

Field Note | 2024-1 | August 2024

Household perceptions of price changes and coping strategies

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The views expressed in this paper are those of the authors and do not necessarily represent those of the Federal Reserve Bank of Boston or the Federal Reserve System.

Key findings

- Despite a dramatic decline in inflation over the past two years, 59 percent of adults who responded to the US Census Household Pulse survey in May 2024 were still very concerned about future price increases.
- Among those who thought prices increased in the past two months, the share of adults reporting that price increases were “very stressful” improved from a high of 50 percent in September–October 2023 to 45 percent in May 2024.
- Price-related stress and concern over future price increases were more prevalent among disadvantaged groups (women, Black and Hispanic households, those with lower levels of education or income, and those living in households who had experienced a recent job loss).
- The share of Pulse respondents who used credit cards and loans to cope with rising prices steadily increased in 2023.
- Those most likely to use credit cards and loans to cope with price increases included millennials and adults with some college education, as well as adults living in households that had experienced a recent job loss and/or had moderate incomes (\$35,000–\$74,999).

Introduction

Traditional economic indicators point to an economy that is, by most accounts, firing on all cylinders. Unemployment is at near historic lows,¹ wages are rising (Van Nostrand et al., 2023), and economic growth remains solid.² After surging post-pandemic, inflation is not far from the Federal Reserve’s target rate.³ Yet, many observers have pointed to the

¹ The May 2024 unemployment rate was 4.0 percent. For historical data on the unemployment rate, see US Bureau of Labor Statistics, Unemployment Rate [UNRATE], retrieved from FRED, Federal Reserve Bank of St. Louis. <https://fred.stlouisfed.org/series/UNRATE>, June 27, 2024.

² In the first quarter of 2024, real gross domestic product grew at an annual rate of 1.4 percent. See US Bureau of Economic Analysis, Gross Domestic Product (Third Estimate), Corporate Profits (Revised Estimate), and GDP by Industry, First Quarter 2024. Washington, DC: Bureau of Economic Analysis (June 27, 2024). <https://www.bea.gov/news/2024/gross-domestic-product-third-estimate-corporate-profits-revised-estimate-and-gdp-industry>. For historical data on gross domestic product, see US Bureau of Economic Analysis, Real Gross Domestic Product [GDPC1], retrieved from FRED, Federal Reserve Bank of St. Louis. <https://fred.stlouisfed.org/series/GDPC1>, May 8, 2024.

³ In April 2024, the Federal Reserve’s preferred inflation measure (the personal consumption expenditures [PCE] price index) increased 2.7 percent from the same month one year ago. See US Bureau of Economic Analysis, Personal Income and Outlays, April 2024. Washington, DC: Bureau of Economic Analysis (May 31,

disconnect between positive economic indicators and the perceptions of survey respondents who continue to express pessimism about the US economy (Krugman, 2024a; Yglesias, 2023). In December 2023, when the unemployment rate was 3.7 percent, consumer sentiment was lower than it was when unemployment peaked following the Great Recession and during the first months of the COVID-19 pandemic.⁴ Nonetheless, recent improvements in sentiment suggest that perceptions of the economy are beginning to move more in line with underlying economic indicators (Brenan, 2024).⁵

Some argue that recent economic pessimism stems from anxiety over persistently high prices relative to prepandemic levels (Stewart, 2023). Inflation may have cooled, but because prices have not fallen, goods and services cost more than they did just a few years ago. At the same time, higher prices have not deterred consumers, as spending levels continue to rise at a steady pace.⁶ Nominal credit card debt has risen in tandem, surpassing \$1 trillion last year for the first time in US history (Federal Reserve Bank of New York, 2023; Haughwout et al., 2023a). In isolation, rising credit card balances are not necessarily a concern (Federal Reserve Bank of St. Louis, 2023), except that larger balances have also coincided with record-high credit card interest rate margins (Martinez & Seikel, 2024) and an increase in delinquency rates for low-income and younger households that, by some measures, now exceed prepandemic levels (Federal Reserve Bank of New York, 2024; Haughwout et al., 2023a). Pessimism about the economy is possibly out of step with underlying conditions for many households. For others, pessimism could reflect well-justified anxiety over higher price levels, even for those who are employed and earning more than ever.

As Boston Fed President Susan Collins recently observed, “I think it can be true that a lot of parts of our economy are doing extremely well, and that some people are really struggling and there's a heightened level of anxiety and challenge” (Lang, 2024). The goal of this field note is to understand how US adults perceive and contend with recent price changes. Previous studies found that credit usage and delinquency rates vary across income and age groups, but credit card data do not permit researchers to disaggregate trends at the individual level by characteristics like race and educational attainment.⁷ Furthermore, credit card data do not capture non-cardholders or provide insight into household perceptions of economic conditions or how people cope with

2024). <https://www.bea.gov/news/2024/personal-income-and-outlays-april-2024>. For historical data on the PCE price index, see US Bureau of Economic Analysis, Personal Consumption Expenditures: Chain-type Price Index [PCEPI], retrieved from FRED, Federal Reserve Bank of St. Louis. <https://fred.stlouisfed.org/series/PCEPI>, May 3, 2024.

⁴ For example, compare University of Michigan, University of Michigan: Consumer Sentiment [UMCSENT], retrieved from FRED, Federal Reserve Bank of St. Louis. <https://fred.stlouisfed.org/series/UMCSENT>, May 3, 2024, and US Bureau of Labor Statistics, Unemployment Rate [UNRATE], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/UNRATE>, May 3, 2024.

⁵ Consumer sentiment improved in early 2024. See University of Michigan, University of Michigan: Consumer Sentiment [UMCSENT], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/UMCSENT>, May 3, 2024.

⁶ For historical information on consumer expenditures, see US Bureau of Economic Analysis, Real Personal Consumption Expenditures [PCEC96], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/PCEC96>, February 6, 2024.

⁷ It is possible to disaggregate by credit usage and delinquency by geography (e.g., zip code) for specific demographic groups. For example, see Haughwout and colleagues (2023a).

higher prices. In addition to tracking trends over time, we investigate which demographic groups have been most affected by price changes. Specifically, we focus on the share of adults who are concerned about price increases, are experiencing price-related stress, and are using credit cards and loans to cope with price increases and meet spending needs.

Data and methods

We used 20 waves of data from the US Census's Household Pulse Survey (the Pulse), spanning September 14, 2022, to May 27, 2024. The US Census introduced the Pulse at the start of the COVID-19 pandemic "to measure how emergent issues are impacting US households from a social and economic perspective."⁸ The Census administered the Pulse 68 times at semi-regular intervals between April 2020 and May 2024.⁹ The US Census introduced questions on prices in September 2022. The Census dropped two questions used here on coping with price increases and meeting spending needs after October 2023, necessitating a shorter timeframe for analyses involving these questions.

Results

Concern over future price changes and perceptions of past changes

In June 2022, the annual inflation rate reached a 40-year high of 9.0 percent.¹⁰ By the following June, inflation had declined to 3.1 percent. However, nearly two-thirds of respondents to a Pew opinion poll agreed that inflation is "a very big problem" for the country today, outpacing concern over all other issues, including gun violence, immigration, and climate change (Pew Research Center, 2023). The Pulse allows us to further investigate this disconnect between perceptions and underlying inflation. Figure 1 illustrates the share of Pulse respondents (1) who were "very concerned" that prices would increase in the next six months¹¹ and (2) who thought that prices for goods and services in their area had increased in the past two months, alongside the 12-month change in inflation.¹²

⁸ See US Census Bureau. "Household Pulse Survey: Measuring Emergent Social and Economic Matters Facing U.S. Households." <https://www.census.gov/programs-surveys/household-pulse-survey.html>.

⁹ For more information on the timing of the Household Pulse phases, see <https://www.census.gov/data/experimental-data-products/household-pulse-survey.html>.

¹⁰ Inflation is measured as the 12-month change in the Consumer Price Index for All Urban Consumers (CPI-U).

¹¹ Pulse asked, "In the area you live and shop, how concerned are you, if at all, that prices will increase in the next 6 months?" Respondents selected one of the following response options: (1) Very concerned, (2) Somewhat concerned, (3) A little concerned, (4) Not at all concerned.

¹² Pulse asked, "In the area where you live and shop, do you think the prices for goods and services have changed in the last 2 months?" Respondents selected one of the following response options: (1) I think prices have increased, (2) I do not think prices have changed, (3) I think prices have decreased, and (4) I do not know.

Figure 1 | Percentage of US adults perceiving past price increases and expressing concern over future price increases, Sep 2022 to May 2024



Note: Analysis of US Census Household Pulse. Inflation was measured using the twelve-month percentage change in the CPI-U. Shaded regions illustrate 95% confidence intervals.

Both the share of respondents who thought prices had increased and those who were concerned about future prices declined since 2022, but not nearly as fast as the underlying inflation rate. These trends were consistent with previous research finding that perceptions of inflation decreased in 2023 but at a slower rate than actual inflation (Lebow & Peneva, 2024). As of May 2024, more than half of Pulse respondents (59 percent) were concerned about future price increases. This represents a modest four percentage point decline from peak concern (63 percent) in October 2022 when annual inflation was still at 7.8 percent.

The vast majority (86 percent) of adults in the most recent wave thought that prices had increased in the past two months. This high share could reflect knowledge that, even at moderate levels of inflation, prices are still technically increasing. However, Pulse respondents with the highest incomes and education levels were the least likely to believe that prices had increased (supplemental analysis not shown; available upon request), indicating that the question likely reflects the salience of price changes rather than direct knowledge of reported inflation rates.

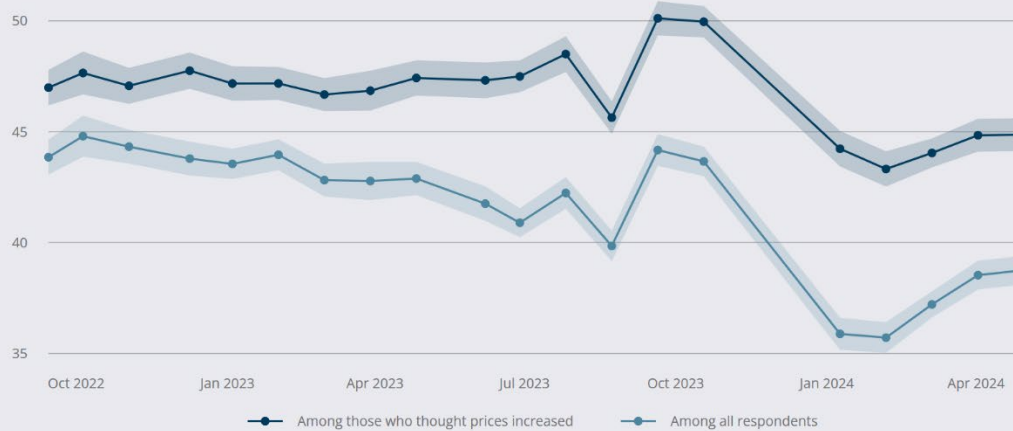
Finally, a recent uptick in concern over future price increases and perceptions of past changes coincided with a modest rise in inflation in early 2024. Persistent concern over prices and the seeming responsiveness to small increases in the inflation rate suggests that prices will remain salient even after inflation stabilizes at lower levels. It will take time for people to adjust to the reality that goods and services cost considerably more than they did three years ago.

Stress associated with price increases

The subset of Pulse respondents who thought that prices had increased in the previous two months were presented with a follow-up question asking how stressful the price

increases had been.¹³ Figure 2 shows the percentage of respondents who believed that price increases were “very stressful.” Among those who thought prices had increased, the percentage who experienced stress remained relatively constant—at about 47 percent—over much of the survey period but increased to about 50 percent in October 2023. Stress levels declined to 43 percent by February 2024 but started to tick back up in the most recent waves.¹⁴ If we assume that people who did not believe that prices increased experienced no stress, a still substantial 39 percent of all Pulse respondents were very stressed about prices in the most recent survey wave. Figure 2 indicates that price-related stress improved relative to peak levels, but high prices remain a concern for many respondents. Moreover, the latest uptick in stress coincided with a modest increase in inflation in recent months, indicating that, as with concern over future price increases and perceptions of past price increases, stress may respond to even small upward movements in prices.

Figure 2 | Percentage of US adults *very stressed* about price increases in the past two months, Sep 2022 to May 2024



Note: Analysis of US Census Household Pulse. Share “Among all respondents” assumes respondents who did not think prices increased in the past two months experienced no price-related stress. Shaded regions illustrate 95% confidence intervals.

Coping with price increases

Pulse asked the subset of respondents who believed that prices had increased if they had made or were planning to make any changes to cope with price increases. Respondents were allowed to select all that applied from a list of 19 coping strategies, including “credit cards, loans, and/or pawnshops.” An additional question to all respondents asked about approaches households had taken to meet spending needs in

¹³ Pulse asked, “How stressful, if at all, has the increase in prices in the last 2 months been for you? Select only one answer.” Respondents selected one of the following response options: (1) Very stressful, (2) Moderately stressful, (3) A little stressful, and (4) Not at all stressful.

¹⁴ Because the Pulse data are not seasonally adjusted and the series captures only a single year, it is difficult to know if changes are the result of seasonal factors.

the past seven days, with the option to select all that applied from a list of 11 strategies, including “credit cards or loans.”¹⁵ Unfortunately for this analysis, Pulse discontinued both questions after October 2023.

Figure 3 illustrates that the share of households using credit cards, loans, and/or pawnshops to cope with price increases increased throughout 2023, even as inflation declined. In respect to coping, other strategies—such as relying on friends and family, saving less, shopping for lower prices, and scaling back on necessities (e.g., medical treatment) and nonessentials (e.g., subscription services)—also became more prevalent over the past year (see Figure A1). Likewise, Figure 3 also shows that households increasingly used credit cards and loans to meet spending needs in 2023. This could reflect people using credit cards as a method of payment (i.e., not carrying a balance). However, throughout 2023, households also became more likely to borrow from family and to use savings to meet spending needs (see Figure A2). Although the increases shown in Figure 3 are gradual, they suggest households were looking beyond regular income to cope with price changes and meet spending needs, even as inflation fell over this period.

Figure 3 | Percentage of US adults using debt to cope with price increases and meet spending needs, Sep 2022 to Oct 2023



Note: Analysis of US Census Household Pulse. Only respondents who thought prices increased in the past two months were asked if they used credit cards, loans, and pawnshops to cope. Shaded regions illustrate 95% confidence intervals.

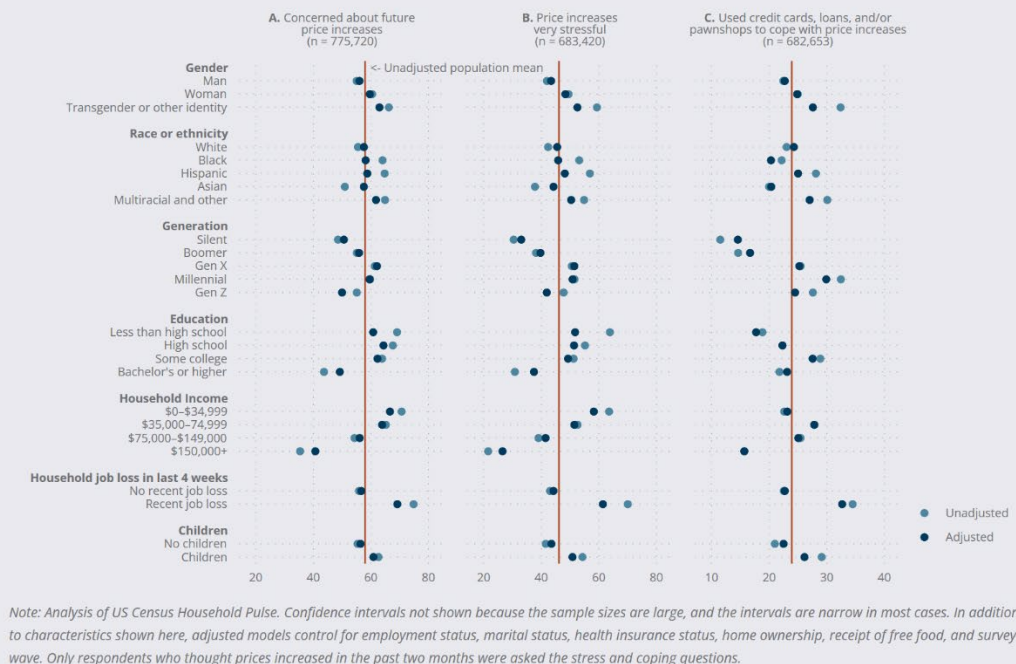
Differences across groups

For our final analysis, we pooled all survey waves from December 2022 to October 2023 to investigate how concern over price increases, price-induced stress, and use of credit cards, loans and/or pawnshops to cope with rising prices varied across

¹⁵ Pulse asked, “Thinking about your experience in the last 7 days, which of the following did you or your household members use to meet your spending needs?”

sociodemographic groups.¹⁶ Figure 4 plots unadjusted (light blue) and adjusted (dark blue) percentages for these three outcomes by sex, race and ethnicity, generation, education, income, whether the household experienced a job loss in the last four weeks, and presence of children in the household.¹⁷ Unadjusted population means for each outcome are denoted with a red line. We are primarily interested in knowing if there are differences across demographic groups in experiencing the outcomes and understanding if these differences can be accounted for by other sociodemographic characteristics.¹⁸

Figure 4 | Probabilities (%) by demographic groups for (A) having concern over future price increases, (B) being very stressed about price increases, and (C) using credit cards or loans to cope with price increases, Sep 2022 to Oct 2023



¹⁶ Because the Pulse question about using credit cards, loans, and/or pawnshops to cope with price increases was discontinued after October 2023, we restricted this analysis to a period when all three outcomes were observed.

¹⁷ We generated adjusted probabilities by estimating logistic regression models for each of the three outcomes while controlling for the other sociodemographic variables in the figure, as well as employment status, marital status, health insurance status, home ownership, receipt of free food, and survey wave indicators. We then used Stata's *margins* command to estimate the average predicted probabilities for each outcome.

¹⁸ For example, young people may be particularly likely to experience one of the outcomes, but this could be because they are also the least likely to have children. In addition, race is highly correlated with education and income in the United States. Controlling for education and income allows us to understand if racial differences persist after holding these other factors constant. The adjusted models control for gender, race, generation, educational attainment, income, presence of children in the household, employment status, recent job loss, marital status, health insurance coverage, homeownership, receipt of food assistance, and survey wave.

Unadjusted versus adjusted results

In most cases, the unadjusted and adjusted results were substantively similar, indicating that any differences between groups were not easily explained by observed sociodemographic characteristics. One notable exception pertains to concern over future price increases (Figure 4, panel A) and price-related stress (Figure 4, panel B). The unadjusted results show that Asian and white respondents were less likely (and Black and Hispanic respondents more likely) than average to be concerned and very stressed about price increases. These differences largely disappeared after adjusting for other characteristics such as education and income, which accounted for observed racial differences in concern over future price increases and price-related stress. In other instances, the adjusted models pulled the probabilities closer to the population averages, but because the results are substantively similar, we primarily focus on the unadjusted probabilities.

Advantaged versus disadvantaged groups

Panels A and B of Figure 4 show the share of adults who were concerned about future price increases and who thought price increases were “very stressful.”¹⁹ The unadjusted results (shaded gray) indicate that respondents in more advantaged groups, (e.g., white and Asian people and those with higher education and/or income) were less likely to be concerned about future price increases and less likely to be very stressed about price increases (among those who perceived price increases). This is consistent with earlier research that found that more disadvantaged groups report higher inflation expectations (de Bruin et al., 2010).

Generationally, concern and stress levels were highest for Gen X and millennials, who are also in their prime work and childrearing years. Although we attempted to account for life-course-related factors (e.g., children, employment, and homeownership), these controls failed to explain away differences between older and middle-aged respondents.

For both concern and stress, we see the greatest separation by education, income, and recent job loss. Those with the highest levels of education and income pulled away from other groups. For example, relative to those with incomes of \$150,000 or higher, people with household incomes below \$35,000 were 35 percentage points more likely to be concerned about future price increases and 42 percentage points more likely to experience price-related stress.²⁰ Likewise, people living in household where someone had lost a job in the last four weeks were far more likely than other households to be concerned about future price increases and experience price-related stress. Differences by income and recent job loss persisted after controlling for other factors in the adjusted

¹⁹ Note that we did not perform formal significance tests to test for differences between groups or, due to space constraints, include confidence intervals in Figure 4. Because of the large sample sizes, the 95% confidence intervals were narrow in most cases. Across the three outcomes shown in the figure, the groups with the largest margins of error were “Transgender or other identity” and “Less than high school,” with a maximum margin of error of about +/-2 percentage points. Generally, the margins of error were within about +/-1 percentage point for the adjusted models.

²⁰ This difference is understated because high-income households were the least likely to be asked about concern and stress because fewer of these households thought prices had increased.

models. In contrast, the unadjusted differences between the three lowest education levels were largely explained away with the addition of other controls.

The strong association between income and perceptions of price increases and stress could, in part, reflect different underlying experiences with prices changes. Earlier research found that low-income households experience higher rates of inflation than high-income households (Argente & Lee, 2021; Kaplan & Schulhofer-Wohl, 2017). Low-income households also spend a greater share of their budgets on necessities like food, rent, and utilities (Brainard, 2022; Klick & Stockburger, 2022), categories that experienced particularly steep price increases at different times since the start of the COVID-19 pandemic.²¹ Consequently, households with the fewest financial resources likely experienced the most significant run-up in prices. This difference in experience could also have contributed to greater concern and sensitivity to price increases among less-advantaged households.

Use of credit cards and loans to cope by education and household income

Panel C of Figure 4 illustrates the percentage of all Pulse respondents who increased their use of credit cards, loans, and/or pawnshops to cope with price increases (recall that only those who thought prices increased in the past two months received this question). Again, we observe major differences across recent job loss, generation, education, and household income.

Over one out of three adults (34 percent) living in households with a job loss in past four weeks used a credit card or loan to cope with price increase. Even after adjusting for other characteristics, those with a recent job loss were more likely than any other group to use this coping mechanism. For perspective, nearly 12 percent of Pulse households experienced a job loss in the previous four weeks over the period covered in the figure.

Millennials were the second most likely group to rely on credit cards or loans to cope with price increases. Gen Z were also above the population mean, but much of the difference was controlled for after accounting for other demographic factors. These results are consistent with industry data showing credit card balances rising most quickly last year among young borrowers (Moran, 2023). That borrowers under age 40 are also increasingly at risk of credit card delinquency (Federal Reserve Bank of New York, 2024; Haughwout et al., 2023b) suggests that younger households could be having difficulty paying for household spending needs. Meanwhile, the oldest two generations were far less likely to use credit card or loans, a fact that was not explained away by controlling for income or other factors. Older generations could have spending needs that skew toward items that are not payable by credit card (e.g., rent, mortgage payments, and nursing home fees), but these households were also the least concerned and stressed about prices.

Finally, whereas those in the lowest income and education categories were the most likely to be concerned and stressed about prices, these groups were less likely than

²¹ See, for example, US Bureau of Labor Statistics, Consumer Price Index for All Urban Consumers: Household Energy in US City Average [CUSR0000SAH21], retrieved from FRED, Federal Reserve Bank of St. Louis, May 23, 2024, <https://fred.stlouisfed.org/graph/?g=1o9WV>.

average to use credit cards or loans to cope. This could reflect issues in access to credit, as the lowest income group was more likely than others to ask friends or family for help to cope with price increases (supplemental analysis of Pulse data not shown; available upon request). In contrast, those in the middle of the education (i.e., some college) or income (\$35,000–\$75,000) distributions were more likely to rely on credit cards and other loans to cope. Although low-income households may experience issues with access to credit, it is important to acknowledge that as of last year, this group had experienced faster growth in “credit card spending, revolving balances, and delinquencies” than higher-income households since the start of the COVID-19 pandemic (Stavins, 2023, p. 6).

Conclusion

Despite declining inflation, more than half of recent Pulse respondents in May 2024 were concerned about prices rising in future, while the vast majority of respondents thought that prices had increased in the past two months. Among those who thought prices increased, there was considerable improvement in price-related stress in early 2024. Nonetheless, changes in perceptions lagged the significant decline in the inflation rate. Moreover, perceptions of price increase, concern over future price increases, and price-related stress all ticked upward in the most recent survey waves, partially offsetting earlier gains. As we saw in the most recent Pulse wave, there is also some evidence that these measures are responsive to small increases in the inflation rate.

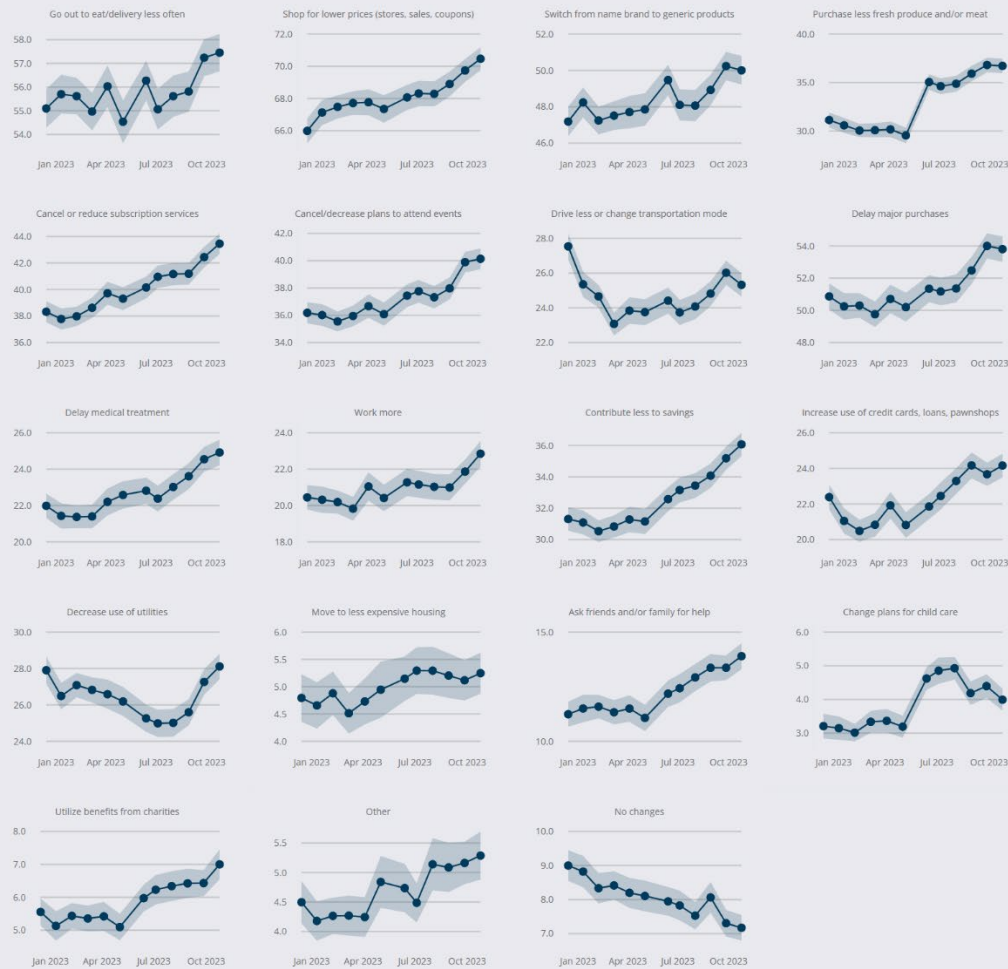
It appears that the pain associated with inflation lasts well beyond the initial shock of higher prices and even persists when price increases return to more historically normal levels. It could take time for consumers to readjust to prices that are stable but considerably higher than in the recent past. This may be particularly true for low-income households and households with a recent job loss, both of whom expressed the most concern and stress over prices.

In addition, the share of households using credit cards to cope with price increases and meet household spending needs increased gradually through October 2023, at which time the Pulse discontinued these questions. Increased reliance on credit cards and other coping strategies (see Figures A1 and A2) could signal that households cannot meet basic spending needs from income alone. It is perhaps no coincidence that the rise in credit card and loan usage in 2023 coincided with the depletion of the \$2.1 trillion of excess savings accumulated during the pandemic (Abdelrahman & Oliveira, 2023). Although there is debate among economists over the extent to which households spent down excess savings and if drawdowns differed by income (Barbiero & Patki, 2023), some expect lower-income households to return to pre-pandemic savings levels the fastest (Abdelrahman & Oliveira, 2023; Stavins, 2023). The fact that, in the scope of this analysis, the lowest-income households did not rely on credit cards and other loans to cope with price increases as much as those with slightly higher incomes indicates that these households may be seeking help elsewhere. Finally, younger and middle-aged adults appear to be facing greater price-related stress and reliance on credit cards and other loans than the oldest generations. These generational differences could be exacerbated by the resumption of student loan payments in October 2023.

Earlier this year, one observer characterized the US economy as being better than Goldilocks: “We’ve got an economy that’s hot where you want it to be hot, like in GDP growth, and cold, where you want it to be cold, on inflation,” (Krugman, 2024b). Yet, there is a disconnect between positive economic indicators and pessimistic survey responses. The findings presented here, along with recent credit card delinquency trends, suggest that some segments of the population may not benefit equally from prevailing economic conditions. We identified households that already appear to be having trouble meeting spending needs when the overall economy is doing well. These same households will be vulnerable to unemployment if the economy slows, while overreliance on credit could limit the ability to borrow later as households reach their credit limits. Moreover, as the job loss results illustrated, unemployment would not only make people more financially vulnerable but also make higher prices more stressful, even in an environment where inflation continues to decline.

That price-related concern and stress are down relative to peak levels is a positive sign that households are adjusting to higher price levels. Nonetheless, a return to normal levels of anxiety over prices is likely to take longer than the normalization of the inflation rate itself.

Figure A1 | Percentage of US adults using different methods to cope with price increases, Dec 2022 to Oct 2023



Note: Analysis of US Census Household Pulse. Figure A1 uses a shorter time frame than Figure 3, because the wording of some response options changed in December 2022. Shaded regions illustrate 95% confidence intervals.

Figure A2 | Percentage of US adults using different methods to meet spending needs, Dec 2022 to Oct 2023



Note: Analysis of US Census Household Pulse. Figure A2 uses a shorter time frame than Figure 3, because the wording of some response options changed in December 2022. Shaded regions illustrate 95% confidence intervals.

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Acknowledgements

The authors thank the following individuals for their feedback on earlier versions of this brief: Brian Clarke, Jenny Tang, Catherine Tonsberg, and Beth Mattingly; and Gracie Griffin for her editorial assistance.

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