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### Post-pandemic changes in household food expenditure and affordability: Heterogeneity by income

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#### Abstract

Food affordability, yet existing evidence on how households across the income distribution have responded relies on aggregate statistics and descriptive reports. This paper uses newly released 2023 Panel Study of Income Dynamics (PSID) data and two-way fixed effects regressions to examine changes in food expenditure and insecurity by income quintile between 2019 and 2023. Bottom-quintile households cut total food spending by about \$510. Food inflation-adjusted results and models conditional on total food expenditure suggest this result may be driven by budget constraints rather than substitution between food categories, whereas Q2 through Q5 households substituted away from non-home toward at-home food. Food insecurity rose sharply for middle-income households: 7.1 and 3.6 percentage points more Q2 and Q3 households reported insufficient food, and 6.2 and 6.9 percentage points more reported an inability to afford balanced meals. These findings suggest that post-pandemic price increases disproportionately affected lower- and middle-income households, and that expansion of food assistance benefits may provide relief.

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# 1. Introduction

Grocery price anxiety has been a key issue for Americans since the COVID-19 pandemic, and was highlighted by voters in the 2024 election (Lopez 2024). Prior findings and economic theory suggest that as prices increase relative to income, higher-income households may not respond, while budget-constrained households may substitute away from non-home food expenditures when possible (Okrent and Alston 2011). Lower-income households that cannot increase spending or reduce expenditure through substitution may even eat less. However, these dynamics remain unexamined in recent studies.

The current evidence on how households responded to price increases is limited in scope and methodology. Post-pandemic changes in household food expenditures have primarily been described as part of data releases and descriptive reports, including those accompanying the Consumer Expenditure Survey (CE), which do not account for SNAP benefits and only utilize aggregate statistics (Meyers *et al.* 2024, Bafowaa and Leschewski 2024, and Muth *et al.* 2025). Meanwhile, Okrent and Zeballos (2025) used CE data to conduct a household-level analysis by income quartile, comparing 2016–2019 with recent years and finding that the top quartile decreased spending on food consumed away from home in 2020–2022. More generally, the study concluded that spending on food away from home in 2022 remained lower than during 2016–2019, while at-home food spending was higher.

In this paper, I use newly released data from the 2023 Panel Study of Income Dynamics (PSID) on food expenditure as a proportion of income (food share of income) and measures of food insecurity. I thus quantify the nature of these changes by income quintile between 2019 and 2023, and pin down the role of affordability, in part by extensively controlling for income. My analysis also fills gaps in the literature by using household-level panel data from the PSID, the last two waves of which have not yet been used in such studies or in food insecurity literature more generally (Rabbitt *et al.* 2024). Moreover, by assessing at-home and non-home food expenditure conditional on total food expenditure, I also investigate the extent to which changes can be attributed to the substitution effect, which has not been addressed in post-pandemic literature.

The findings confirm these predictions and show an increase in the proportion of households eating less in the first, second, and third quintiles (Q1, Q2, and Q3, respectively). Households in Q1 spent about \$510 less on all food in 2023 compared to 2019, and 7.1 and 3.6 percentage points (p.p.) more households in Q2 and Q3 reported insufficient food (respectively). Households in Q2 and Q3 substituted toward less healthy food, with 6.2 and 6.9 p.p. more households reporting being unable to afford balanced meals. By contrast, households in the fifth quintile (Q5) spent about \$620 more on food in 2023 compared to 2019, suggesting that high-income households are not subject to the same budget restrictions.

## 2. Data, Long-Term Trends, and Theory

The Institute for Social Research (ISR) at the University of Michigan currently conducts the PSID as a biennial survey. Data from the 2023 survey were released in May 2025 (Panel Study of Income Dynamics 2025). The final data used here are available on the official PSID data repository and all code files used to obtain and analyze the data are available online (see data note and replication files).

In the first analysis and descriptive statistics, food expenditure and income are adjusted for general inflation using the Bureau of Labor Statistics’ CPI for all urban consumers (U.S. Bureau of Labor Statistics 2025a). An alternative general inflation index is used as a robustness check. The second analysis adjusts food expenditure for food-specific inflation. At-home food is adjusted with the price index for food at home (U.S. Bureau of Labor Statistics 2025c), non-home food (including deliveries) is adjusted with the index for food away from home (U.S. Bureau of Labor Statistics 2025d), total food is a sum of the two adjusted components, and SNAP benefits are adjusted with the index for all food (U.S. Bureau of Labor Statistics 2025b). This provides the “real” food share of income (where income is still adjusted for general inflation), which better captures consumption.

To further zero in on consumption responses, three dummy variables for reported food insecurity are also used. These variables equal one if households report the respective issue sometimes or often. The first indicates that the household was unable to afford balanced meals (“imbalanced meals”), while the second includes various responses indicating “insufficient food.” The latter includes cutting the size of meals, skipping meals or going hungry, and running out of food without being able to afford more. The third denotes reports of both aforementioned measures of insecurity (“both”). While this only captures changes in consumption that are extreme enough to lead to food insecurity, these are the only direct measures of food consumption available in recent waves of the PSID.

To focus on post-pandemic changes, data are limited to the 2019, 2021, and 2023 surveys.<sup>1</sup> Households are divided into quintiles (Q1 through Q5)<sup>2</sup> based on incomes in 2023, and only households with incomes in an adjacent quintile (one above or below their 2023 quintile) in 2019 and 2021 are included to avoid changes driven by large shifts in income. Robustness checks allow for alternative quintile definitions.

Households that receive benefits in any year are excluded from the quintile samples to avoid SNAP eligibility-related changes in expenditure. However, given that SNAP benefits may be a possible policy response to reduce food insecurity and make food affordable, an analysis of SNAP recipients is provided to gauge the effectiveness of this approach. Given that PSID gauges eligibility in the 2019-2023 survey years by asking about SNAP benefits in the month before the survey, the SNAP sample is thus limited to households that report receiving SNAP benefits in the month before the survey in this period.<sup>3</sup> Dollar values for SNAP benefits are adjusted for inflation in accordance with other food expenditures.

Figure 1 shows the median food share of income by quintile and SNAP status between 2001 and 2023. Changes for Q1 were most pronounced, with the median total food share of income increasing by 16.9 p.p., and households in Q2 experienced a 6 p.p. increase. Changes in the at-home food share of income for each quintile mimic the total food share of income.

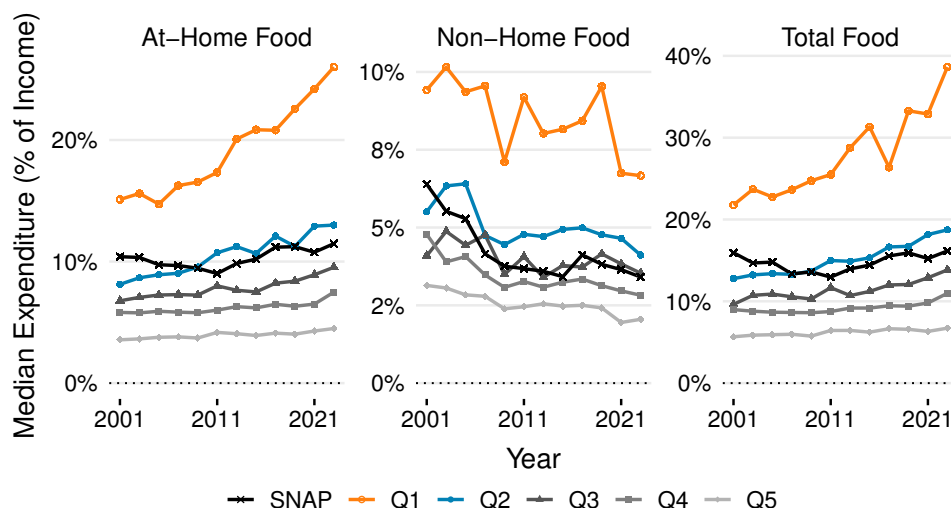
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<sup>1</sup>Only households present in both the 2021 and 2023 surveys are included to accommodate fixed effects analysis and avoid gaps in data.

<sup>2</sup>Calculated using weighted income by survey year. 2023 longitudinal weights that correct for attrition bias (Chang *et al.* 2023) are used for all calculations and analyses. Total family income, which includes all income earned by householders in the year before the survey, is used. Households with zero and negative incomes (roughly 9% of the sample) are included in percentile calculations, but excluded from the analysis and trends to simplify interpretation. Households whose heads are younger than 18 are excluded.

<sup>3</sup>This is to ensure that any eligibility-related shocks are excluded. Note, however, that SNAP recipients in the long-term trends include all households that received SNAP benefits at any time between 2001 and 2023 due to the long timeframe.

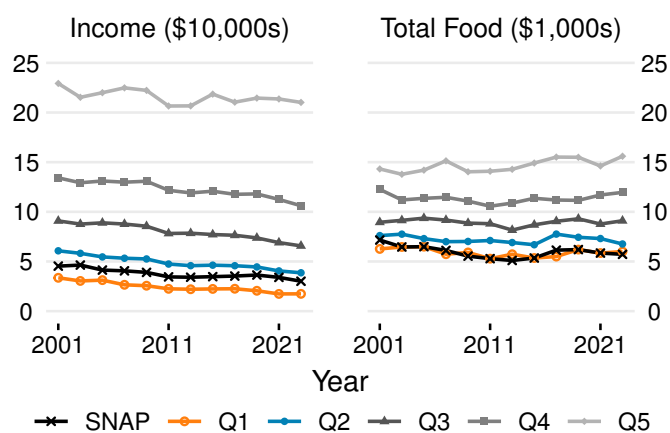
Figure 1: Median Food Expenditure as a Percentage of Income By Income Quintile and SNAP Status (2001-2023)



Note: Y-axes differ by panel to maximize clarity. PSID data with weighted medians using 2023 family weights. SNAP recipients reported receiving benefits at least once between 2001 and 2023.

Meanwhile, the non-home food share of income has decreased for all groups since 2001, with the largest decreases for Q1 and SNAP recipients. Households in Q1 and SNAP recipients saw a decrease of 2.8 and 3 p.p. (respectively) in this period. Trends in food expenditures relative to income thus merit additional examination.

Figure 2: Median Total Food Expenditure and Income by Income Quintile (2001-2023)

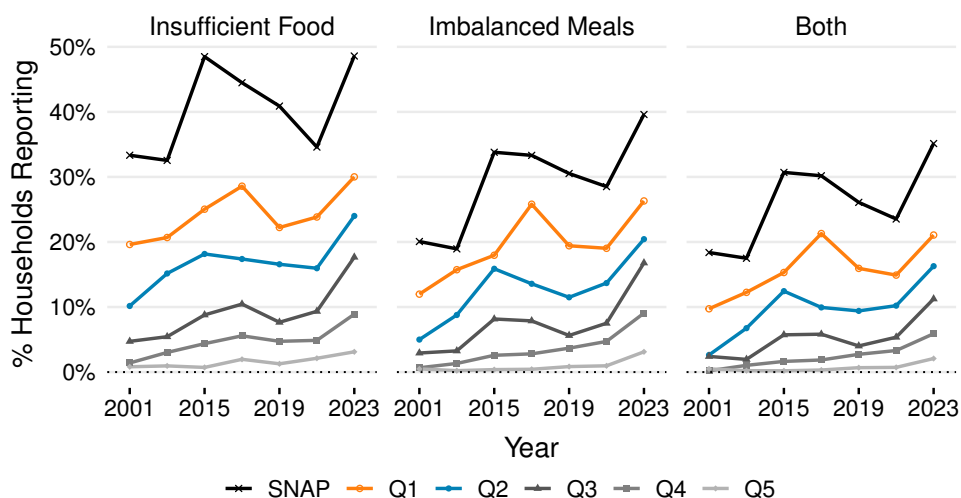


Note: PSID data by weighted income quintile calculated using 2023 family weights. Households with zero and negative incomes are included in percentile calculations, but excluded from the graph. SNAP recipients reported receiving benefits at least once between 2001 and 2023.

Figure 2 shows (general) inflation-adjusted median income and total food expenditure by quintile, which complicates the initial trends. Between 2001 and 2023, median real incomes

declined across all quintiles – Q2, Q3, Q4, and SNAP recipients saw rapid declines in recent years, while Q1 saw a more gradual decline in median income. Households in Q1 and Q2, as well as SNAP recipients, reduced total food expenditure in recent years, while there were slight increases for Q4 and Q5. Given that median real incomes were falling alongside changes in expenditure, the effects of price inflation may be overstated without further analysis.

Figure 3: Percentage of Households Reporting Food Insecurity by Income Quintile (2001-2003, 2015-2023)



Note: PSID data by weighted income quintile calculated using 2023 family weights. Households with zero and negative incomes are included in percentile calculations, but excluded from the graph. SNAP recipients reported receiving benefits at least once between 2001 and 2023. Food insecurity variables not available for 2005-2013 surveys. See Section 2 for variable definitions.

Figure 3 shows that changes in food-related expenditure are accompanied by increases in the proportion of households reporting food insecurity across all income quintiles and SNAP recipients. The fact that reports of insufficient food are more common than reports of being unable to afford balanced meals across nearly all quintiles is especially noteworthy. The proportion of households reporting either or both types of food insecurity peaked in 2023 for all quintiles, although households in Q1 and SNAP recipients reported similar levels of food insecurity in 2017 and in 2015, respectively (note that variables were unavailable between 2005 and 2013).

Households in Q2 had the highest increase in the incidence of food insecurity between 2001 and 2023 (15.7 and 13.8 p.p. increase for insufficient food and imbalanced meals, respectively). Households in Q3 had the second largest increase in likelihood of reporting insufficient food (12.9 p.p. increase), followed by households in Q1 (10.4 p.p.). These patterns are discernible in the final results, as well. The proportion of SNAP recipients reporting an inability to afford balanced meals and both types of food insecurity roughly doubled between 2001 and 2023, from 18.8% to 39.2%, and from 17.2% to 34.8%, respectively. Nearly half of all SNAP recipients reported having insufficient food in both 2015 and 2023. Note, however, that since households are not defined as receiving benefits in all years, this may be driven by tightening eligibility requirements.

To aid the interpretation of results, an overview of relevant theory and literature is helpful. Engel’s law states that as household income rises, the food share of income falls (Engel 1857, and Houthakker 1957). Moreover, Okrent and Alston (2011) show that the main exception to low cross-price elasticities between food categories is food away from home, which has some degree of substitution with “other foods.”<sup>4</sup> Similarly, households are more responsive on a month-to-month basis to changes in prices of food away from home, other food, and beverages, while other price responses only show up in annual data. Non-home food is thus more susceptible to changes in consumption habits. However, it is possible that some households will be unable to reduce expenditures through substitution if food spending was already optimally allocated before price increases. Meanwhile, elasticity for food is still low overall, and households that can afford to increase expenditure may thus do so.

Tying these strands together, households may have a few possible responses to rising food prices: (1) Spend more, such that the food share of income would increase, while other outcomes (food inflation-adjusted expenditure and insecurity) would remain unchanged. (2) Eat less, which would lead to a decrease in food inflation-adjusted food share of income and an increase in reports of insufficient food. (3) Substitute toward less preferable food (such as switching from non-home food to at-home food), which would lead to a decrease in the real food share of income, and perhaps an increase in reports of imbalanced meals (if, for instance, households switch from fresh to canned foods) while reports of insufficient food would remain unchanged. The combined measure of both food insecurities would allow for a combination of responses. Moreover, per Engel’s law, any aforementioned changes should be smallest for Q5 and largest for Q1. Any inference, however, is complicated by the fact that non-home food was less available (or desirable) during the pandemic, which will be discussed alongside the analysis.

Note also that if the price of food is increasing at a faster rate than income levels, household responses across income quintiles may vary even further, and will depend on budget constraints. This is partially because some foods may be classified as luxury goods, and the demand for such goods would increase more quickly if incomes stagnate while prices increase. Moreover, demand for foods that may be classified as “inferior goods” (such as instant noodles or fast food) would increase as the purchasing power of income decreases. Therefore, income is included as a control in the analysis to account for related changes, in addition to the sample stratification by income quintile. Given that income quintiles are defined so that households that moved more than one quintile are dropped in the main analysis, effects stemming from dramatic income changes are also excluded. Fixed effects account for time-invariant effects, and two robustness checks use different definitions of income quintiles in order to better understand these dynamics.

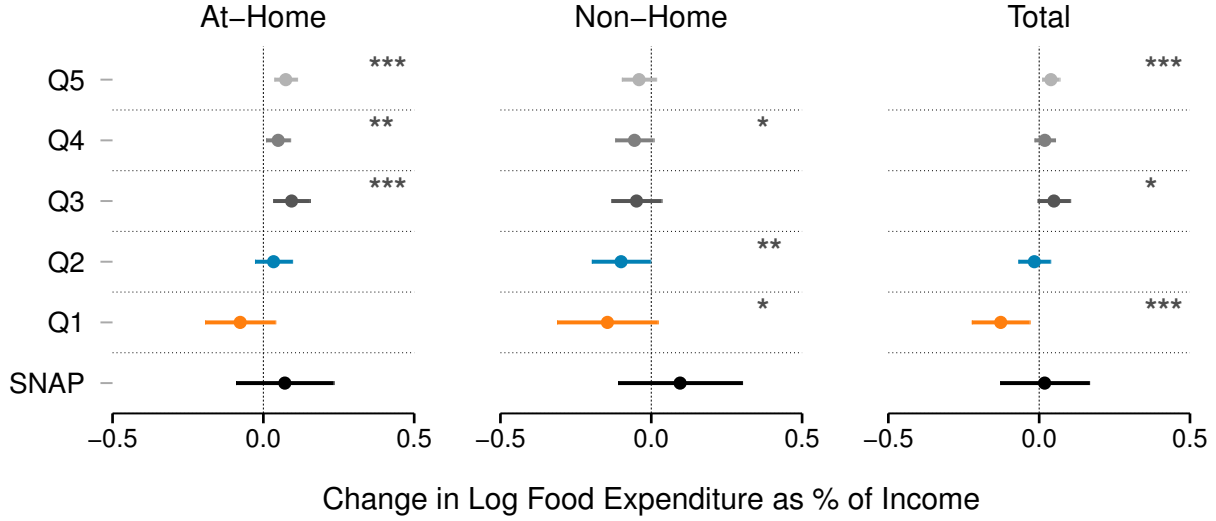
### 3. Quantitative Analysis

The analysis uses two-way (household and year) fixed effects regressions to estimate the change in household food expenditure between 2019 and 2023. Standard errors are clustered by household (see Bertrand *et al.* 2002 for details). The models thus account for all time-invariant household-level factors such as education and location.

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<sup>4</sup>“Other foods” includes fats and oils, sugars and sweeteners, and any uncategorized items.

Figure 4: 2023 Year Coefficients for Log Food Share of Income (2019-2023)



Note: Coefficients with 95% confidence intervals. Significance levels: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Regressions are two-way (household and year) fixed effects. Control variables are household size, log income, log housing expenditure, and log SNAP benefits (SNAP sample only). Standard errors are clustered by household. 2019 is the base year. All dollar values are in 2023 dollars.

The dependent variable is either the log of the ratio of food expenditure by type (adjusted using either general or food-specific indices) to income (always adjusted for general inflation), or a measure of food insecurity. A log income covariate is also included (see Section 2).<sup>5</sup> Other control variables are selected in keeping with the literature on food expenditure, including household size (Davis *et al.* 1983). The cost of housing is also controlled for because studies have shown potential association with food expenditure (Seo and Park 2021, Wong *et al.* 2020, and Zhang *et al.* 2022). Results for other models in the main analysis are in Appendix B. Full results for all robustness checks are available upon request, and can be estimated using the replication files. Statistically significant results are discussed below. Percentage changes in the food share of income are derived by exponentiating the coefficients and subtracting 1.

### 3.1. General Inflation-Adjusted Food Expenditure

Please note that the medians in Section 2 are not comparable to the sample in this analysis. This is because the sample has been restricted to households that moved no more than one quintile in the three survey years included in the analysis to avoid changes stemming from large shocks in income. For descriptive statistics associated with the regression samples, please see Appendix Table B.1.

Figure 4 shows the coefficients and 95% confidence intervals associated with the year 2023 by quintile, SNAP status, and food category. Full results are in Appendix Tables B.2, B.3, and B.4. Absolute income percentage points are calculated by multiplying the percentage

<sup>5</sup>Note that since the dependent variable is calculated as a share for each household before log transformation, mathematical issues do not arise, and the correlation between these variables is modest.

change by the median food share of income for each quintile (Figure 1) in 2019 (base year).

Households in Q3, Q4, and Q5 increased at-home food share of income on average by 9.8%, 5%, and 7.7%, respectively, which translates to 0.8, 0.3, and 0.3 p.p. more income (between \$390 and \$740) spent on at-home food. Q1, Q2, and Q4 decreased the non-home food share of income by 13.5%, 9.5%, and 5.4% in the same period (0.7, 0.5, and 0.2 p.p. less of their income), a decrease of between \$140 and \$210.

Households in Q1 decreased the total food share of income by 12% (2.5 p.p. of income, roughly \$510), while those in Q3 and Q5 increased it by 5% and 4% (0.7 and 0.3 p.p. of income, about \$440 and \$620), respectively. Therefore, higher-income households were able to expand the total food share of income, while households in Q1 cut it back.

Several robustness checks (Appendix Figures A.1–A.6) confirm the increases in at-home food shares of income for Q3, Q4, and Q5, as well as the decrease in the non-home food share of income for Q1. Most also show that the total food share of income increases for the top quintiles and decreases for Q1. Moreover, while the increase in total food share of income for Q3 is only significant at the 10% level, the result is robust to sample selection and inflation indices (Figures A.1–A.3).

Defining quintiles by 2019 incomes only (Figure A.1) does not confirm the decrease in total food share of income for Q1. To contextualize this result, the households in this sample include those that moved more than one quintile in the period of observation, as well as households in the main sample. Therefore, households that moved from Q1 to Q3 (or higher) did not reduce the proportion of income spent on food, which suggests that the result is driven by budget constraints facing households that remained in the bottom 40% of incomes (nearly 80% of all 2019 Q1 households). This pattern is further reinforced by the fact that total food share of income does not rise for Q5 when the sample includes 2019 Q5 households that fell to the bottom 60% of incomes by 2023.

Limiting the sample to households that were in the same quintile in all years also shows a decrease in the non-home and total food share of income for Q1 (Figure A.2).<sup>6</sup> Using the full sample (without quintile-specific drops) confirms the direction of and increases the statistical significance for all results, but larger changes in magnitude may stem from substantial income shifts (results available upon request). Hausman tests decisively reject random effects across all results and models.

### 3.2. Consumption-Focused Analysis

Questions about whether these results are driven by changes in consumption remain. Accounting for food-specific price inflation brings the analysis closer to a measure of food quantity (or quality, broadly defined) consumed by households. However, this is an imperfect proxy given that households may save on food expenditures in other ways, and that food price inflation may vary across households (due to location or urbanicity, for instance). Figure 5 shows the results with food-related variables adjusted for food-specific inflation. Note again that “real food share of income” refers to food-inflation-adjusted food expenditure

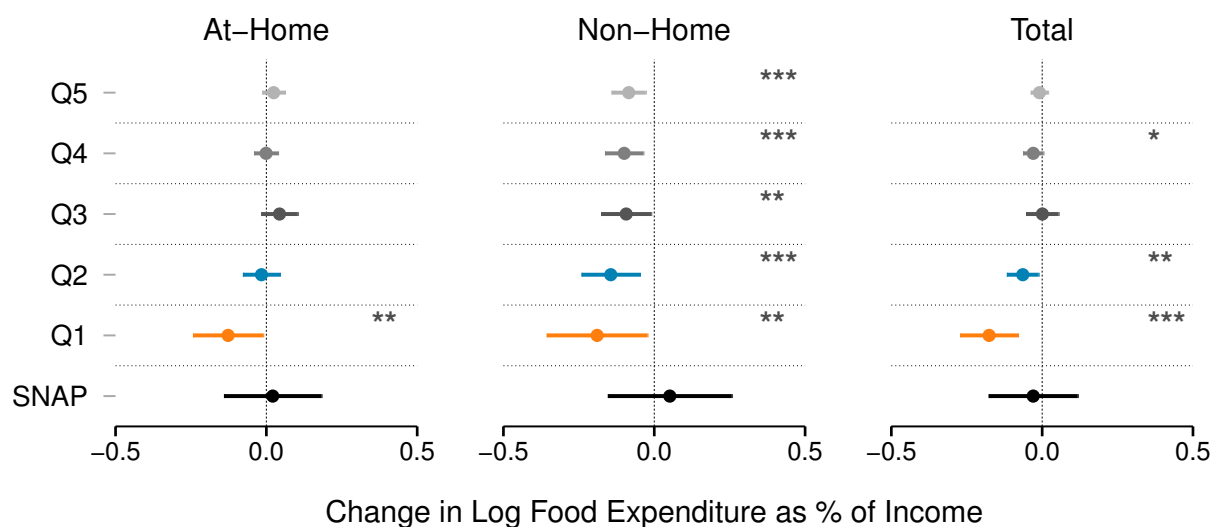
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<sup>6</sup>Other robustness checks include limiting the sample to households that spent at least 0% and at most 120% (Figures A.4 and A.9) or 80% of their income on food (Figures A.5 and A.10), dropping households with dependent variable values in the bottom or top 1% (Figures A.6 and A.11), and using the World Inequality Database’s inflation index (Figure A.3) (World Inequality Lab 2025).

divided by income (adjusted for general inflation).

Households across all quintiles reduced the real non-home food share of income (reduced quantity or purchased cheaper alternatives), with the largest decreases occurring for Q1 and Q2, which reduced it by 17.3% and 13.4%, respectively. Q3, Q4, and Q5 reduced real non-home food share of income by 8.9%, 9.5%, and 8.1%, respectively. Households may have reduced non-home food to save on expenses, but it is also possible that the shift is a relic of the pandemic (see 2021 coefficients in Appendix Tables B.2 through B.6). Moreover, households in Q1 decreased the real at-home food share of income by 11.9%, and those in Q1, Q2, and Q4 reduced their real total food share of income by 16.1%, 6.2%, and 2.9%, respectively.

Figure 5: 2023 Year Coefficients for Log Food (Adjusted for Food Price Inflation) Share of Income (2019-2023)



Note: Coefficients with 95% confidence intervals. Significance levels: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Regressions are two-way fixed effects. Control variables are household size, log income, log housing expenditure, and log SNAP benefits (SNAP sample only). Standard errors are clustered by household. 2019 is the base year. Food type-specific CPI indices are used to adjust food expenditure and SNAP values.

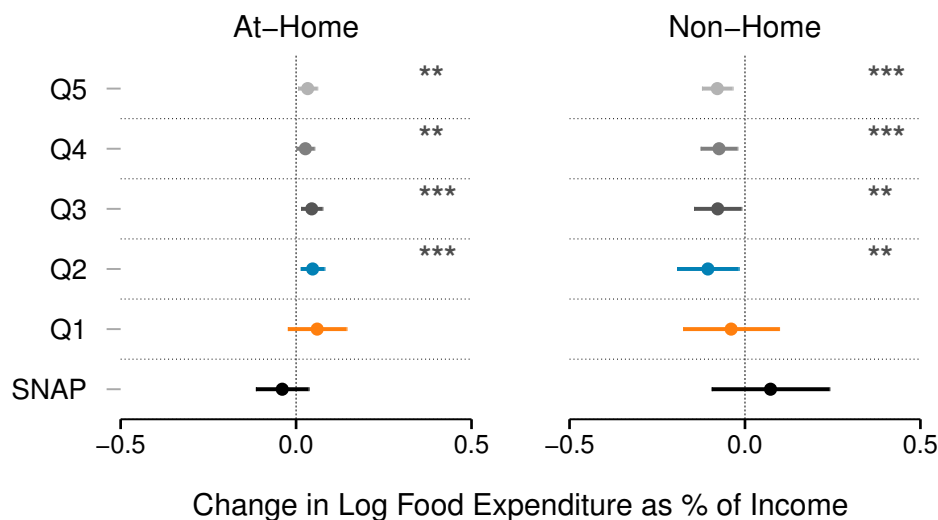
Nearly all robustness checks (including defining income quintiles by 2019 incomes in Figure A.7) confirm the uniform decrease in real non-home food share of income and the decrease in real total food share of income for Q1 and Q2 (Figures A.7–A.11). Strict quintile definitions show limited results (Figure A.8), only reflecting the decrease in real non-home food share of income for Q1, Q4, and Q5, as well as the decrease in real total food share of income for Q1. This may be due to a decline in sample size for the middle quintiles.

### 3.2.1. Conditional on Total Food Expenditure

As indicated in Okrent and Alston (2011), “since there appears to be considerable substitution between aggregate groups of foods, elasticities of demand conditional on total expenditure on food or on all goods are more appropriate for food policy analysis” (p. 97).

Analyzing food share of income by category (at-home, non-home, and total) conditional on total food expenditure isolates the substitution effect between the categories of food expenditure. Specifically, the analysis can indicate whether results stem from changes in allocation.

Figure 6: 2023 Year Coefficients for Log Food Share of Income (Adjusted Using Food Inflation Indices) Conditional on Log Total Food Expenditure (2019-2023)



Note: Coefficients with 95% confidence intervals. Significance levels: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Regressions are two-way fixed effects. Control variables are log of total food expenditure, household size, log income, log housing expenditure, and log SNAP benefits (SNAP sample only). Standard errors are clustered by household. 2019 is the base year. Food type-specific CPI indices are used to adjust food expenditure and SNAP values.

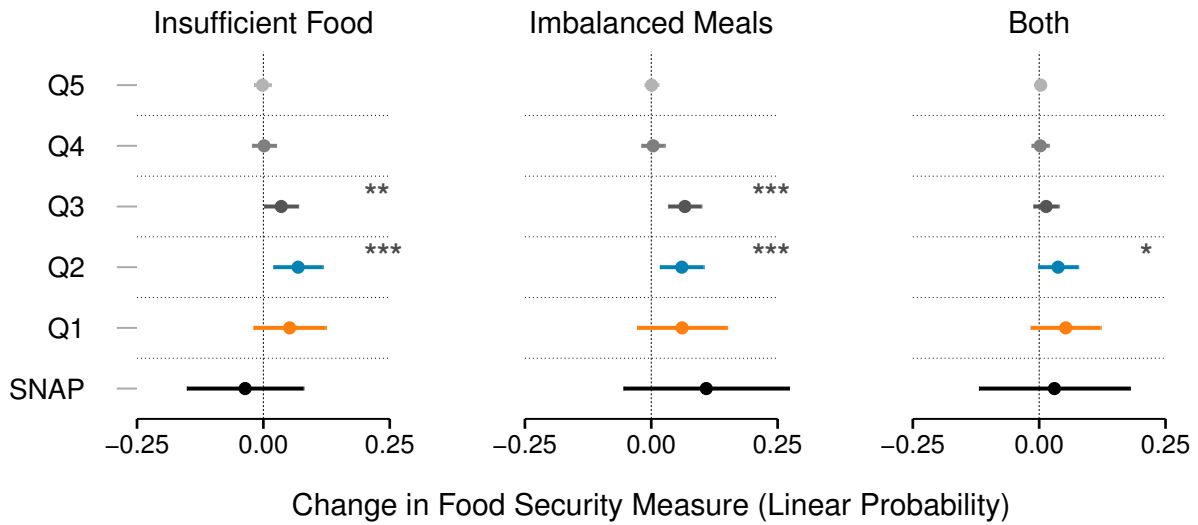
The results in Figure 6 are clear for Q3 through Q5, indicating that there is a substitution effect away from non-home and toward at-home food, though the causes remain unclear, and the shifts could stem from food price increases (as indicated in Okrent and Alston 2011) or reflect a lingering impact of the pandemic. The increasing magnitude for each successively lower quintile is in keeping with Engel's law.

The results for Q1, by contrast, suggest that changes for these households are not driven by the substitution effect. The findings from previous sections may instead stem from the decreases in total food expenditure, and could thus be driven by budget constraints. To test the significance of the 2023 coefficient for Q1 relative to Q5, Table B.10 limits the sample to the two quintiles and interacts each control variable with a dummy variable for Q1. The 2023 coefficient interacted with Q1 for both types of food is not statistically significant, suggesting that the effect is not statistically significantly different from Q5 (the reference group). The result in Figure 6, therefore, may be driven by the smaller sample size for Q1. It is still worth noting that the result in the Figure is in keeping with the results from Section 3.2, which for Q1 (unlike other quintiles) suggest decreases in the quantity or quality of both at-home and non-home food. It is also noteworthy that the results in the Figure are very stable and that the rough magnitude and significance are robust across nearly all inflation indices, data selection choices, and variable definitions (results available upon request).

### 3.2.2. Food Insecurity and Implications

The results for food insecurity measures are in Figure 7. These regressions use a broader set of controls, in keeping with food insecurity literature (Rabbitt *et al.* 2024), adapted for TWFE models. The results for Q2 are striking: in 2023, 7.1, 6.2, and 3.8 p.p. more households report insufficient food, being unable to afford balanced meals, and both types of food insecurity (respectively), as compared to 2019. Similarly, for Q3, 3.6 and 6.9 p.p. more households report insufficient food and being unable to afford balanced meals, respectively. The direction and significance of the results for Q2 and Q3, as well as the lack of results for Q4 and Q5, are also confirmed by a conditional logit model (results available upon request).

Figure 7: 2023 Year Coefficients for Food Insecurity Measures (2019-2023)



Note: Coefficients with 95% confidence intervals. Significance levels: \*  $p < 0.1$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Regressions are two-way fixed effects. The result is thus a linear approximation of the underlying probability function, and probabilities near the tails are thus likely to be imprecise. Other control variables are log total food expenditure, log income per person in the household, a dummy variable for children and one for stimulus payments, log housing expenditure, log of wealth, first differenced log of wealth, and log SNAP benefits (SNAP sample only). Standard errors are clustered by household. 2019 is the base year. See Section 2 for variable definitions.

The full results in Table B.7 indicate that having children is strongly associated with an increased likelihood of insufficient food among Q1 households, while increases in wealth since the previous period are weakly associated with this likelihood for Q2, Q3, and Q4.

## 4. Conclusions

Households in Q1 cut the total food share of income by 2.5 p.p. (about \$510), which stands out in contrast with the fact that households in Q5 increased it by 0.3 p.p. (or roughly \$620). While the absolute dollar values are relatively modest, especially as a proportion of Q5 incomes, the direction of the changes suggests that Q1 incomes are budget constrained,

while Q5 incomes are not. Meanwhile, households in Q3, Q4, and Q5 also increased at-home food share of income (\$390–\$740), while Q1, Q2, and Q4 decreased the non-home food share of income (\$140–\$210).

Food-inflation-adjusted figures strongly suggest decreases in the quantity and/or quality of non-home food consumed by all quintiles, total food consumed by Q1 and Q2, and at-home food consumed by Q1. The conditional results support this conclusion by showing clear shifts away from non-home food toward at-home food for Q3, Q4, and Q5. Moreover, the results for Q1 strongly suggest that the changes in real food share of income by category (11.9% and 16.1% decrease in quantity and/or quality for at-home and total food consumption, respectively) are driven by a decrease in total food expenditure rather than straightforward substitution effects. Overall, Q1 and Q2 cut expenditure or quantity, Q2 and Q3 substituted toward healthier meals, and Q5 increased food expenditure.

Several limitations are worth noting. First, the results about food expenditure for the top four quintiles cannot be easily decomposed into effects stemming from the pandemic and prices. More broadly, the methods used in this paper are not sufficient to establish causality. A breakdown of food by type is not available in the PSID, which prevents granular consumption analysis. Moreover, my analysis does not account for regional or local variation, and the data does not permit a deeper analysis of the role of bargain hunting, couponing, bulk grocery shopping, or other money-saving methods. The biennial PSID survey likely also misses more detailed variation by year. It is also important to interpret the food insecurity results with caution, given they are a linear approximation of the underlying probability function.

Future research may further divide the sample by geographic region to assess variation in both prices and income dynamics. Studies may also use other datasets such as the Survey of Consumer Finances for household analysis, which provides more detailed and substantiated spending data. Additionally, a closer evaluation of the role of SNAP benefits in these results is worthwhile. Policymakers should note the increases in food insecurity among Q2 and Q3, as well as the decline in food expenditure for households in Q1. Given that the results do not show significant increases in food insecurity among SNAP recipients, expansion of benefits may provide relief for lower-income households.

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