns over high prices continued to weigh on consumers; as seen in the top panel of figure 8, food and gasoline comments were highly (negatively) correlated with sentiment (displayed on the reversed right axis). Sentiment has a very strong –0.92 correlation with gasoline mentions and a –0.76 correlation with food mentions. As such, these spontaneous comments show that food

Figure 7

Gasoline mentions are relatively balanced across demographic groups, but food mentions are more common among older consumers, lower-income consumers, less-educated consumers, and women



Source: Data are from University of Michigan, Survey Research Center, Surveys of Consumers.

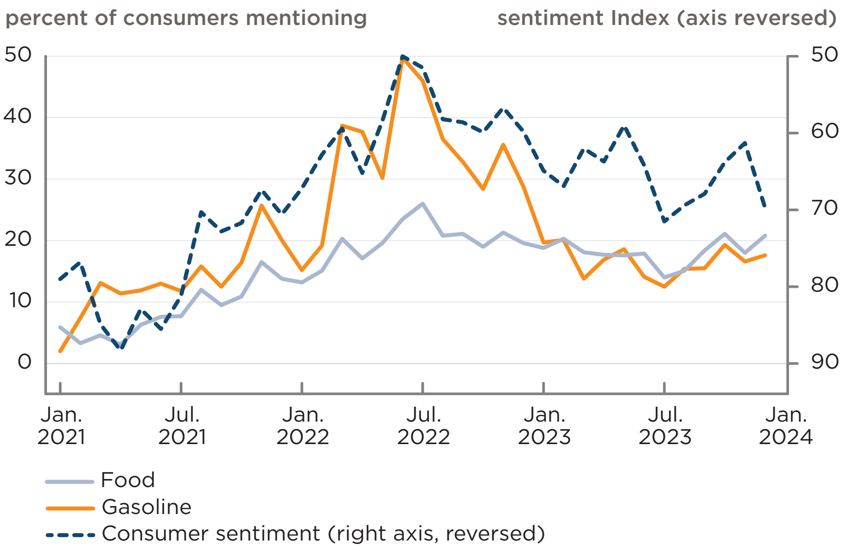
or gasoline prices weigh on those consumers in ways that affect their overall economic attitudes.

One key component of the Index of Consumer Sentiment is the current assessment of personal finances. Consumers are asked for reasons why they answered favorably or unfavorably about their personal finances; high price reasons have been tracked since 1947. Historically, high price reasons (which may include references to specific prices such as food or gasoline) for poor personal finances have broadly followed a similar path as year-ahead inflation expectations and realized CPI inflation (figure 9). But the inflationary episode of the 2020s differs from the historical averages: Concerns about high prices are at rates similar to the much more severe inflationary episodes of the late 1970s

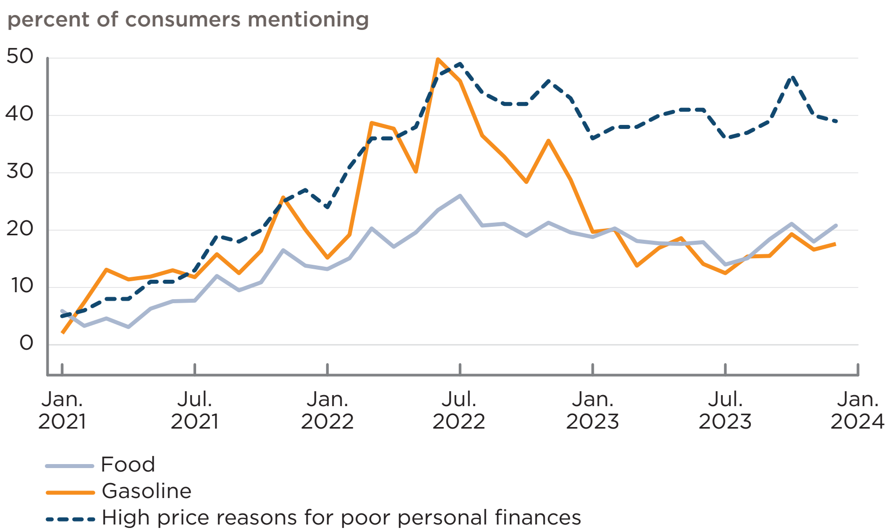
Figure 8

Sentiment and negative effects of prices on personal finances improved little, even as food and gasoline mentions declined

Gasoline/food mentions and sentiment, 2021–2023



Gasoline/food mentions and high price reasons for poor personal finances, 2021–2023



Source: Data are from University of Michigan, Survey Research Center, Surveys of Consumers.

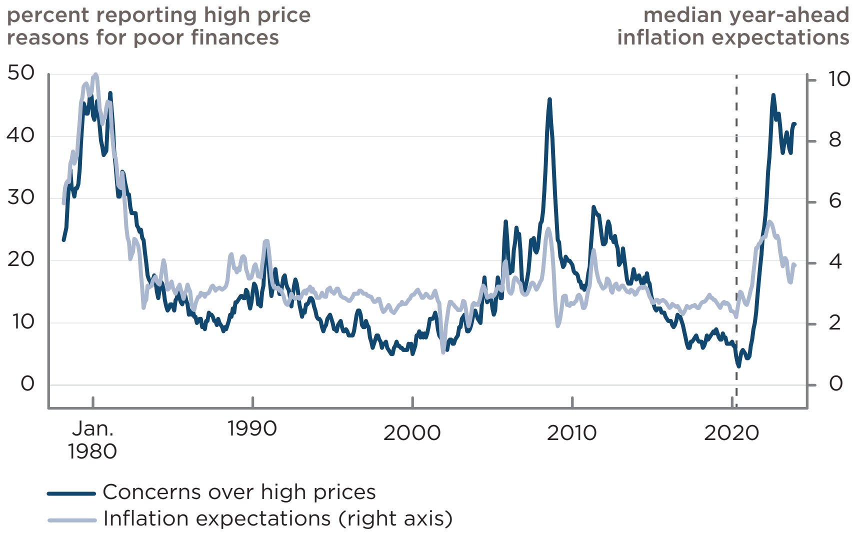
and early 1980s, and they have remained elevated in spite of inflation easing. The bottom panel of figure 9 shows that high price reasons for poor finances grew in frequency from 2021, reaching a peak in summer of 2022, coinciding with the peak of gasoline and food mentions.

Despite the reduction in gasoline and food mentions—as well the softening of realized gasoline, food, and core inflation since mid-2022—the share of consumers blaming high prices for poor finances has remained steady, as seen in figure 10. This pattern suggests that for a substantial part of the population, persistent high prices continue to weigh on their minds. In contrast, year-ahead

Figure 9
High price concerns continued rising in 2022 even as inflation expectations and realized CPI inflation both eased

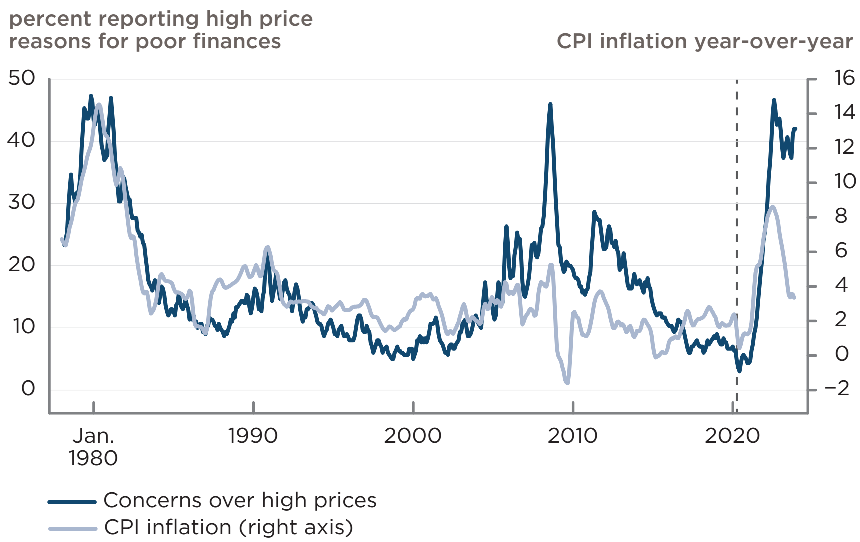
High price concerns and expectations 1978–2023

3-month moving average



High price concerns and CPI inflation 1978–2023

3-month moving average



CPI = consumer price index.
Sources: Data are from University of Michigan, Survey Research Center, Surveys of Consumers; US Bureau of Labor Statistics.

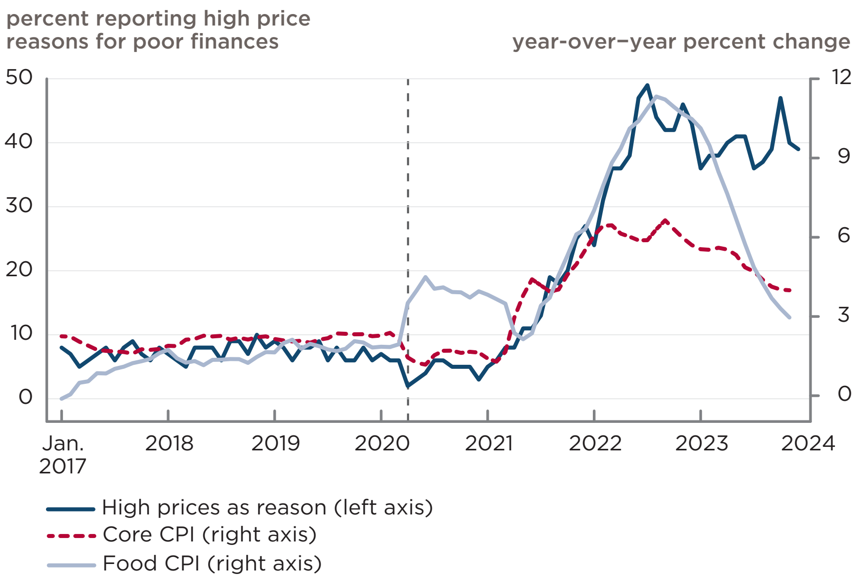
inflation expectations fell from 5.4 percent for March through June 2022 down to 3.5 percent for October through December 2023, modestly above the 2.5 to 3.0 percent range seen in the two years prior to the pandemic. The fact that high price complaints have remained high in 2023, even as consumers' inflation expectations have eased, shows that they are able to separate their own feelings about the impact of high prices on their lives from expectations about the future path of inflation.

Figure 10

High price concerns rose in step with gasoline prices, food inflation, and core inflation; concerns remained high, even as gasoline and core inflation softened

High price reasons for poor personal finances and gas inflation, 2017–2023

High price reasons for poor personal finances and inflation, 2017-2023



CPI = consumer price index.

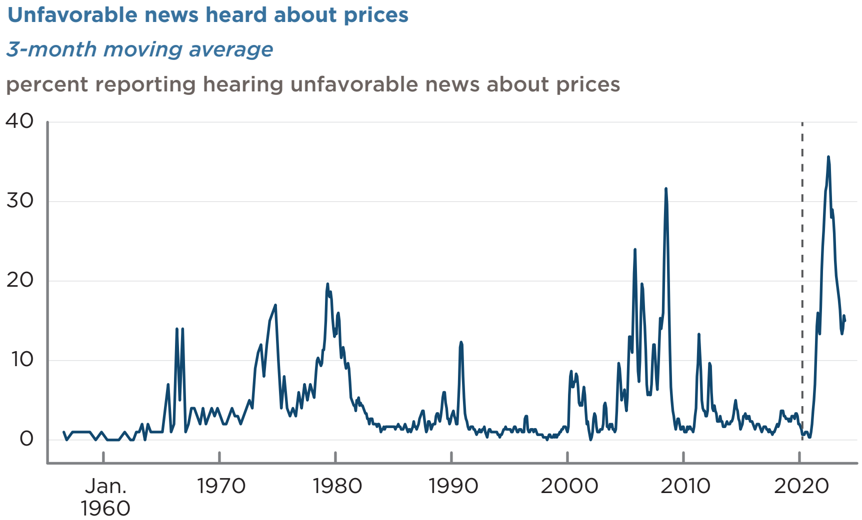
Sources: Data are from University of Michigan, Survey Research Center, Surveys of Consumers; US Bureau of Labor Statistics.

Why do consumers feel so dismal about the economy even when they recognize that inflation has slowed and expect the slowdown to continue?

Consumers have been aware that inflation has slowed, which bears out in their responses to survey questions about inflation expectations as well as about current buying conditions for large purchases such as cars, durable goods, or homes. However, high prices continue to be salient for consumers, and they appear to exert a stronger relationship on sentiment now than during earlier periods. Further

Figure 11

Negative news about inflation during 2021–23 exceeds levels seen in the late 1970s and early 1980s



Source: Data are from University of Michigan, Survey Research Center, Surveys of Consumers.

research will be needed to understand the reasons for any shifts in consumer attitudes, but two factors stand out as potential candidates.

According to the American Psychological Association (APA), stress levels among Americans increased in 2023 relative to 2019 despite the official end of the pandemic and a strong recovery from the pandemic recession: "A superficial characterization of day-to-day life being more normal is obscuring the posttraumatic effects that have altered our mental and physical health. . . . Widespread trauma has not been limited to the pandemic. Global conflict, racism and racial injustice, inflation, and climate-related disasters are all weighing on the collective consciousness of Americans" (APA 2023). An undercurrent of stress or anxiety stemming from the collective experience of the pandemic period could very well amplify the effects of high prices and inflation on Americans' sense of financial well-being and their outlook for the economy as a whole. The APA notes that stress is associated with worse physical well-being, and further research can shed light on the extent to which stress or worsened psychological well-being could influence their economic views or their perceptions of their economic experiences.

A second societal factor that has shifted over the past several years is how Americans consume and share news. The media landscape has changed dramatically over the years. Daily print newspapers have evolved into constantly updated online news websites, and the role of social media has grown. The speed of the news cycle accelerated with the spread of internet access and later with the proliferation of smartphones. Political polarization has also been accompanied by divisions across the population, along with the types of news sources they trust.

Each month, the Surveys of Consumers ask respondents, "During the last few months, have you heard of any favorable or unfavorable changes in business conditions?" and "What did you hear?" Figure 11 plots the share of consumers reporting hearing negative news about inflation. In 1979, a high of 21 percent of consumers reported hearing negative news about inflation. In June 2023, almost twice as many consumers reported the same, in spite of the fact that inflation rates were lower than the earlier period. Although the relationship between negative news and unfavorable sentiment is not necessarily causal—after all, individuals are likely to gravitate to news stories that confirm their experiences or their priors—the proliferation of negative news could certainly exacerbate already tense feelings about inflation or the economy more generally.

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