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THREE ESSAYS ON CONSUMER AND RETAILER FOOD RESPONSES TO NATURAL DISASTERS AND DISRUPTIVE EVENTS

A Dissertation in

Energy, Environmental, and Food Economics

by

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ABSTRACT

With increasingly frequent extreme events and higher risks of disruptions for consumers and businesses, understanding responses to emergencies is key to anticipating vulnerabilities and bottlenecks following a natural disaster. However, very few studies provide in-depth investigations of consumer and retailer responses to past major disasters with regards to one of the most basic necessities: food. Using the United States as context, this study examines food responses around disaster events and its heterogeneous impact across consumers and retailers. Results indicate that, when faced with a looming hurricane, shoppers in affected counties stockpile an extra 1 to 4 days of particular items on top of their normal weekly purchases while retailers, on average, are prepared for the corresponding size of stockpiling, except for bottled water. In a region less acquainted with hurricanes, late stockpiling preparations during 2012's Hurricane Sandy happened at most retailers for bottled water and food but different retailers ran out of several products. While other households stockpiled bottled water – by more than half their usual weekly volume – a week before Sandy struck, low-income households did not and were at risk of lacking sufficient clean water. More recently, however, during the early stages of the Covid-19 pandemic and amidst the sudden shrinkage of dining-out options, households improved the diversity and healthfulness of their grocery purchases, with food healthfulness increasing the most for high income households.

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ACKNOWLEDGEMENTS

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Chapter 1

Consumer food stockpiling and retail recovery before, during, and after U.S. hurricanes

Introduction

Consumers tend to substantially increase their food purchases from retailers to stockpile supplies ahead of an expected environmental emergency event such as hurricanes. This purchase behavior inflicts pressure on retailers who experience a surge in sales within a short period of time in response to perception of impending scarcity during wartime or following natural disasters (King & Devasagayam, 2017; McKinnon et al., 1985; Stiff et al., 1975; Su, 2010). Non-perishable food and bottled water are among items most often stockpiled by households when faced with hurricanes or earthquakes (Baker, 2011; Kawashima et al., 2012). The severity of these natural events often reduces retailers' access to their source of resupply as use of resources and transportation routes may be prioritized for government emergency efforts. At the same time, retailers' capability to optimally restock its shelves with essential items is crucial to the recovery of hurricane-hit communities directly following the aftermath, such as post-Katrina (Horwitz, 2009; Hu et al., 2013; Lodree & Taskin, 2009; Münzberg et al., 2016; Taskin & Lodree, 2016). This concern is becoming more urgent as climate change has been shown to exacerbate the hazards and potential economic costs of hurricane seasons on areas already facing hurricane risks (Dinan, 2017; Lim et at., 2018; Marsooli et al., 2019; Pant & Cha, 2019).

This study is directly related to earlier research on hurricane-induced stockpiling. Using regression analyses and event-study graphs, Beatty et al. (2019) finds that sales of emergency supplies substantially increase right before the forecasted hurricane landfall for a sample of 26 hurricane landfalls before fall of 2012. To obtain this finding, the study merged geographic, demographic, and weather data with extensive scanner data on weekly sales of bottled water, batteries, and flashlights from 2002 to 2012. Beyond investigating the consumer behavior, Pan et al. (2020) investigates store-level post-hurricane recovery capability and finds that consumer pre-hurricane stockpiling negatively affects retail stores' ability to provide the variety of product choice in the week following the hurricane. Using a similar store-level weekly sales data on bottled water, their paper utilizes a range of

supply-side, demand-side, and disaster characteristics as independent variables to first estimate the percentage increase of store sales during the last week before the contact with the hurricane compared to the average weekly store sales of the four weeks prior. The study then estimates in-store product availability in five weeks following the hurricane contact using the predicted pre-hurricane consumer stockpiling propensity.

This study contributes to the research on economic and business disaster response by highlighting retailer supply recovery capabilities while revealing consumer stockpiling propensity across different food items. This study uses store-level supermarket scanner data in the United States (U.S.) to estimate consumers' propensity to stockpile a number of food or grocery items before an incoming hurricane. Beatty et al. (2019) and Pan et al. (2020) also makes use of hurricane data in a similar way in their investigations. Following their works, this study also makes use of U.S. Census Bureau data on county- and state-level demographic data. While communities in coastal areas are expected to be well-informed of being located in areas prone to annual hurricane seasons, this paper suggests that stockpiling remains a significant behavior closer to contact with a hurricane and asks two questions of interest. How much do consumers in proximity to hurricane events – by location and time period – stockpile across different food categories shortly before an impending hurricane? How does such behavior affect the ability of retailers to restock their supplies to ensure the availability of those food items on their shelves in the following weeks?

Building on those previous works, this paper extends the investigation of pre-hurricane consumer stockpiling and post-hurricane retailer performance to several food categories and toilet paper. The food categories include peanut butter, dry pasta, canned beans, as well as frozen meats. Most of these foods are non-perishable foods listed in hurricane preparation grocery checklists and some have also shown increased purchases in United Kingdom early on during the recent pandemic in 2020 (NFS, 2020). Investigating multiple products allows the possibility of observing how the representative consumer's food purchase basket changes as households tend to stockpile items in response to an approaching hurricane. The in-store availability of these product categories in weeks following the hurricane reveals the retailers' preparedness across different food categories in the face of a relatively foreseen natural disaster. Understanding these retail mechanics will improve both retailer and government response strategies in dealing with hurricane seasons as they potentially become more intense and costly when coupled with environmental changes due to climate change.

In investigating the hurricane-driven phenomenon of consumer stockpiling and retailer response in each product category of interest, this paper conducts its analyses using two approaches. The first approach employs event-study analysis, such as employed by Beatty et al. (2019). Meanwhile, the second approach involves a two-step procedure designed by Pan et al. (2020). In this

two-step procedure, the first step is done by estimating the consumer propensity to stockpile at the final week before the hurricane's contact with the retail stores. The second step is estimating the impact of the stockpiling behavior on availability of products within each food category for weeks during and directly after the hurricane. By including a range of food categories aside from bottled water, this study expands the literature on disaster response behavior in regions frequented by hurricane disasters.

Methodology and Data

Event-study Method

The first approach is to use event-study graphs to describe the change in average weekly store sales trends induced by proximity to the hurricane. Two phenomena are of specific interest, namely the late stockpiling purchases – on or right before the week of the hurricane – and the category-specific stockout due to retailers' inability to resupply their shelves in time during the following weeks. More specifically, for each product category, late stockpiling purchase phenomenon is investigated using regressing volume sold on a set of dummy variables and their interactions while store stockout phenomenon is investigated by regressing count of unique Universal Product Codes (UPCs) sold.

To generate values for plotting into the event-study graphs, this study employs difference-in-differences (DiD) method for each week (relative to a hurricane week) for each hurricane event. The first difference is between observations at hurricane-affected stores and unaffected stores (see Figure 1-1). The second difference is between observations from the year of the hurricane and observations exactly a year prior (at the same week of the year) as the control year, assuming the prior year observations do not contain another hurricane event. The parallel trend assumption is that, had the hurricane event not happen, the average year-to-year trend of dependent variables for the hurricane-affected stores during that year would be the same as the average year-to-year trend at unaffected stores. Hence, observations from unaffected stores in the sample are used to build the counterfactual week-to-week trends.

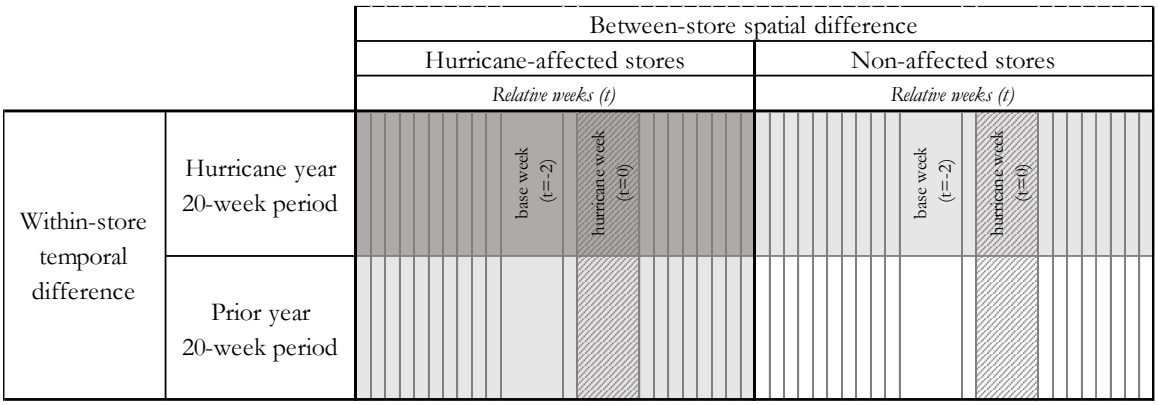

Figure 1-1: Structure of store-week observations for each hurricane event

With the hurricane week defined as week t=0 for a hurricane event, this study includes observations from week t=-11 until week t=8 for both the year of the hurricane and the year before, thereby covering a total of 40 weeks of observations for a hurricane event. Week t=-2 is selected as a base week from which all observations are differenced against. The base week is set at week t=-2 because this time gap is just beyond the National Hurricane Center (NHC)'s 5-day cone of uncertainty for the forecasted hurricane paths. Therefore, it is generally assumed that the population in a county would not be aware of any hurricane threat 2 weeks before the hurricane makes contact with the county. At one week before contact with the hurricane, counties within the cone of uncertainty are likely to start hurricane preparations to evacuate or brace for impact. Week t=-2, therefore, would be the last "normal" week of sales or shopping before consumers switch to purchasing for hurricane preparations. Aside from selecting a base week, this study refrains from assuming the exact timing of the stockpiling and stockout phenomena. The results of this approach, therefore, can be interpreted as changes relative to the last known "normal" sales week, having already controlled for seasonal effects. Each product category is analyzed separately.

To plot coefficients that can approximately be interpreted as percentage changes, the main empirical model for the DiD approach employs a log-linear model according to the equations:

$$\begin{aligned} lnVolume_{i,t,y,h} = \alpha_h + \sum\nolimits_{t,h} \delta_{t,h}\left(Threat_h x\ HurricaneYear_h x\ RelativeWeek_{t,h}\right) \\ + \gamma_{1,y,h} Threat + \gamma_{2,y,h} HurricaneYear \\ + \gamma_{3,y,h}(Threat\ x\ HurricaneYear) + \Omega_{w,h} SFE_{i,w,h} + \Phi_{w,y,h} OSE_{i,w,y,h} \\ + \varepsilon_{i,t,y,h} \end{aligned} \quad (1\text{-}1)$$

$$lnUPCcount_{i,t,y,h} = \alpha_h + \sum_{t,h} \delta_{t,h}\left(Threat_h x\ HurricaneYear_h x\ RelativeWeek_{t,h}\right) + \gamma_{1,y,h} Threat + \gamma_{2,y,h} HurricaneYear + \gamma_{3,y,h}(Threat\ x\ HurricaneYear) + \Omega_{w,h} SFE_{i,w,h} + \Phi_{w,y,h} OS_{i,w,y,h} + \varepsilon_{i,t,y,h} \quad (1\text{-}2)$$

where *i* is the index for individual stores, *t* for the relative week, *w* for week of the year, and *y* for year, and *h* for the hurricane event. while ε is the error term. *Threat* is an indicator variable that takes the value of 1 if the store is a hurricane-affected store for hurricane event *h* and 0 otherwise, while its coefficient captures the average time invariant location effect for the hurricane *h* sample period. A store is defined to be affected by hurricane *h* if it is located in a county whose centroid is within 100 miles of the path of hurricane *h* at the year of hurricane *h*, therefore most likely to have experienced the hurricane's threat and direct impact. This distance has been considered to be the salient proximity in triggering stockpiling response by consumers in Beatty et al. (2019) and Pan et al. (2020). *HurricaneYear* is an indicator variable for the year of the hurricane event *h* and its coefficient captures the year fixed effect. *RelativeWeek* variables are indicator variables for each week *t* relative to hurricane event *h*. The main independent variables of interest are the interaction terms between *Threat*, *HurricaneYear*, and *RelativeWeek*, with the corresponding coefficients δ capturing the hurricane event- and week-specific impact for stores within the 100-mile radius of the respective hurricane's path in terms percentage change relative to the base week *t*=-2. Due to including the interaction term between *Threat* and *HurricaneYear*, δ_{-2} will be zeroed as the two-way effect for each hurricane event is fully absorbed by the coefficient γ_3. *SFE* vector of variables include indicators for annual events (Thanksgiving week, New Year's week, and July 4th) to control for seasonal fixed effects known to increase sales. *OS* vector of variables include indicators to control for shock events – such as other disasters – during the sample period (Hurricane Edouard 2007, major 2007 heat wave, Hurricane Irene 2011, Hurricane Gustav 2017). Carrying the interpretation as county-level average treatment effect on treated (ATET) stores, the coefficient estimates of δ for each hurricane event *h* are then plotted against relative week, overlaid against estimates from other hurricanes in the same event-study graph.

As week *t*=0, the hurricane week for *h* is defined as the sales week in which the path of hurricane *h* is at minimum distance to the county's centroid, following Pan et al. (2020). Consequently, the sample includes 11 prior sales weeks as *t* = -1, -2, …, -11 and 8 following sales weeks as *t* = +1, +2, …, +8. Then weekly observations from the same time exactly a year before is

appended and the weeks indexed as if the hurricane event happened exactly a year before. Therefore, late pre-hurricane stockpiling is deemed evident in a hurricane event if any of its estimates for δ_{-1} and δ_0 from Equation 1-1 are statistically significant, positive, and larger (in absolute terms) than the magnitudes of estimates in other relative weeks. Stockout is deemed evident during a hurricane event if any of its estimates for δ_0 and δ_1 from Equation 1-2 are statistically significant, negative, and larger (in absolute terms) than the magnitudes of estimates in other relative weeks. If the δ estimates for the adjacent future week are statistically significant and negative, it is deemed that the stockout is prolonged. From the results of earlier studies, this study expects to see consumers significantly increase purchases from a store – to stockpile on volume – one week before the hurricane week or during the hurricane week, or at week t=-1 and t=0, respectively. From results of Pan et al. (2020) and Levine and Seiler (2022) on bottled water, this study expects store stockouts to happen most prominently during or a week after the hurricane, namely weeks t=0 and t=1. While some individual stores may experience prolonged stockouts, results from both those studies suggests that hurricane-hit retailers, on average, fully recover to normal sales by week t=2.

Expanding from prior literature by including different food categories, this study expects to see differences in magnitude of consumer stockpiling and the resulting stockout – if any – across product categories. For non-perishable foods requiring zero preparation before consumption, such as peanut butter and canned beans, stockpiling is expected to be substantial and clearly evident as for bottled water. For non-perishable foods requiring preparation before consumption, such as dry pasta, stockpiling is expected to be minimal. For perishable foods requiring energy for both storage and consumption, such as frozen meats, stockpiling is not expected. Lastly, for non-perishable hygiene products, such as toilet paper, some stockpiling is expected. Subsequently, the study expects to confirm stockouts for popularly stockpiled foods such peanut butter and canned beans, along with bottled water. Expecting that product categories requiring any preparation are not popular as stockpile items, stockouts are not expected in dry pasta and frozen meats. Finally, stockouts are not expected to be evident for non-perishable hygiene products – such as toilet paper – as they are not likely to be stockpiled due to lower priority when compared to food for survival.

To estimate regression Equation 1-1 and Equation 1-2, this study makes use of the command *reghdfe* in Stata package designed by Correia (2017) which runs linear regressions that allow multiple levels of fixed effects. Zero volume or UPC count observations are naturally dropped from the sample and considered as random. At store-week level, zero sale for a whole week is very rare and is not likely to be systematic. This study clusters standard errors at county level (*geoid*) and year to account for unobserved county-year-specific trends. All regressions are run using STATA 17.0.

Two-step Procedure Approach

This approach is based on Pan et al. (2020)'s two-step procedure of investigating consumer stockpiling propensity and then measuring the impact of predicted stockpiling propensity on in-store product availability. Instead of using store-week-year observations such as in the event studies approach, this procedure is conducted using store-hurricane observations The first step involves estimating consumer stockpiling propensity – in terms of volume sold – during the week before the hurricane using various store-level, retailer-level, county-level, and state-level control variables. The second step involves regressing in-store product availability in terms of UPC count sold – for the hurricane week and each of the 4 following weeks, separately – on consumer stockpiling propensity predicted in the first step, thereby employing a two-stage least squares (2SLS) method of regression. The 2SLS method is employed because consumer bottled water stockpiling is considered to be endogenous. Consumers who normally depend on bottled water are likely to stockpile supplies regularly despite there being a hurricane, thereby confounding the consumer propensity to stockpile prior to a hurricane event.

Using the store data in a different structure, this approach requires 10 consecutive weeks of store data for each store-hurricane pair. For a hurricane event, the hurricane week is the LATE week, which is defined as the week at which the store county's centroid is nearest to the hurricane path. The prior week is the EARLY week (see Figure 1-2). The PRE-event period is then defined as the four weeks prior to the EARLY week. The POST-event period is defined as the four weeks following the LATE week: each week labelled from POST1 week to POST4 week in chronological order.

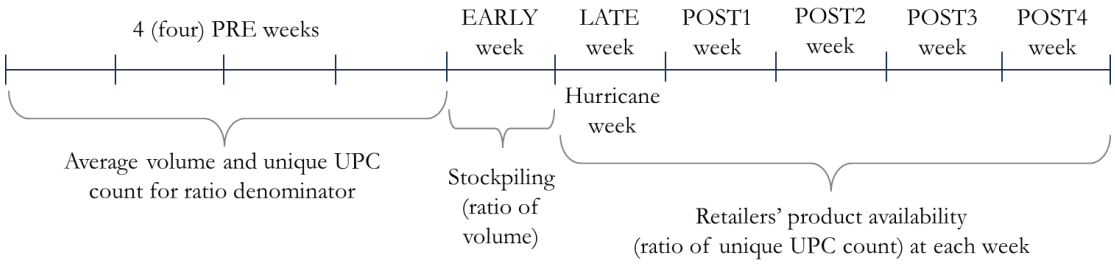

Figure 1-2: Temporal definition of weeks surrounding a hurricane event for a store

In the first step of the procedure, consumer stockpiling propensity (*StockPropEarly*) is regressed on a set of variables. For each store-hurricane, consumer stockpiling propensity is calculated as the ratio of volume sold – in ounces or counts – of the product category during the EARLY week to the average weekly volume of the four-week PRE-event period. However, unlike

Pan et al. (2020)'s use of log-level regression, this study maintains a level-level regression to keep store observations with zero volume sold during the EARLY week. Stores geographically far from the hurricane path are expected to continue sales under business-as-usual with consumer stockpiling propensity values not significantly different from 1. With storm warnings issued by government and weather agencies a few days ahead of the hurricane contact, this study expects to consumer stockpiling propensity to be significantly greater than 1 for stores located in counties within 100 miles of the hurricane path. The regressors include product-specific variables, store-related variables, and county- or state-level demographic variables. The regression for this step follows the equation below:

$$StockPropEarly_{i,h} = \alpha_h + \beta_{1,h} Threat_h + \sum_f \left(\theta_{f,h} RetailFormat_f\right) + \Omega_{i,h} X_i + \tau_{parent} + \varepsilon_{i,h} \quad (1\text{-}3)$$

where individual stores are indexed by i and hurricane events are indexed by *h*, and ε is the error term. X is the vector of independent variables controlling for factors affecting general stockpiling with Ω as its vector of coefficients. *RetailFormat* are dummy variables indicating the store's retail chain format – food grocer, mass merchandiser, or drugstore – with θ as the corresponding coefficients. Parent retailer fixed effects are included. In Equation 1-3, β_1 is the coefficient of interest which represents the hurricane's effect on consumer stockpiling behavior. Assuming that location of a store is exogenous to consumer propensity to stockpile from that store, this study expects β_1 to be significant and positive to show that proximity to the hurricane path causes higher propensity to stockpile one week before the hurricane.

This approach closely follows Pan et al. (2020)'s definition of the weeks surrounding a hurricane event. For each store-hurricane observation, an influence date is selected based on the date at which the store is nearest to that hurricane. The nearest distance (*hdist*)is calculated as the minimum straight-line distance between the store's county centroid – according to U.S. Gazetteer Files (U.S. Census Bureau, 2017) – and the recorded hurricane's path coordinates – obtained from Extended Best Tracks (EBT) dataset by Demuth et al. (2006). However, this study differs from Pan et al. (2020) by not including *hdist* itself directly as an independent variable. Instead, a *Threat* dummy variable is defined to take on the value of 1 if a store-hurricane's *hdist* is lower than or equal to 100 miles, and 0 otherwise, during hurricane *h* sample period. Instead of Pan et al. (2020)'s spatially continuous hurricane treatment using *hdist*, a binary variable allows the interpretation of hurricane treatment by comparing between hurricane-affected and non-affected stores. Similar to the event-study approach, the 100-mile cutoff is adopted from Beatty et al. (2019)'s 100-mile impact radius from landfall. Without data on inundation and property damages to the store's neighborhood, this study also includes the hurricane's average wind speed (*hur_track_wind*) – indicating the wind's

intensity – on the day of its nearest distance to the store to control for the hurricane's extent of damage to the area.

In the second step of the procedure, in-store product availability (*ProductAvail*) – at each of the EARLY, POST1, POST2, POST3, and POST4 week – is regressed on predicted consumer stockpiling propensity and on a set of variables, using only the subset of stores within 100 miles of hurricane paths. In-store product availability is measured using the ratio of count of UPCs sold (for the product category) in the LATE (or each of the POST) week to the weekly average count of UPCs sold in the same product category during the PRE-event weeks. Effectively, each of these regressions is a 2SLS regression involving instrumental variables that takes consumer stockpiling propensity as the dependent variable in the first stage regression.

Following first stage regressions, the regressions for the second stage follow the equation:

$$\begin{aligned} ProductAvail_{i,week,h} &= \alpha_{week,h} + \beta_{1,week,h} PredictedStockPropEarly_{i,h} \\ &+ \sigma_{week,h} VolumeChange_{i,week,h} + \sum_f \left(\theta_{f,week,h} RetailFormat_f\right) \\ &+ \Omega_{i,week,h} X_i + \tau_{parent} + \varepsilon_{i,week,h} \end{aligned} \quad (1\text{-}4)$$

where all components are identical to Equation 1-3 except for the additional week index (to indicate LATE, POST1, POST2, POST3, or POST4 week), the dependent variable *ProductAvail*, the predicted regressor from the first stage regression (*PredictedStockPropEarly*), and a control variable *VolumeChange* that measures the percentage change in volume sold at the store that week compared to the store's PRE-week average. All regressions are run using STATA 17.0.

Instrumental Variables

Considering pre-hurricane purchases of bottled water to be endogenous, Pan et al. (2020) employs instrumental variables that relate to industrial water use in the county where the store is located. Specifically, they included volumes of ground fresh water, ground saline water, surface fresh water, and surface saline water used by the county – obtained from U.S. Geological Survey – as instruments. Since industrial withdrawal of water is historically driven by available water supply in the area, especially fresh surface water (Dieter et al., 2018), Pan et al. (2020) argues that industrial water use reflects the state of water resources in the county and may correlate with bottled water purchases but not directly affect retailer's product availability decisions.

To accommodate a broader range of food stockpiling purchases, this study must select instruments that are correlated with consumer stockpiling propensity across product categories. The

relevance and exogeneity rule require these instrumental variables to influence stockpiling propensity (Step 1) but not directly influence in-store product availability (Step 2), respectively. As such, this study selects instruments related to household food storage capacity. Consumers with large food storage capacity tend to maximize its use by purchasing in bulk or large volume, even in normal times, because buying in large volumes per shopping trip is cheaper, as well as more time- and energy-efficient. Therefore, this study makes use of three instrumental variables: number of vehicles in the county (*vehicles*), county's median income (*medincome*), and the store's past year thanksgiving season green bean stockpiling (*thgstockp*). All three of these instruments are selected to reflect the consumer's capacity for stockpiling. Since bulk purchases require the physical capability of carrying additional weight of purchases, having access to personal vehicles are more advantageous than relying on public transport, especially when the product is bulky in volume. Personal vehicle ownership, however, is not directly correlated with retailer decisions on restocking shelves post-hurricane since use of personal vehicles depend more on population density than hurricane risk. The county's median income reflects the general consumer's financial capacity to forward purchase by buying in bulk to store for several weeks. Although higher median income is expected to afford higher upfront purchases, it is not necessarily a strong indication – compared to mean income – of county infrastructure quality that may contribute to retailers' ability to resupply inventories post-hurricane. Thanksgiving season green bean stockpiling indicates household capacity to cook large volumes of food for themselves or to host other people, hence the capacity to purchase in bulk for personal or social events, even without any hurricane threat. Green bean stockpiling, however, is not likely to be directly related to retailer decisions on product availability after a hurricane as green beans tend to require energy in its preparation before consumption, hence not popular for stockpiling or post-disaster recovery during power-crippling disasters.

Data

This study includes product categories listed on the hurricane preparedness checklist by Direct Energy (2016) – peanut butter, canned beans, bottled water, dry pasta, toilet paper – as well as frozen meat. Included hurricanes are Ike 2008, Sandy 2012, and Harvey 2017. For each hurricane, only stores in counties with the calculated nearest distance (*hdist*) within 1,000 miles of the hurricane path are included for that hurricane's sample, following Pan et al. (2020).

Store-level retail volume and UPC count sold is obtained from the Nielsen Retail Scanner data provided through Kilts Center at The University of Chicago Booth School of Business. Store sample sizes for each product category differ because not all stores sell all product categories. For

each of the product categories, this study includes data from 20 sales weeks around the hurricane – and those from the same relative time the prior year – that includes weeks from 2006-2008 (for Ike 2008), 2010-2012 (for Sandy 2012), and 2015-2017 (for Harvey 2017).

Other supporting data include county information and paths of each hurricane. County-level characteristics – such as median income and country centroid coordinates – are obtained from U.S. Gazetteer Files (U.S. Census Bureau, 2017) . Meanwhile, historical hurricane path coordinates are obtained from Extended Best Tracks (EBT) dataset by Demuth et al. (2006), with hurricane-specific average wind speeds (*hur_track_wind*) calculated using the same data.

Results

Event-study Plots

The results for volume regressions for each hurricane event based on Equation 1-1 are plotted against relative weeks in one event-study graph for each product category[1]. Errors are clustered at both county- and week- level. The base week is selected as week t=-2 for all hurricane events, resulting in all plots expectedly showing zero at week t=-2 as the location-week effect is fully absorbed by the coefficient of the interaction term between *Threat* and $RelativeWeek_{-2}$.

In Figure 1-3, the hurricane's impact on pre-hurricane purchase volumes (at t=-1) is most visible for bottled water, with 71.2% volume increase during Harvey (51.3%), then Sandy (39.1%) and Ike (36.4%). For canned beans, pre-hurricane purchases are evident with 36.0% increases during Harvey but relatively smaller during Sandy and Ike. Although dry pasta and toilet paper show similar positive volume changes a week before hurricanes, the magnitudes are relatively small – 20% or less. Finally, frozen meat volumes do not show consistent patterns, confirming its role as the "placebo".

[1] The regression output summaries for Figure 1-3 and Figure 1-4 are provided in Appendix A Table A-1 – A-6 based on product categories

Figure 1-3: Event-study plots of weekly percentage changes in volume around hurricanes

In investigating the retailer stockout phenomenon using results from regressions based on equation (2), Figure 1-4 shows that post-stockpiling UPC count sold is most adversely affected for bottled water across all hurricanes, but not for peanut butter. Peanut butter change in UPC count remained positive, indicating no stockouts at stores, on average. Bottled water UPC count drop is largest during Harvey (-12.3%) and Ike (-9.4%) at week t=0 – both suggesting stockout accompanied by sales recovery over 2 weeks – while the possible stockout during Sandy happened later at week

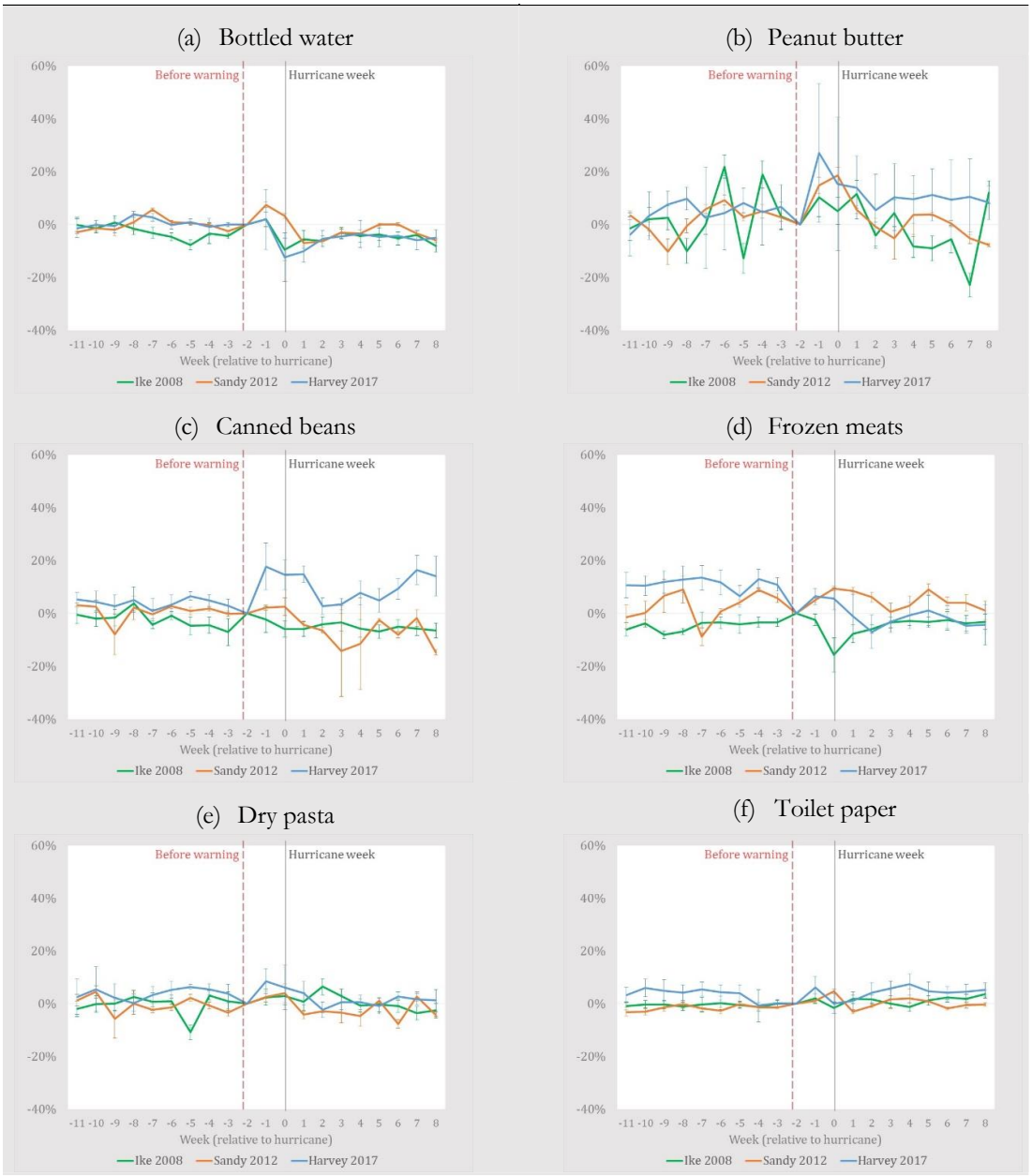

Figure 1-4: Event-study plots of weekly percentage changes in unique UPC count around hurricanes

t=1. This late drop in UPC count for Sandy is also observed in canned beans, dry pasta, and toilet paper. In additional to continued positive UPC count changes in frozen meat, the patterns suggest the presence of a hurricane characteristic that distinguishes Sandy from the other two hurricanes.

Since UPC count sold would have increased (instead of decreased) had consumers substituted their preferred UPCs with different UPCs or brands when the preferred ones are temporarily out of stock (Levine & Seiler, 2022), this study continues to investigate deeper for peanut butter and bottled water by counting the number of unique UPCs only for the most popular brand in each product category. Assuming demand inelasticity for the most popular brand, volume sold for

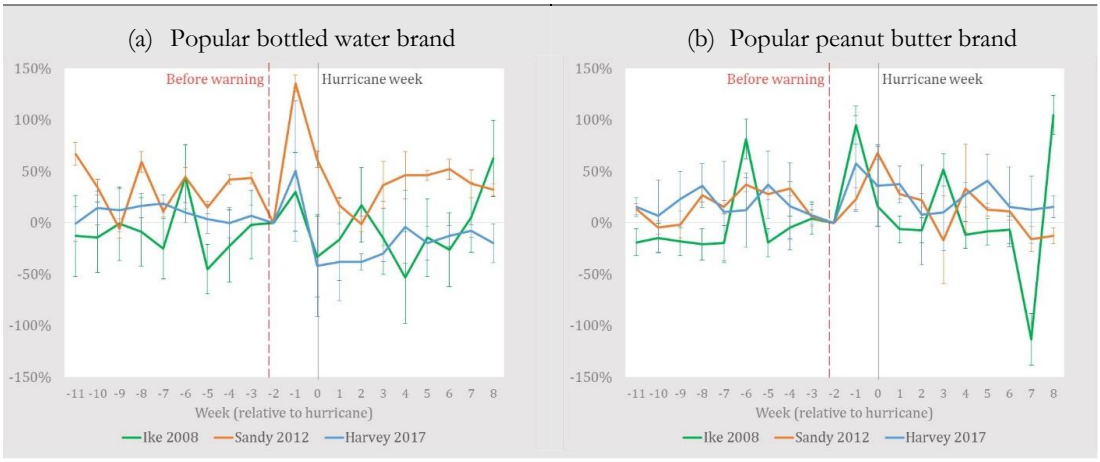

Figure 1-5: Event-study plots of weekly percentage changes in volume of popular brands around hurricanes

that brand is likely to be highly stable across weeks, only to be negatively affected by its product's disappearance from the store shelves. This approach only requires regressions based on Equation 1-2 and effectively controls for UPC variation, thereby attributing any volume changes to disruption caused by the hurricane on retailer resupply efforts. Figure 1-5 shows that, based on their respective top brands, negative volume changes for bottled water are evident during Harvey and Ike – but not Sandy – while volume sold remains non-negative for peanut butter[2]. These results suggest that stores affected by Harvey and Ike suffered some bottled water stockouts, on average, but stores did not run out of peanut butter during any of the hurricanes, even after consumers stockpiled from the stores.

[2] Regression output summaries are provided in Appendix A (**Error! Reference source not found.** and Table A-8)

Two-step Procedure

A quick look at the unconditional means of consumer stockpiling propensity at the EARLY week across product categories reveal that stores outside the 100-mile radius do not experience significant heightened purchases, indicated by mean values that are very close to 1 (see Figure 1-6). Stores within 100-mile radius, on average, see significantly higher stockpiling propensity for bottled water (up to 1.8 times the average weekly volume) and higher propensity – although not significant – for peanut butter and toilet paper.

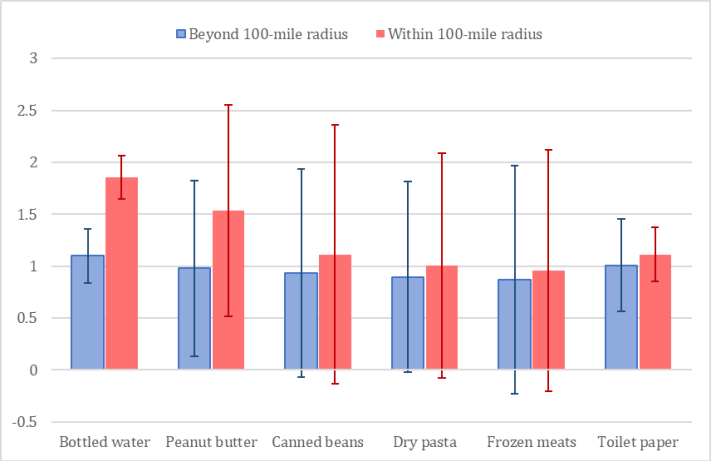

Figure 1-6: Unconditional means of consumer stockpiling propensity in EARLY week

A quick glance at unconditional means of in-store product availability at LATE week of a pooled sample across stores of different retail formats in Figure 1-7 shows that the in-store product availability did not significantly change from the PRE-weeks across all 6 product categories.

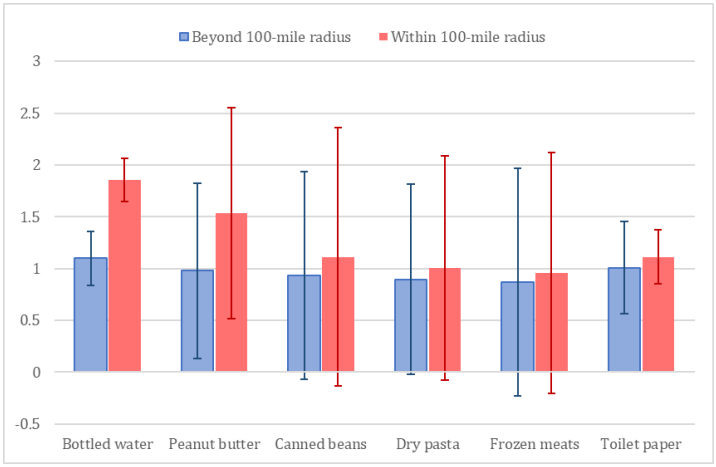

Figure 1-7: Unconditional means of in-store product availability for LATE week

Results from regressions using Equation 1-3, the results in Table 1-1 confirms that hurricane events spurred consumer stockpiling in all six product categories the week right before the hurricane. The average effect is largest for bottled water (52.5%) and peanut butter (50.2%). Canned beans (20.5%) and – surprisingly – frozen meats (17.1%) show some stockpiling, while dry pasta and toilet show relatively small increase in purchases of 10.5% and 7.9%, respectively. Other independent variables are showing expected signs and the significant difference between retail formats for mass merchandizer and liquor store (relative to convenience stores) in bottled water category supports Pan et al. (2020)'s results.

Table 1-1: Regression results on consumer stockpiling propensity

Dependent variable	Pre-hurricane stockpiling propensity					
Item category	Bottled water	Peanut butter	Canned beans	Dry pasta	Frozen meats	Toilet paper
Independent variable						
Threat dummy variable (1 if	0.525***	0.502***	0.205***	0.105***	0.171***	0.0798***
located within 100-mile	(0.071)	(0.084)	(0.034)	(0.018)	(0.024)	(0.014)
radius, 0 otherwise)						
Hurricane wind speed	0.0120***	0.00961***	0.00270***	0.00116***	0.00102	0.000549***
	(0.001)	(0.002)	(0.001)	(0.000)	(0.001)	(0.000)
Hurricane experience	-0.0111***	-0.00775	0.00152	0.00332**	0.00877***	0.00132
	(0.004)	(0.006)	(0.003)	(0.002)	(0.003)	(0.001)
Number of vehicles	0.855	2.683	1.432	0.810	-0.0576	-0.104
	(0.843)	(1.823)	(1.490)	(0.546)	(0.542)	(0.171)
Thanksgiving season	-0.0965	1.548***	0.330	0.878***	0.146	0.599***
stockpiling	(0.263)	(0.544)	(0.299)	(0.247)	(0.475)	(0.109)
County median income	0.0406***	0.0365***	0.0154***	0.0190***	0.00361	0.0102***
	(0.006)	(0.008)	(0.004)	(0.003)	(0.004)	(0.002)
Retail format (Convenience store or gas station as base category)						
Food grocery store	-0.370***	-0.0774	0.977***	0.0640	-2.421***	-0.0616
	(0.088)	(0.167)	(0.052)	(0.080)	(0.887)	(0.061)
Mass merchandizer	0.223***	-0.0201	1.076***	0.0616	-2.121**	0.0368
	(0.078)	(0.179)	(0.091)	(0.139)	(0.885)	(0.062)
Drug store	0.0904	0.419*	1.832***	0.132	-	0.107
	(0.093)	(0.222)	(0.206)	(0.107)		(0.116)
Liquor store	0.229***	-	-	-	-	-
	(0.058)					
Observations	57,290	57,210	54,823	56,821	28,697	38,786

Note: Results which include the full set of independent variables are provided in the Appendix
Standard errors in parentheses. Standard errors are clustered at county (geoid) level.
* p<0.1; ** p<0.05; *** p<0.01

The instruments, however, do not seem to perform as well as hoped. The number of vehicles, however, does not seem to be significant in predicting changes in purchases for all six product categories. Furthermore, regardless of location, hurricane wind speeds – which should only affect counties under threat of the hurricane – have a significant but small positive effect on store purchases, except in the frozen meat category. Hence, some caution is needed to interpret results in this first step.

In the second step, having run 2SLS regressions based on Equation 1-4 to measure impact of consumer stockpiling propensity on post-hurricane in-store product availability, the results are presented in Table 1-2. A note of caution, however, is warranted. The instruments performed weakly satisfactorily in all the regressions except in those of the frozen meat category. Using Hansen's J statistic – that allows observations to be correlated within the retailer groups (Hayashi, 2000, p. 227-8, 407, 417), the null hypothesis of valid instruments is not rejected at 5% significance for all second-step regressions (Hansen's J statistic and its Chi-square p-value is available in the Appendix A).

Table 1-2: Regression results on in-store product availability for each of LATE/POST week

Dependent variable	In-store product availability on LATE/POST weeks					
Item category	Bottled water	Peanut butter	Canned beans	Dry pasta	Frozen meats	Toilet paper
Independent variable: Predicted pre-hurricane stockpiling propensity						
Period of in-store product availability						
LATE week	-0.0757***	-0.0132	-0.2176**	0.0219	0.2626	-0.0912
(week of influence)	(0.0286)	(0.0499)	(0.0922)	(0.1964)	(0.6712)	(0.0770)
POST1 week	-0.0514***	0.0548	0.2087**	0.0281	0.0758	0.0411
	(0.0148)	(0.0405)	(0.0926)	(0.1219)	(0.4329)	(0.0592)
POST2 week	-0.0189*	-0.0398	0.1273	0.2488*	0.1707	0.0501
	(0.0111)	(0.0376)	(0.0920)	(0.1350)	(0.4344)	(0.0658)
POST3 week	0.0046	-0.0076	0.0384	-0.0728	0.4182	0.1321*
	(0.0120)	(0.0330)	(0.1120)	(0.1125)	(0.4954)	(0.0675)
POST4 week	-0.0026	-0.0930*	0.0346	-0.0010	-0.2084	0.0642
	(0.0106)	(0.0561)	(0.0783)	(0.1359)	(0.5017)	(0.0730)
Note: Each cell represents results from a separate regression						
Observations	6,692	6,683	6,400	6,607	3,405	5,084
No. of clusters (retailer code or parent store)	578	578	574	576	414	300

Note: Results which include the full set of independent variables for each item category are provided in the Appendix
Standard errors in parentheses
* p<0.05; ** p<0.01; *** p<0.001

The tests for under-identification also suggests that, aside from regressions for frozen meats category, second-step regressions for all other categories are not under-identified at 5% significance level when evaluating their Kleibergen-Paap rk LM statistics calculated by the ivreg2 command in Stata during the use of cluster option (Kleibergen & Paap, 2006; Kleibergen & Schaffer, 2015).

However, except in the toilet paper category, regression in all categories still suffer from weak identification. Comparing reported Kleibergen-Paap Wald rk F statistics against the Stock-Yogo critical values (Stock & Yogo, 2005), only the statistic for toilet paper category regressions exceeds the Stock-Yogo critical values for 5% maximal IV relative bias. With weak identification for all categories but toilet paper, results for bottled water, canned beans, dry pasta, frozen meat, and peanut butter need to be viewed with some caution.

Nevertheless, the results for bottled water in Table 1-2 supports results by Pan et al. (2020) that suggest stockouts during the hurricane week (LATE) and the following week (POST1).

However, this pattern is not evident in other product categories. The results for canned beans – significant and negative for LATE week but significant and positive for POST week – suggest a relatively short one-week stockout during the hurricane week (LATE) followed by restock and rebound the following week (POST1). Unfortunately, all other coefficients are not significant at 5% significance level. These results suggests that variations in UPC count may not be highly correlated with variations in product volume for peanut butter, dry pasta, frozen meats, and toilet paper, even when there is stockpiling.

Discussion and Limitations

Having seen the results from Figure 1-3 and Figure 1-4, hurricane Sandy is likely to differ in some characteristics compared to the other two Gulf Coast hurricanes. Sandy occurred in a region less familiar with annual hurricane seasons and was forecasted to make landfall relatively very late. Following this, Sandy is isolated for a more in-depth analysis in Chapter 2. Meanwhile, future research can add more recent major hurricanes, among them hurricane Sally in 2020, Arthur in 2020, Michael in 2019, Florence in 2018, and Matthew in 2016, while controling for the different familiarity level of the regions.

As the selected instruments did not perform satisfactorily according to expectations, future studies can explore other instrumental variables or include post-hurricane county-specific variables. These include both product-category-specific instrumental variables such as brand concentration (in terms of Herfindahl–Hirschman index) and county-level instruments indicating average home size that may be a better predictor of the population's stockpiling storage capacity. At the same time, hurricane damage assessments can be aggregated to county level to control for the level of destruction of physical infrastructure that might have influenced the recovery speed of retailers.

As the study includes more hurricanes from regions relatively familiar with hurricane seasons and preparations, this study will include more "placebo" product categories from foods that require substantial energy and preparations, such as doughs and baking supplies. On the other hand, perishable food such as bread, deli products, and nuts will also be included as households tend to stockpile foods ranging in terms of perishability, as long as they do not require electricity or heat to prepare for consumption.

The biggest challenge when studying hurricane-familiar regions is identification of impact from a single hurricane event. Using prior year data may not be feasible as other storms may have disturbed sales in the same relative weeks due to annual hurricane seasons. For example, hurricane

Ike and Gustav occurred around Harvey in 2017. Tropical storm Edouard occurred around hurricane Ike in 2008. To add complication, some stockpiling may occur very early – before the hurricane is within a week of landfall (Beatty et al., 2019) – as soon as communities gear up for the hurricane season. Future research, as done is Chapter 2, makes use of major hurricane Sandy in 2012 that made landfall in the northeast region less familiar with such a tremendous tropical storm late in the year.

Conclusion

Across three hurricanes, retailers see stockpiling behavior that translated to volume increases of at least 30% of average levels in bottled water and peanut butter. Canned beans were mostly stockpiled during Harvey. Dry pasta and toilet paper were stockpiled by proportionally less, causing volume sold increases of less than 20% at retailers. As expected, frozen meats – acting as the control product category not expected to be stockpile under possible power disruptions – did not see stockpiling across retailers.

During the same three hurricanes, some stockouts likely occurred. Bottled water was likely out of stock for at least a week during all hurricane events while peanut butter was not. During Sandy, however, canned beans, dry pasta, and toilet paper seems to be out of stock in weeks following the hurricane week. Evidence for the link between the stockpiling behavior and the following stockout in the first 2 weeks after the hurricane, however, is only found for bottled water, in support of findings by Pan et al. (2020). While this leaves a positive note on the inventory management of retailers in hurricane-ridden regions, the possible stockouts in several food categories during Sandy warrant a closer investigation that might reveal areas of improvement in areas less familiar to the disaster of the same nature.

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Researcher(s)' own analyses calculated (or derived) based in part on data from Nielsen Consumer LLC and marketing databases provided through the NielsenIQ Datasets at the Kilts Center for Marketing Data Center at The University of Chicago Booth School of Business.

The conclusions drawn from the NielsenIQ data are those of the researcher(s) and do not reflect the views of NielsenIQ. NielsenIQ is not responsible for, had no role in, and was not involved in analyzing and preparing the results reported herein.

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Chapter 2

Consumer food stockpiling and retail recovery heterogeneity around Hurricane Sandy 2012

Introduction

Amidst climate change, consumers and retailers face increasingly frequent natural disasters. When faced with an imminent natural disaster and potential threat towards future access to food, consumers may exhibit an anomaly in food retail purchase behavior – sudden stockpiling – resulting in sales surge within a short period of time (King & Devasagayam, 2017; McKinnon et al., 1985; Stiff et al., 1975; Su, 2010) that can influence redistribution of available supplies – and capacity for survival – among the affected population. As consumers across different characteristics optimize shopping decisions under emergency conditions, different stores of varying sizes and retail formats are being tested in how well they respond to unfamiliar levels of product demand (Christenson et al., 2021). Concerns over empty shelves and supply chain capacities are increasingly urgent as climate change exacerbates the hazards and potential economic costs of extreme weather, even for areas already familiar to the risk (Dinan, 2017; Lim et at., 2018; Marsooli et al., 2019; Pant & Cha, 2019), but more so for those historically unscathed. Understanding differences in disaster-time responses of economic actors within areas less familiar with disasters helps design precise policies that minimize expected disruptions for other areas in the future.

Within disaster responses studies, few investigate consumer purchase behavior from the retailers' point of view. Within two hurricane-familiar U.S. states, Beatty et al. (2021) does not find evidence of widespread price gouging of gasoline by retailers and wholesalers across 2004-2008 hurricane seasons. Beatty et al. (2019) finds significant increases in retail store sales (in dollar value) of emergency supplies – bottled water, batteries, and flashlights – right before the forecasted landfall of 22 U.S. hurricanes in 2002-2012 (excluding Sandy). While confirming pre-hurricane stockpiling of bottled water during 4 hurricanes in 2009-2015, Pan et al. (2020) finds that the pre-hurricane stockpiling adversely impacted retailer' ability to maintain the variety of bottled water sold at stores a few weeks after the hurricane. Meanwhile, the hurricane-triggered retailer experiences themselves – such as expected stockouts – have been used instead to study consumer behavior, such as brand

choice dependence (Levine & Seiler, 2022). Across the literature, therefore, Sandy has only been included in the sample by Pan et al. (2020) for analysis on stockpiling of bottled water and by Levine and Seiler (2022) on consumer brand choice for bottled water, yogurt, and orange juice.

The paucity of literature on such a devastating and unfamiliar disaster prompts this study to focus exclusively on consumer and retailer responses surrounding Sandy. This exclusive look prevents dampening or opposite effects that may exist in areas highly acquainted with procedures and practices due to annual hurricane seasons. While communities in Gulf Coast states aggressively remind households to prepare for hurricanes and purchase stockpiles at the beginning of the Atlantic hurricane season, most – if not all – in Sandy's path did not. The late change in forecast of Sandy's path also allows the observations of consumer and retailer responses to include an element of panic under uncertainty of the duration and extent of the hurricane event.

Using an event-study approach, this paper contributes to the disaster response literature by investigating consumer and retailer responses around the late stockpiling event triggered by a relatively unfamiliar disaster. By exclusively using hurricane Sandy, this study contributes to the literature gap on the disastrous superstorm while providing a novel description of last-minute pre-disaster behavior of consumers and retailers when suddenly faced with imminent danger of a weather event historically rare in their location. Unlike panic-buying from unverifiable threats or impulse buying triggered by product or store characteristics, stockpiling behavior before a hurricane is the expected outcome from rationally-behaving individuals under constrained utility maximization when expecting temporary changes to shopping availability (Blaylock, 1989). Meanwhile, the resulting demand spike tests retailers' capacity to restock shelves while resupplying inventories under time and resource constraints. Assuming that stores restock shelves with available inventories, an abnormal drop in total product variety sold should indicate a form of store stockout in which several brands or sizes – which were regularly purchased – were not purchased at all because they were simply not available in the store during that time period. Broadly, two main investigations are of concern. Firstly, this study investigates retailer responses to Sandy by observing changes in both product-specific volume and count of UPCs sold; the former helps measure consumer stockpiling magnitude and the latter helps indicate store-level stockouts due to possible supply disruptions faced by retailers. Secondly, this study investigates consumer responses to Sandy by observing changes in product-specific purchases. In both investigations, this study makes use of event-study graphs across several food categories. Finally, this study investigates heterogeneity across retail store categories – by store format and size – and across consumers – by household characteristics.

Background and Literature Review

Consumers have been found to stockpile food and supplies around a perceived emergency situation. Various food categories had seen sudden increased purchases due to stockpiling in United Kingdom during the recent pandemic in 2020 (NFS, 2020). Meanwhile, retailers' ability to promptly resupply its market with essential items is crucial to post-disaster recovery, such as for communities hit by Hurricane Katrina in 2005 (Horwitz, 2009; Hu et al., 2013; Lodree & Taskin, 2009; Münzberg et al., 2016; Taskin & Lodree, 2016). Increasingly, retailers are more reluctant to raise prices of essential goods due to perception of justice or government restrictions (Rapp, 2005; Sandel, 2011; Snyder, 2009). Without the price mechanism to match supply to the demand, unrealized sales due to empty shelves imply both a loss of profits to retailers and a welfare loss to consumers. During a natural disaster, lack of household stockpile of necessities can affect survivability and risk of diseases.

Unprecedented and greatly underestimated, Hurricane Sandy (Sandy) became one of the costliest U.S. disasters after its arrival on U.S. soil on October 29, 2012. To date, Sandy is the fourth costliest tropical cyclone in the U.S. at $78.7 billion – after Katrina 2005 ($178.8 billion), Harvey 2017 ($138.8 billion), and Maria 2017 ($99.9 billion) (NOAA, 2021a). It is among the few billion-dollar weather disasters since 1980 to hit New Jersey and New York state (NOAA, 2021a), while being only the third recorded hurricane recorded to have made landfall in New Jersey (Kunz et al., 2013). Similar to Irene in 2011, Sandy moved northwards along the U.S. eastern coast before bringing destruction. However, until October 23, 16 of 17 forecasting models predicted that Sandy would move out seawards instead of turning left towards land (Sowers, 2015). In New Jersey, residents seemed to underestimate Sandy's devastating impact as only less than half evacuated from municipalities under mandatory evacuation orders and less than a fifth evacuated from heavily impacted municipalities (Kulkarni et al., 2017). Also, the National Hurricane Center (NHC) no longer issued advisories given the storm was no longer a tropical cyclone approaching its landfall (Anderson et al., 2016; Hernández et al., 2018; Holthaus, 2012; Kantha, 2013).

Despite merely a borderline Category 1 on the Saffir-Simpson Hurricane Wind Scale (SSHS) near landfall, Sandy was especially destructive due to its surprising size. In reality, Sandy's combination of storm force winds covering over 1,000 miles, extreme precipitation, and strong storm surge destroyed private and public properties, disrupted power supplies, flooded low-lying coastal zones, and crippled sewage and water treatment facilities (Kunz et al., 2013; Rose et al.,2001; McMichael, 2015). More than 159 direct or indirect fatalities were reported in the mid-Atlantic and northeastern U.S. (Blake et al., 2013). While the flooding caused huge damages to property and infrastructure, a subsequent nor'easter storm extended power outages during Sandy across 21 states

to 13 days, disrupting daily activities. Notably, although its power disruption was shorter in duration than Katrina (18 days for Louisiana, 23 days for Texas), Rita, Wilma, and Ike, Sandy occurred in a region with less experience with severe hurricanes.

Faced with an unfamiliar threat, households under threat face a myriad of factors that influence how they respond. For those who are unable to evacuate or decide not to evacuate, the emergency environment shifts various shopping behavior determinants that, in turn, affects how they purchase grocery necessities when preparing to cope with the incoming disaster's impact on scarcity and risk (Kahneman & Tversky, 2013; Lynn, 1991; Yuen et al., 2020). The threat of deprivation influences consumer behavior rationally and emotionally (Hoch & Loewenstein, 1991) to forward purchase, while a minority of population with higher anxiety may buy too much under panic and further incite fear contagion among shoppers (Taylor, 2021). Psychologically, the disaster-induced stress can also increase appetite and motivate overconsumption of food to provide a sense of ego preservation (Lattimore & Maxwell, 2004). Furthermore, under unfamiliar situations, rational consumers may make forward purchases due to future price uncertainty (Helsen & Schmittlein, 1992).

Given the unforeseen cost and severity of Sandy, literature on the response to this superstorm itself remains very limited in scope. Extant studies on Hurricane Sandy can be broadly categorized into studies on events during the hurricane and studies on recovery post hurricane. The former category investigates human movement (Brown et al., 2016; Wang & Taylor, 2014) and information movement through social interaction (Gupta et al., 2013; Kryvasheyeu et al., 2015; Lachlan et al., 2014; Neppalli et al., 2017; Shelton et al. 2014). The latter category covers the health impact (Greene et al., 2013; Schwartz et al., 2015; Schwartz et al., 2017; Swerdel et al., 2014), community recovery (Binder et al., 2015; Schmeltz et al., 2013), and physical or institutional infrastructure improvements required to build future resilience (Abramson & Redlener, 2012; Rosenzweig & Solecki, 2014). Aside from Pan et al. (2020) and Levine and Seiler (2022), no other studies have investigated the hurricane-driven consumer and retailer responses that includes Sandy as part of the hurricane sample.

Methodology and Data

Event-study Method

To analyze pre-, during, and post-hurricane changes in volume and UPC count around Sandy using event-study plots, the study's main approach of using event-study plots makes use of difference-in-differences (DiD). The first difference comes from variation in observations between individuals who received treatment and those who did not. An individual under "treatment" from Sandy is defined as one located in a county with a centroid that is within the 100-mile radius of any point along Sandy's historical path. The second difference comes from within-individual variation between its post period – year of Sandy 2012 – and pre period – year 2011 – observations from the same relative time. For the DiD in this study, year-on-year trends in untreated individuals are employed as the counterfactuals for treated individuals had Sandy not happen. The parallel trend assumption required is supported by observed parallel trends in both treated and untreated individuals during the pre period. Some noise is observed during the relative timing of hurricane Irene in 2011 whose path intersected with Sandy's. Finally, the estimated DiD at each relative week is plotted against relative week in event-study plots.

In defining treatment, this study follows prior studies on pre-hurricane stockpiling. The hurricane radius follows both Pan et al. (2020) and Beatty et al. (2021) that finds 100 miles to be salient in triggering late emergency stockpiling by the group under threat. To calculating distance to the hurricane, this study follows Pan et al. (2020) by selecting the minimum straight-line distance between the individual's county centroid to the hurricane path – instead of the hurricane landfall (first land contact) location. Consequently, the timing of the disaster event or "Sandy week" – later indicated as week $t=0$ – for each individual depends on the date at which its county is at its minimum distance from hurricane path. As with most natural disasters, Sandy provides an exogenous treatment that supports causal interpretation of the DiD estimates. Fortunately, closest encounters with Sandy occurred within the same sales week for all counties, averting the need to vary treatment by time or control for staggered treatment effects. Effectively, the treatment in this study occurs at county level and the coefficients of interest carry the interpretation of average treatment effects on treated (ATET) individuals at each relative week.

Assuming individual- and county-specific observables are time-invariant within the same year, the main empirical model in this study estimates the DiD for each week using the regression equation:

$$DependentVariable_{i,t,j} = \alpha_j + \sum_t \delta_{t,j}(Threat\ x\ HurricaneYear\ x\ RelativeWeek_t) + \gamma_{1,j}Threat + \gamma_{2,j}HurricaneYear + \gamma_{3,j}(Threat\ x\ HurricaneYear) + \boldsymbol{\mu}_j \sum (Irene\ x\ RelativeWeek_t) + \varphi_j ThanksgivingWeek_j + \sigma_j NewYearsEveWeek_j + \varepsilon_{i,t,j} \quad (2\text{-}1)$$

where individual stores or households are indexed by *i*, relative weeks are indexed by *t*, and product categories are indexed by *j*. When investigating retailer responses, *DependentVariable* is the natural logarithm transformation of either the product-specific volume sold or count of UPCs sold at store-week-year level. When investigating consumer responses, *DependentVariable* is the natural logarithm transformation of product-specific purchase volume per member at household-week-year level. The error term ε is assumed to be normally distributed within each product category *j*. *Threat* is an indicator variable that takes on the value of 1 if the county's nearest distance to the hurricane path is 100 miles or less, or 0 otherwise, and its coefficient γ_1 captures any time-invariant location effects.

HurricaneYear is an indicator variable that takes on the value of 1 for hurricane year (2012) or 0 for control year (2011) and its coefficient γ_2 captures the year fixed effect. With the inclusion of the interaction term between *Threat* and *HurricaneYear*, the coefficient γ_3 captures location-year fixed effects. To control for the effects of hurricane Irene, which also hit New Jersey and surrounding areas in 2011, indicator variable *Irene* is included so that the coefficient μ absorbs average stockpiling behavior during the weeks surrounding Irene. The binary variable *Irene* takes on the value of 1 if the observation occurs in 2011 and when the centroid of the individual's county of residence is within 100 miles of Irene's historical path. Indicator variables *ThanksgivingWeek* and *NewYearsEveWeek* are included so that their coefficients – φ and σ, respectively – absorb the nationwide effect of heightened sales levels due to the Thanksgiving holiday and New Year festivities. At the same time, the sales weeks in the data are indexed such that the Thanksgiving week of 2011 is at the same week-of-the-year as that of 2012. In practice, regression analyses for each product category are done separately with the error terms independent of each other. All regressions are run using STATA 17.0.

Most importantly, this study plots δ – the coefficients of the three-way interaction terms between *Threat*, *HurricaneYear*, and $RelativeWeek_t$ – against relative week. However, instead of including a constant term in the equation, this study includes the full set of *RelativeWeek* dummy variables and assigns week t=-2 as a base week, effectively treating the coefficient δ_{-2} as the constant in the regression. Two weeks before Sandy week is selected as the base week because hurricane warnings

for Sandy had not been issued and NHC's cone of uncertainty for forecasted hurricane paths only covers a maximum of 120 hours (or 5 days) ahead of the hurricane's position. Since, up until 3 days before its arrival in New Jersey, Sandy was not even predicted to make landfall, most of the affected population are not expected to be aware of Sandy two weeks out. Furthermore, the particular sales week was not part of any festive season and did not contain any notable sales event anomaly during 2011 (the control year). Therefore, the average year-on-year variation in observations at the base week t=-2 represents the year fixed effect already captured by γ_2. Consequently, coefficient δ_{-2} will be dropped from the estimation and will always be plotted as zero by design. As such, coefficients δ for relative weeks t >-1 are to be interpreted as average responses relative to the last week of "business as usual" sales before counties on Sandy's path became aware of its threat, relative to those not located along its path.

Retailer Responses and Heterogeneity

This study investigates two related phenomena of disaster-time retailer experiences. The first is the late pre-disaster stockpiling by consumers. The second is the out-of-stock events at retail stores in areas affected by the disaster. Once coming within NHC's 5-day cone of uncertainty, a hurricane triggers weather reporting and news coverage that informs populations in its forecasted path to prepare accordingly. Then, NHC issues a hurricane watch 48 hours in advance of when conditions are deemed possible for hurricane-force winds. Afterwards, 36 hours in advance of anticipated onset of hurricane-force winds, NHC issues a hurricane warning before hurricane preparedness activities becomes too difficult and unsafe. The maximum 2-day interval between a hurricane watch and the onset of hurricane-force winds suggests that purchases more than 3 days out from a hurricane impact is likely to be in response to publicly available information even before a hurricane watch is issued. Once a major hurricane makes landfall, destruction of physical infrastructure and power disruptions in counties within its radius are expected (due to damage or deliberate temporary measures) from flooding, storm winds, or debris. These conditions make it difficult for households to travel to stores for groceries as well as for retailers to use supply routes in restocking depleted inventories.

This study posits that late pre-disaster stockpiling by consumers is the major cause of sudden increased sales of food and necessities at retail stores along Sandy's path right before and during the disaster week. In the analyses for each product category, this study considers volume sold – in oz or unit counts, depending on the product category – as the dependent variable of interest to detect and measure consumer stockpiling at retail stores. While store-switching between treated and untreated individuals are asssumed to be minimal and only at county borders, any effect is likely to be an

increase in volume sold at untreated counties due to shopping by evacuees, thereby making the ATET estimates more conservative. Limited to weekly – instead of daily – store sales data, this study defines "late" as during the disaster week (t=0) or a week prior (t=-1) because the former includes days right before the disaster while the latter adds days when the NHC 5-day cone of uncertainty had already conveyed plausible danger to the county and triggered some extent of storm preparations.

Subsequently, this study posits that out-of-stock events at affected stores right before (t=-1), during (t=0), and directly post (t>0) disaster week are indicated by sudden drops of product variety sold at stores compared to base levels, relative to unaffected stores. Without store inventory data or visual records of empty shelves, this study considers the weekly count of unique UPCs sold within a product category of a store to be representative of product variability on the store's shelves available for customers to buy that week, following Pan et al. (2020). It is implied that stores generally aim to maintain customer loyalty and confidence by providing a stable variety of products within each product category. Assuming the habitual nature of grocery shopping, stable customer base, as well as stable consumer income and preferences across weeks within each product category during the sample's non-disaster weeks, this study expects year-on-year changes in weekly volume and count of unique UPCs sold within a product category at stores, relative to those outside Sandy's path radius, to be distributed around zero, relative to the base week (t=-2).

Over the years, retailers build operational and marketing strategies according their market position, customer demographic, and geographic context. As retailers strategize their sourcing to maintain product availability and efficient inventory, their strategies come under testing during disasters which sever supply chains. The sourcing superiority of different retailers vary according to supplier reliability, retailers' purchasing price, and supplier's volume flexibility (Yoon et al., 2018). Better access to suppliers also can vary as retail formats structure their networks differently according to scale and store sizes (Cachon & Olivares, 2010; Gaur et al., 2005; Rajagopalan, 2013). Extensive retail chains who dominate certain retail formats may have the option of shifting inventories from other regions to support disaster-threatened regions (Holmes, 2011; Lim et al., 2017). Expecting heterogeneity to appear only during shocks to the system, this study expects Sandy-induced heterogeneity to be visually comparable during weeks around t=0.

For each product category – bottled water, peanut butter, canned beans, dry pasta, bread, or toilet paper – this study investigates retailer heterogeneity by running regressions separately for each subsample and overlaying the coefficients δ that represent ATET for each relative week on the same event-study plot. To obtain those coefficients, the dependent variables – natural logarithm transformations of weekly volume and UPC count sold at store – are regressed on a set of dummy variables using the respective equations:

$$lnVolume_{i,t,j} = \alpha_j + \sum_t \delta_{t,j}(Threat\ x\ HurricaneYear\ x\ RelativeWeek_t) + \gamma_{1,j}Threat + \gamma_{2,j}HurricaneYear + \gamma_{3,j}(Threat\ x\ HurricaneYear) + \boldsymbol{\mu}_j \sum (Irene\ x\ RelativeWeek_t) + \varphi_j ThanksgivingWeek_j + \sigma_j NewYearsEveWeek_j + \varepsilon_{i,t,j} \quad (2\text{-}2)$$

$$lnUPCcount_{i,t,j} = \alpha_j + \sum_t \delta_{t,j}(Threat\ x\ HurricaneYear\ x\ RelativeWeek_t) + \gamma_{1,j}Threat + \gamma_{2,j}HurricaneYear + \gamma_{3,j}(Threat\ x\ HurricaneYear) + \boldsymbol{\mu}_j \sum (Irene\ x\ RelativeWeek_t) + \varphi_j ThanksgivingWeek_j + \sigma_j NewYearsEveWeek_j + \varepsilon_{i,t,j} \quad (2\text{-}3)$$

where the index and independent variables are identical to those in Equation 2-1. Except for toilet paper whose volume sold is in terms of rolls, the other 5 product categories use oz as the unit of volume sold. The log-linear form of the Equation 2-2 and Equation 2-3 allows δ to be interpreted as average percentage changes experienced by Sandy-affected stores compared to their own sales levels at two weeks before Sandy hit, stripped of their own seasonality, and relative to all other stores unaffected by Sandy.

To observe late pre-disaster stockpiling phenomenon, the particular coefficients of interest are δ_{-1} and δ_0 from volume regressions of Equation 2-2. While assuming that most stores continued to operate up until some day in the week of the hurricane (Pan et al., 2020), this study does not a priori determine in which of the two weeks (t=-1 and t=0) stockpiling purchases at stores is more prominent. Although Pan et al. (2020) explicitly distinguishes the two weeks – t=-1 and t=0 – as "early week" and "late week", respectively, and studies stockpiling behavior only during the former, this study opts to includes both weeks as it is unable to precisely assign the last day of sales for each store before the store was temporarily closed due to the hurricane. Therefore, the late stockpiling phenomenon is deemed evident if any of the regression estimates of δ_{-1} and δ_0 is statistically significant, positive, and comparably larger (in absolute terms) than the estimates of δ for other weeks.

Arguing that Sandy is distinct compared to other previously studied hurricanes, this study does not a priori know the duration of Sandy's impact on post-disaster retail store sales and, hence, attempts to use event-study graphs to contribute descriptive insights. Due to the opportunity cost and loss of expected profits during a store's stockout, it is implied that stockouts are strategically

avoided by store managers and do not occur randomly. Since this study attributes any stockout around week t=0 to occur solely due to the unforeseen demand-supply mismatch from Sandy's sudden disruption to both consumers' weekly shopping demand and retailers' inventory resupply channels, the coefficients of interest for observing store stockout phenomenon are δ for the weeks beginning at t=-1 in Equation 2-3. Hence, Sandy-related stockout is deemed evident by this study if any of the estimates of δ_{-1}, δ_0, and δ_1 from UPC count regressions is statistically significant, negative, and comparably larger (in absolute terms) than the estimates of δ for other weeks. Consequently, statistically significant and negative estimates right-adjacent (on the following relative week) to them indicates a prolonged stockout phenomenon during Sandy, implying a difficult recovery – to refill empty shelves – for the average Sandy-affected store in the sample. By including this combination of grocery products that have relatively high inventory turnover, consumer demand for necessary grocery items are expected to move in similar trends, so inter-product trend differences post Sandy week are expected to reflect more of supply-side factors than of demand-side ones.

Due to Sandy's largely unexpected nature, this study maintains the assumption that the retailers generally did not trigger the storm preparation purchases before Sandy. In other areas more familiar with hurricane seasons, this assumption may not hold as retailers may have already arranged season-specific shelf and store layouts that expect or even trigger hurricane preparations, just like how retailers prepare stores for Halloween or Christmas seasons. Part of this assumption is that store prices over each of the product categories in this study's sample vary insignificantly over the sample period and price changes are not salient enough to make customers purchase significantly higher amount of the included product categories, on average, across the Sandy-affected counties.

Between-channel Heterogeneity

Investigating differences in responses across retailers involve splitting the store sample according to retail channels. Leaving out convenience stores, liquor stores, and gas station stores, the study retains individual stores from three channels contributing the most in terms of grocery sales: food grocers, mass merchandisers, and drug stores. As not all five product categories may be sold in each week for each store, store sample sizes vary by product category analysis. For each retail channel store sample, regressions based on Equation 2-2 and Equation 2-3 are run and the estimated coefficients δ are presented in the same event-study plots as results from other channels. This study aims to reveal which channel experienced the largest proportional volume increase due to stockpiling and the variation in timing of stockpiling experienced across channels. Meanwhile, this study expects that, as Pan et al. (2020) finds, food grocers and mass merchandisers perform best among the

channels in averting – and recovering from – stockouts due to experience managing larger scales of high-turnover perishable goods. They are also more likely to be equipped with larger capacities and wider supply networks that are more flexible to temporarily redirect supply of necessities towards disaster-hit areas.

Within-channel Heterogeneity

To investigate response heterogeneity across store sizes, this study retains stores from the two largest channels: food grocers and mass merchandisers. Then, stores within each channel are categorized according to their sizes. Without information on store size or floor area, this study makes use of each store's 2011 annual bottled water volume sold – as a proxy for its size – to bin it into a size category – large, medium, or small. With bottled water being the grocery category with the highest volume, a store's annual volume of bottled water sold is a likely indicator of store size and inventory turnaround. Since the scale of grocery purchases at food grocers is much higher than at mass merchandiser stores, the size categories are defined differently for each channel (see Table 2-1) such that category cutoffs are selected based on points of lower store density along the distribution of store sizes within the channel.

Table 2-1: Size classification of stores according to annual bottled water volume sold

Food grocer stores			
Category	*Annual bottled water 2011 volume sold*	*Store sample*	*# stores*
Small	volume <= 3 million oz	28%	2,014
Medium	3 million oz < volume <= 9million oz	55%	3,983
Large	volume > 9 million oz	17%	1,269
Mass merchandizer stores			
Category	*Annual bottled water 2011 volume sold*	*Store sample*	*# stores*
Small	volume <= 500k oz	73%	6,326
Medium	500k oz < volume <= 3 million oz	19%	1,628
Large	volume > 3 million oz	8%	695

Within a retail channel, the stores are split into subsamples according to store sizes. Subsample regressions based on Equation 2-2 and Equation 2-3 are run and the estimated coefficients δ are presented using event-study plots along with results from other within-channel subsamples. Although no prior research has investigated the link between store size and disaster-related stockpiling, within both channels, this study expects large stores to experience the highest consumer stockpiling behavior, assuming that consumers target shopping at stores perceived to provide the most complete assortment of products in order to minimize the number of shopping trips before emergency conditions make it unsafe to travel to stores. However, no a priori

assumption is made regarding the variation of stockpiling timing across different store sizes. As in the previous section, this study also expects that large stores within each channel, on average, fare better in averting stockouts – and recover faster – than small stores due to larger inventory space and stronger resupply capabilities. Since stores from the two retail channels vary significantly in their scale of operations (evident from Table 2-1), no subsample comparisons are made between the two channels.

Consumer Responses and Heterogeneity

Late pre-disaster stockpiling phenomenon is also expected to be observed at individual household level, indicated by sudden increased purchases of food and necessities right before or during Sandy week for households within Sandy's radius.. Unlike retailer-level analyses, the investigation of household consumer responses does not include UPC count regressions as product stockouts are not household events[3]. Similar to retailer-level DiD analyses, the first difference is between households residing within and outside Sandy's radius, while the second difference is between the hurricane year (2012) and the prior year (2011). Households are assumed to be responding solely to the impending threat of Sandy starting from a week before Sandy's closest brush with their county centroid as they were unlikely to have prepared for any major hurricane threat any earlier than 5 days from Sandy's forecasted landfall in New Jersey coast.

Once late pre-Sandy stockpiling is evident at retailer-level for the pooled store sample, this study proceeds to look at the phenomenon at consumer household level by regressing purchased volume per household member using Equation 2-1 for the pooled household sample. Pooled sample regressions are run to provide evidence for late pre-disaster stockpiling behavior by households.

Afterwards, this study investigates consumer heterogeneity across household characteristics. For each product category and each characteristic of interest, this study splits the household sample according to the characteristics. Similar to retailer analyses, regressions are run separately by subsamples. Coefficients δ represent ATET for each relative week and their estimates should vary by more than twice their standard deviations if there is heterogeneity in purchase behavior. To estimate the coefficients for event-study plots, for each product category, regressions are run based on the following equation that is similar to Equation 2-2 in the earlier analysis:

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[3] Household brand switching during hurricanes, however, is treated by Levine and Seiler (2022) as outcomes of stockout at retailers.

$$lnVolumePerMember_{i,t,j} = \alpha_j + \sum_t \delta_{t,j}(Threat\ x\ HurricaneYear\ x\ RelativeWeek_t) + \gamma_{1,j}Threat + \gamma_{2,j}HurricaneYear + \gamma_{3,j}(Threat\ x\ HurricaneYear) + \boldsymbol{\mu}_j \sum (Irene\ x\ RelativeWeek_t) + \varphi_j ThanksgivingWeek_j + \sigma_j NewYearsEveWeek_j + \varepsilon_{i,t,j} \quad (2\text{-}4)$$

where all indexes are identical to those in Equation 2-1 and all other components are identical to those in Equation 2-2. Therefore, δ captures the weekly ATET – approximating percentage changes – of Sandy on household purchases[4]. Household late stockpiling is evident if any of the regression estimates of δ_{-1} and δ_0 is statistically significant and positive. A very small volume is added to zero volume observations to retain them in estimation when using their natural logarithm transformations.

This study investigates stockpiling heterogeneity across household income, race, presence of children, and vehicle ownership. With higher capacity to forward purchase, households from higher income groups are expected, on average, to stockpile more of all product categories than others. Households with children are expected to stockpile more per member across products due to likely higher clean water requirements and more expected food buffers for children. This study, however, does not have a priori knowledge of which product categories certain races are more predisposed to stockpiling. Finally, with greater flexibility of transport and capability to carry more groceries, households with vehicles are expected to stockpile more than those without.

Data

This study combines retailer data, household data, and hurricane-specific data in its analyses. Weekly store-level data on volume and UPC count sold by product category is obtained from the Nielsen Retail Scanner data that provides detailed weekly data of merchandise sold from over 30,000 participating stores all over U.S. across grocery, drug, mass merchandiser, and other stores since 2006. Weekly household-level purchase volumes by product category are aggregated from daily

[4] Using inverse hyperbolic sine transformation (Bellemare & Wichman, 2020) instead of natural logarithm transformation on the dependent variable – to retain zero-purchase observations – does not significantly add information when using household-level data because zero-purchase observations are not random but highly dependent on household-specific grocery cycles (which may not all be weekly). Consequently, using hyperbolic sine transformation on weekly household groceries result in overestimation and large week-to-week fluctuations due to variations in household shopping cycles.

purchase data obtained from the Nielsen Homescan Consumer Panel data that tracks detailed trip-level purchases of a longitudinal consumer panel containing more than 40,000 U.S. households. The weekly-aggregated purchase volume are then divided by household size (provided in the same dataset) to calculate weekly volume purchased per member. To be consistent with retailer analyses, weekly aggregation of each household's daily purchase data is based on Sunday-to-Saturday week cycles. The hurricane path coordinates are obtained from the Extended Best Tracks (EBT) dataset by Demuth et al. (2006) which records each hurricane's position every six hours from formation to dissipation. Meanwhile, coordinates of county centroids are obtained from U.S. Gazetteer Files (U.S. Census Bureau 2017). Then, minimum straight-line distances between the centroid and the hurricane path coordinates are calculated across days of the hurricane's movement for each county. The week that contains the date when the county is nearest to the hurricane path is selected as the Sandy week. Due to Sandy's landfall date and movement speed, all affected counties in this study experienced Sandy week on the 44th week of the year in 2012.

Six product categories, indexed by *j* in Equation 2-1, are included in this study. Consistent with other disaster preparation kits, the selection of products is based on the hurricane preparedness checklist by Direct Energy (2016) which categorizes recommended stockpile items into zero-preparation foods, minimal-preparation foods, and sanitation supplies. This categorization is contextually important because physically destructive disasters, such as hurricanes and armed conflicts, often cripple access to power or fuel, severely limiting the affected population's ability to cook or prepare food. Hence, populations familiar with annual hurricane seasons are not likely to stockpile food requiring energy to cook. Consequently, this study includes peanut butter, canned beans, and bread to represent zero-preparation foods, dry pasta to represent minimal-preparation foods, and toilet paper to represent sanitation supplies. Since dry pasta often requires both clean water and heat energy to prepare for consumption, evidence of its stockpiling is a likely indication of a region less experienced with hurricanes. Since Sandy is pooled together with other hurricanes in the analysis by Pan et al. (2020) and was not included at all in Beatty et al. (2019), this study still includes bottled water and expects stockpiling evidence consistent with theirs. Product module codes are shared across both Nielsen datasets so there is no difference in product definition between analyses.

Household characteristics are included based on information from the Nielsen Homescan dataset. While household race is indicated explicitly, household presence of children is a binary variable created based on the information of age and presence of children in the same dataset. Meanwhile, household income groupings and vehicle ownership are contructed. As annual household income in the dataset is categorized into 16 narrow income brackets, this study collapses them into 4 wide income brackets: Low, Low-Medium, Medium-High, and High. The 3 categories cutoffs are

such that households in $25,000-$29,999 income brackets and lower are defined to be of "Low" income, those in higher income brackets until $59,999 to be of "Low-Medium" income, those above the median-containing $60,000-$69,999 bracket to be of "Medium-High" income, and the rest to be of "High" income. Using households purchase data from 3 years up to Sandy, a household is deemed as having a vehicle if purchases of automotive-related product categories are detected in at least 2 or 3 calendar years.

Results

Retailer Experience

Regressions of Equation 2-2 and Equation 2-3 for all 6 product categories on a pooled store sample result in δ estimates presented visually in Figure 2-1, along with their 5% confidence intervals. The regressions for each channel are run separately using respective store samples and, as with all regressions in this study, standard errors are clustered at county level. With the base week set at t=-2 (a week before the hurricane), the coefficient value at t=-2 is zero (not estimated) when the interaction term between proximity to hurricane (*Threat*) and year of hurricane (*HurricaneYear*) is included. The regression output summaries are provided in the Appendix B.

Products that show jumps in volume sold in Figure 2-1 – compared to a year prior and relative to retailers outside Sandy's radius – right around the time of the hurricane include bottled water, peanut butter, canned beans, toilet paper, and bread. As expected for a product category least suitable for surviving energy-depriving disasters, dry pasta does not see volume sold increases that are statistically different from a year prior. Collectively, these results provide strong causal evidence that the sudden and simultaneous spikes in volume sold of the five hurricane-kit product categories occured due to stockpiling by consumers preparing for Hurricane Sandy. A week before Sandy, volume sold already rose by 50.5% for bottled water, 21.0% for bread, 20.1% for peanut butter, and 14.7% for toilet paper. During the hurricane week itself, year-on-year increases in volume sold occurred for bottled water (38.8%), peanut butter (50.5%), canned beans (12.8%), and bread (6.8%). As the only non-food item in this study, toilet paper saw its volume sold dipping two consecutive weeks following the earlier jump, consistent with lower purchases due to consumers running down their previously stockpiled products.

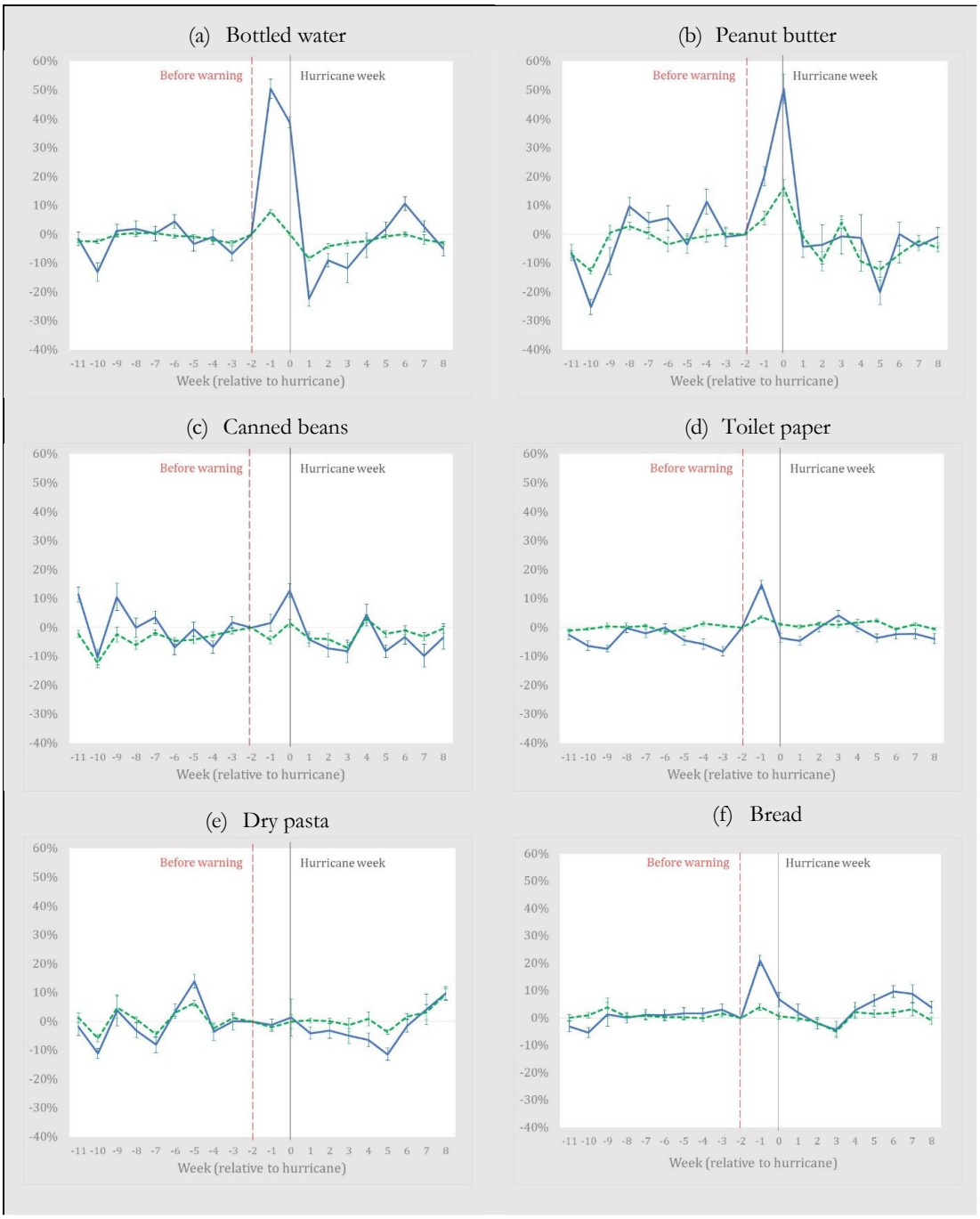

Figure 2-1: Event-study plots reflecting weekly average treatment effects of Sandy in volume and UPC count sold from a pooled store sample for various product categories (volume sold in solid blue lines, UPC count sold in dotted green lines)

Accompanying average treatment effects on UPC count sold (as shown in Figure 2-1) help explain the phenomenon faced by retailers during Sandy. For the four product categories already being stockpiled since a week before Sandy, UPC count sold also increased during that week – by

7.8% for bottled water, 5.6% for peanut butter, 4.0% for bread, and 3.6% for toilet paper – relative to prior year and retailers outside Sandy's range. These movements – in the same direction as those of volume sold – can be explained by demand as consumers tend to buy more variety or buy a different UPC (that packs a larger volume) when purchasing more of the same product. On the other hand, a drop in UPC count right after a stockpiling event can have two possible explanations. The first is a fall in purchases due to consumers running down their existing stockpiles. The second is a stockout that took entire UPCs out of the shelves for the week, despite consumer buying more or less volume for the remaining UPCs. When investigating stockouts around hurricanes using household purchase data, Levine and Seiler (2022) detects brand switching to occur the following week (t=1). Visually, the plotted coefficients – representing weekly percentage differences between stores within and outside Sandy's radius relative to their prior year levels – of UPC count regressions are considerably smaller in absolute magnitude compared to those of volume regressions, suggesting that UPC count variations are less sensitive to time or retailer differences than volume. Aside from peanut butter which saw its UPC count drop by proportionally more than volume sold (at t=2, 4, 6), retailer stockout during Sandy is not directly evident from results using the pooled sample.

Retailer Heterogeneity

Between-channel Heterogeneity

Having run regressions based on Equation 2-2 and Equation 2-3 for all six product categories separately on food grocer, mass merchandiser, and drug store samples, the δ estimates representing average treatment effects of Sandy are presented using event-study plots in Figure 2-2 for three food categories evidently stockpiled according to the previous section. The regression output summary tables, as well as results for the other three product categories, are provided in the Appendix B.

Not a main source of groceries, drug stores in Sandy's path see the largest weekly fluctuations in volume for peanut butter but relatively stable and similar year-on-year trends for bottled water and bread prior to Sandy's approach relative to those outside Sandy's radius. Using available stocks, however, affected drug stores experienced the largest percentage increase in volume sold a week before and during Sandy for peanut butter (63.2%) and bread (26.0%) although stockpiling of the former started surprisingly late (at t=0). Together with those for bottled water, these results are consistent with consumer stockpiling up until the disaster, suggesting that

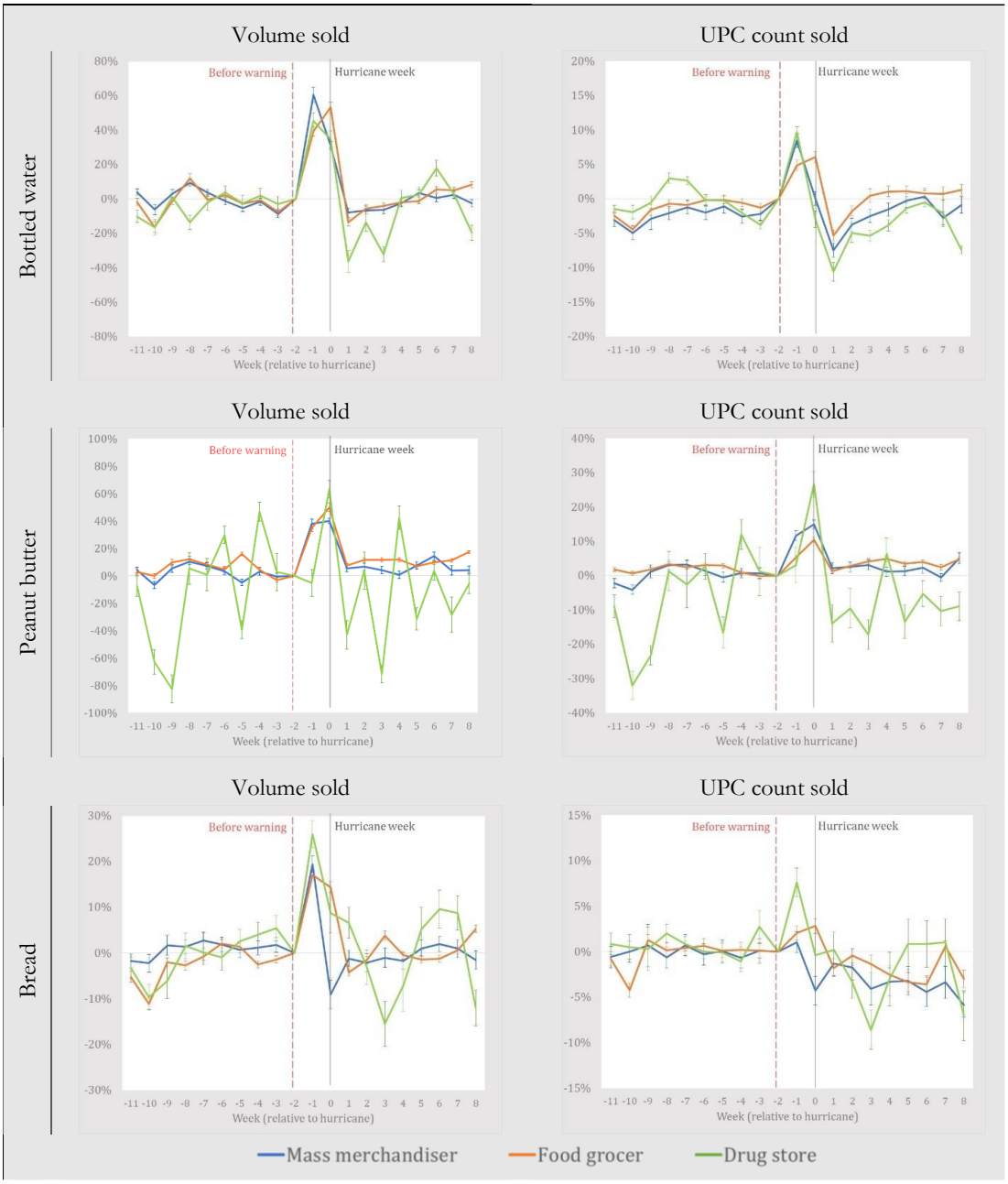

Figure 2-2: Event-study plots reflecting weekly average treatment effects of Sandy in volume and unique UPC count sold for other product categories across channels)

consumers even purchased grocery items from drug stores when facing Sandy's imminent threat[5]. Afterwards, volume sold for bottled water and peanut butter plunged right after Sandy (at t=1) while it plunged much later (at t=3) for bread. Possible explanations include partial store closure due to hurricane-related damages and flooding, delayed consumer shopping, or partially-empty shelves. However, as the drop in bottled water UPC count sold at Sandy week (t=0) was not accompanied by statistically significant drop for all other products, it is possible that bottled water was out of stock.

While similar to its food grocer counterparts prior to Sandy's approach, average trends for affected mass merchandisers became distinct during Sandy's impact (t=0). Bottled water volume sold increased by more than half (60.6%) – highest among retail channels – one week before Sandy, while peanut butter and bread volume sold increased by 37.8% and 19.4%, respectively. However, while peanut butter continued to be stockpiled (39.9% increase), bread saw a 9.1% volume drop during Sandy week in a likely stockout phenomenon. Only mass merchandisers experienced an average drop in bread UPC count sold (by 4.3%) for affected stores during Sandy week. That same week, the incremental UPC count in bottled water sold at affected mass merchandisers disappeared despite positive incremental volume sold, indicating likely stockouts. Such evidence differs with findings by Pan et al. (2020) that associate warehouse retail formats with superior preparedness against bottled water stockouts during four hurricanes across different regions (including Sandy).

Affected food grocers showed strong sales up until disaster struck. Noticeably, their percentage increments of volume sold are significantly large for bottled water (39.4%), peanut butter (34.9%), and bread (17.1%) a week before Sandy[6] and remained at 53.2%, 49.9%, and 14.4%, respectively, during the hurricane week. Although UPC count and volume sold both fell below average for all products, the continued reductions in UPC count amidst recovering volumes across the following weeks suggest comparatively stronger disruptions to supply chains for bread than other products.

The combination of results also provide insights into how consumers possibly assembled their disaster preparation stockpiles. The simultaneous spikes in volume suggests that, a week before Sandy hit, on average, consumers along Sandy's path bought additional half-week's worth of bottled water and peanut butter – along with a lesser extent of additional bread, toilet paper, and canned beans – from their food grocer and mass merchandiser retail stores. Despite that, peanut butter at both channels does not seem to be out of stock at any week around Sandy. For peanut butter, the

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[5] Each also the highest proportional volume increase among channels, canned beans increased by 48.6% and toilet paper by 19.7% (see Appendix B).

[6] Toilet paper increased by 12.7%, dry pasta by 12.0%, and canned beans by 7.8% (see Appendix B).

volume and UPC count jumps on the hurricane week seem to come from purchases after the day of the hurricane instead of before. Using affected household data, the drug stores' share of daily peanut butter volume increases on days after – not before – Sandy's date of landfall within the week of the hurricane (details in the Appendix B). The consumer stockpiling behavior across retail channels – especially between food grocers and mass merchandisers – shows disaster responsiveness of demand that is consistent with trends showing consumers buying more groceries from channels other than food grocers (Chenarides & Jaenicke, 2017; Ver Ploeg et al., 2015).

Within-channel Heterogeneity: Food Grocer

After regressions for all product categories among only food grocers, the δ estimates from Equation 2-2 and Equation 2-3 across stores of different sizes are presented using event-study plots in Figure 2-3 for the most stockpiled product categories (among the six) during Sandy: bottled water, peanut butter, and bread. Event-study plots for the remaining three are provided in the Appendix B, as well as regression outputs for all.

Across all three products, large food grocer stores in Sandy's path bear the brunt of pre-Sandy stockpiling. Large stores experienced the largest proportional volume sold increases – bottled water by 59.1%, peanut butter by 49.8%, and bread by 27.0% – one week before Sandy hit but the increments diminished during Sandy week itself (at t=0)[7]. Afterwards, volume sold contracted for bottled water (for 3 weeks) and bread (for 1 week) but UPC count for both recovered by the second week after Sandy. Along with non-negative coefficients for peanut butter, large food grocers shows strong post-Sandy sales recovery.

Consumers along Sandy's path also purchased food stockpiles from medium-size food grocers the week before Sandy, albeit in smaller percentage volume increments than from large-sized ones. The increments also became proportionally larger for the three categories during the disaster week. The week after, bottled water and bread volume sold fell below average for two consecutive weeks, but UPC count recovered by 2 weeks and 1 week, respectively.

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[7] The noticeable drop in volume sold at t=-10 and rise at t=-9 can explained by Hurricane Irene in 2011 who shared some trajectory with Sandy but a year earlier. The disturbance by Irene in the form of pre-disaster stockpiling and the ensuing volume contractions upon Irene's landfall during this study's control year (2011) caused differences at the same relative week to be underestimated and overestimated, respectively, for stores that experienced both hurricanes. Hence, negative-sign disturbances at relative week t=-10, therefore, are expected in results across retailers and popularly stockpiled product categories.

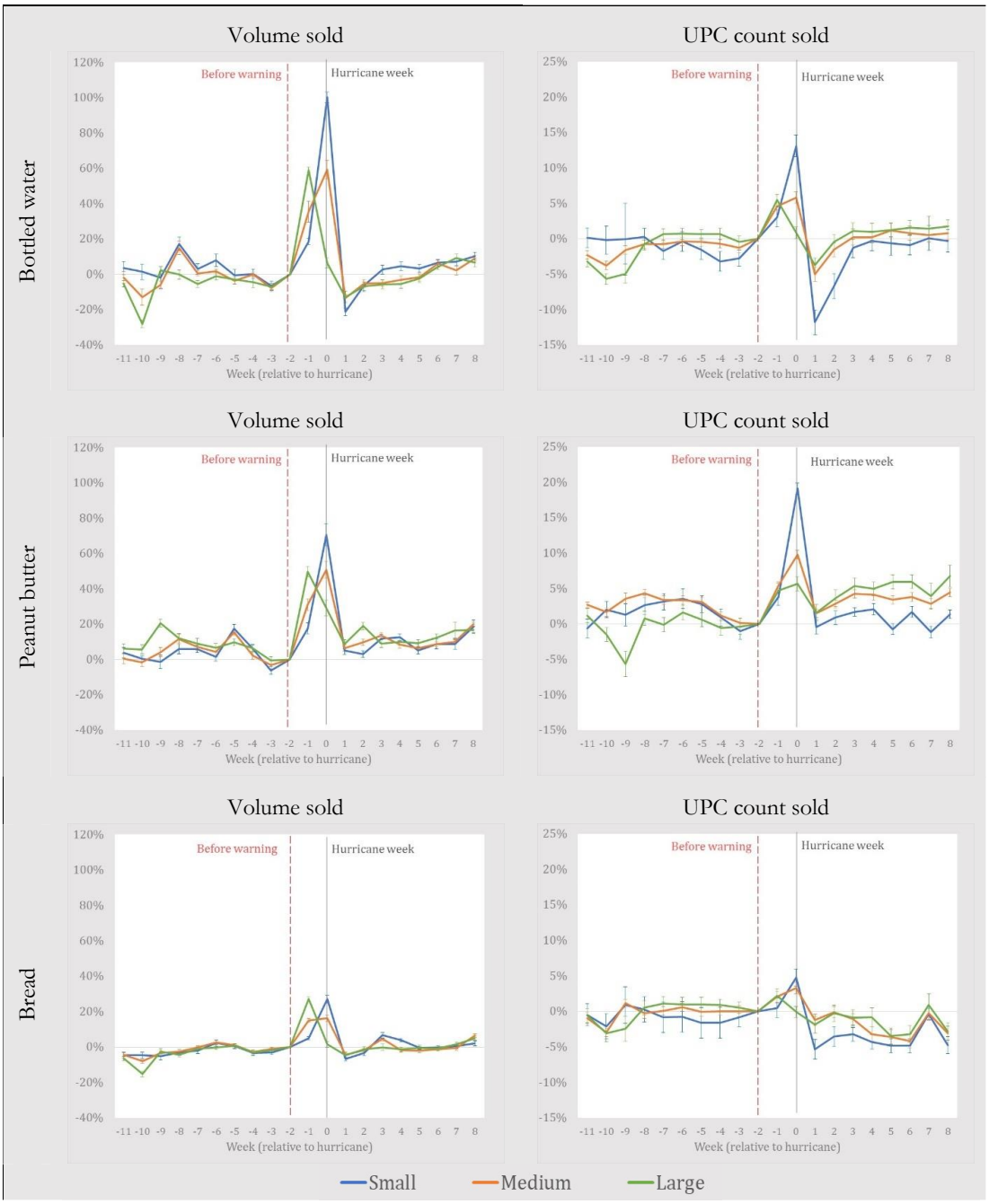

Figure 2-3: Event-study plots reflecting weekly average treatment effects of Sandy in volume and unique UPC count sold for 3 product categories across store sizes within food grocer channel

Visually evident, volume spikes at affected small food grocers happened later – during the disaster week instead. Since Sandy hit mid-week, the massive jumps in volume sold – by 100.2 % for bottled water, 70.6% for peanut butter, and 27.2% for bread – could have included both very late stockpiling (a day or two before Sandy hit) or recovery within days of the impact. After

accompanying the spikes, UPC count sold for bottled water and bread plunged below their averages for 3 and 6 consecutive weeks, respectively, taking longer to recover than their volumes.

From analyzing multiple categories expected to exhibit similar stockpiling patterns simultaneously right before a hurricane, this study shows indications of stockout incidents for bottled water and bread across food grocers of all store sizes. Non-negative average treatment effects on volume and UPC count sold for peanut butter during Sandy and the following weeks imply that stores remained operational and consumers continued shopping for groceries. Therefore, negative treatment effects in bottled water and bread during the same time strongly suggest stockout incidents – most pronounced at small stores – instead of store closures or reduced shopping activities.

Nevertheless, despite facing the majority of early disaster preparations by consumers a week from an extreme event and likely stockouts, on average, large stores exhibited the fastest recovery among food grocers. Considering Sandy's destruction, a likely explanation for this performance is that larger stores may have afforded larger inventories, higher costs of replenishing inventories amidst hurricane recovery efforts, more connected transport routes from their supply centers, and more resilient operation planning.

Within-channel Heterogeneity: Mass Merchandiser

Among mass merchandiser sample, results for the same three products – showing largest magnitudes of stockpiling – are presented using event-study plots in Figure 2-4 while the rest are provided in the Appendix B (along with regression outputs). As in the section above, a similar pattern of disturbance is observed around 10 relative weeks from Sandy due to Irene's landfall in 2011.

Except for bottled water, average treatment effects from Sandy on volume sold for all categories are positive and largest in magnitude in large stores a week before Sandy hit. Volume sold increased by 63.6% for peanut butter, 33.5% for bread, 30.7% for canned beans, 22.8% for dry pasta, and 18.8% for toilet paper. Although not the largest among mass merchandisers, bottled water volume sold at large stores on average increased by 70.1% the same week before falling by 3.7% during the following week of Sandy. Meanwhile, bottled water's UPC count increased for two weeks (at t=-1,0), peanut butter's increased for a week (at t=-1), and bread's remained at average.

Affected medium-sized stores, however, saw a negative change in bread volume sold during Sandy week when other products saw elevated levels. With similar trends in UPC count sold across the products, the 9.9% drop in bread volume sold is likely caused by stockout of bread.

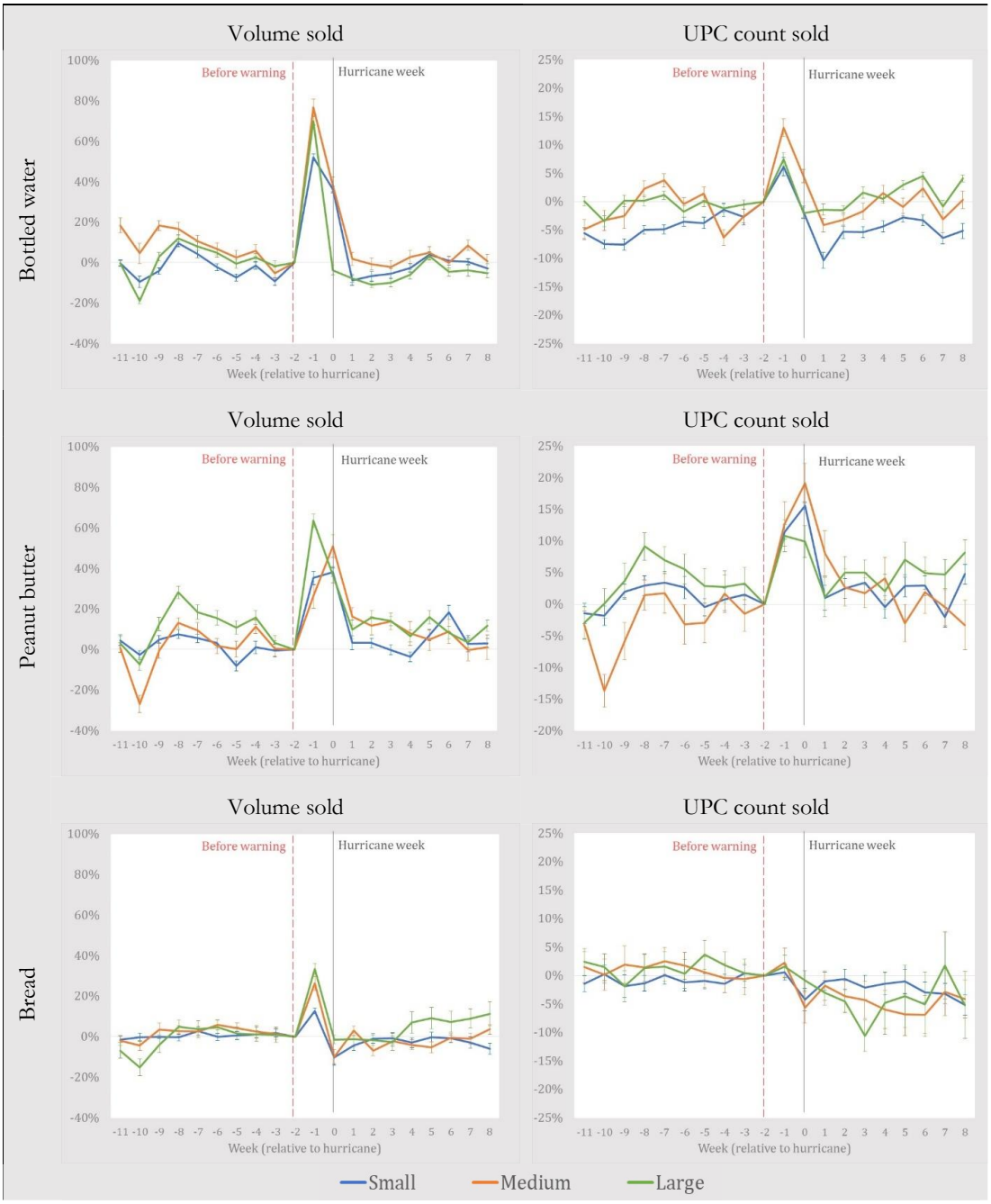

Figure 2-4: Event-study plots reflecting weekly average treatment effects of Sandy in volume and unique UPC count sold for 3 product categories across store sizes within mass merchandiser channel

Small-sized mass merchandisers along Sandy's path sold elevated bottled water and peanut butter volumes for two consecutive weeks since week t=-1 but only sold more bread for a week before Sandy hit. However, combining the 36.4% higher volume sold with 1.8% less UPC count sold, bottled water might have been out of stock at small stores during Sandy week. Meanwhile, as

bread volume dropped across all mass merchandisers, it is possible that the average affected consumer reduced bread purchases from mass merchandisers. A possible explanation is that consumers already purchased bread from large and medium food grocers a week before Sandy, as found in the previous section.

Consumer Experience and Heterogeneity

On a pooled household sample across the six product categories, stockpiling behavior is observed only for bottled water and bread. A week before Sandy, households around Sandy's path bought an additional 51.2% of bottled water and 41.9% of bread (see Figure 2-5) – roughly around an additional half-week's worth – using regressions based on Equation 2-2, supporting this study's earlier findings from the retailers' perpective. While also purchasing 27.8% more bottled water during the week of impact, however, the average affected household bought 22.5% less canned beans, 59.2% less dry pasta, 55.4% less bread, and 39.3% less toilet paper that same week[8]. Although the treatment effect on bread purchases suggest households made intertemporal adjustments by buying earlier, the effects on bottled water purchases suggest a net increase in average weekly consumption. Since a major hurricane can damage sewage and water treatment facilities (which Sandy did) critical to household water use beyond just for drinking, bottled water purchase patterns by households around Sandy's path indicate preparations that are aligned with the nature of the imminent disaster.

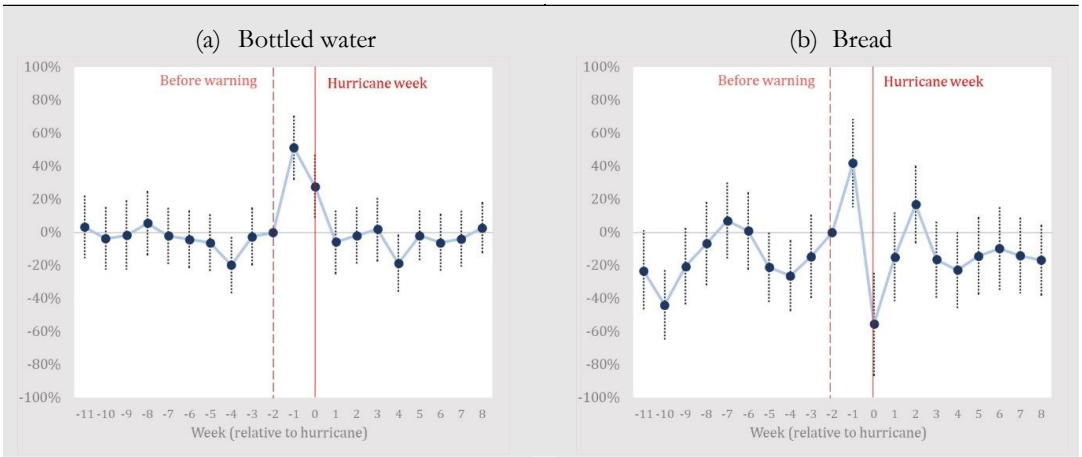

Figure 2-5: Event-study plots reflecting weekly average treatment effects of Sandy in volume purchased per member from pooled household sample for bottled water and bread

[8] Plots for other products and full regression outputs are provided in the Appendix B.

Following observed stockpiling of bottled water and bread among households from the section above, δ estimates for both products are presented using event-study plots in Figure 2-6 after regressions using Equation 2-2 across the product categories and household characteristics[9].

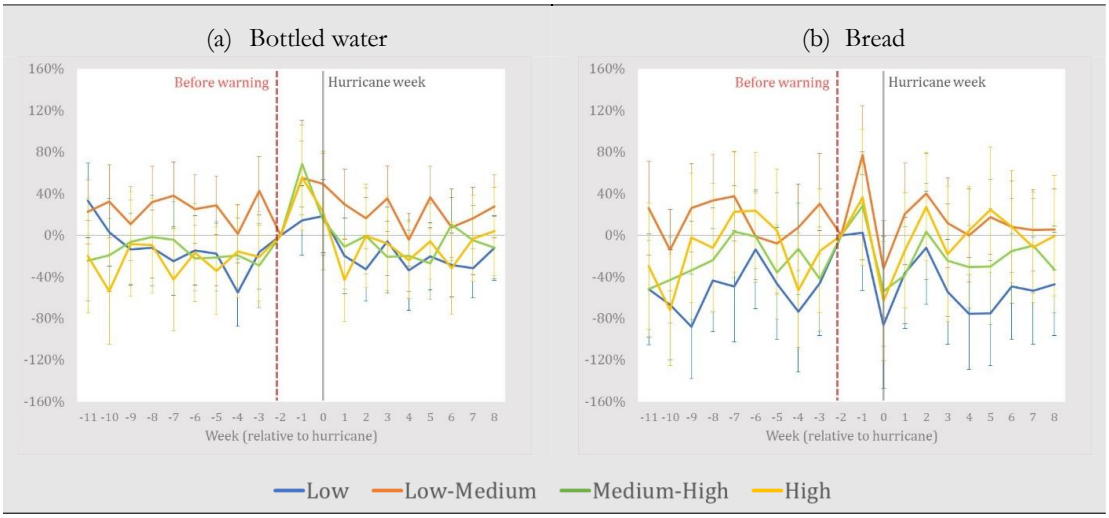

Figure 2-6: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy in volume purchased per member for bottled water and bread across household income

Variation in household income seems to affect some heterogeneity in stockpiling of bottled water. Particularly, households of low income, on average, did not purchase additional bottled water before (or during Sandy) while other households bought at least an additional half-a-week's worth of bottled water supplies. Oddly, no significant stockpiling of bread is observed except by low-to-middle income households and by a large magnitude (77.5% increase). A possible explanation this result in bread is that most single-individual households in the sample fall within this income group and – on average – do not regularly buy bread weekly, therefore, in combination with Sandy's approach, bread purchase cycles became aligned. The fall and rise of bread purchases following the stockpiling seems to support this explanation. Despite that, the absence of bottled water stockpiling for low-income households facing Sandy highlight a potential vulnerability in the face of an imminent disaster. When clean water sources are disrupted during a major disaster, low-income households, as these results suggest, do not stockpile enough clean water to cover for additional use, such as for sanitation. This vulnerability is critical to reduce disaster casualties and disease infections given that – during Sandy's disruption of power and running water lasting two weeks or more – households were deprived of clean drinking water and proper sanitation (Schmeltz et al., 2013).

[9] Plots for other products and full regression outputs are provided in the Appendix.

While heterogeneity is not found to be significant in regression results across household race, there is stockpiling heterogeneity across household presence of children for bottled water and across household vehicle ownership for bread[10]. These two results are visually presented in Figure 2-7. On average, households without children who are affected by Sandy are better stockpiled, clearly purchasing 66.4% more bottled water a week before the hurricane impact. The overall below-zero coefficients for household with children, given the selection of a base week t=-1, suggest that those with children may indeed have started stockpiling a week earlier (at t=-2) than others. This explanation is plausible given that households with children tend to be more cautious of potential risks that endanger their children, resulting in household preparations much earlier in response to ever slight indications of a hurricane around two weeks out, even before a hurricane watch – which precedes a hurricane warning – is issued. Although bread stockpiling by vehicle-owning households a week before Sandy is significantly different from zero, there is so much variation that the mean bread stockpiling level by households without vehicles is only around 1% shy of its 95% confidence interval.

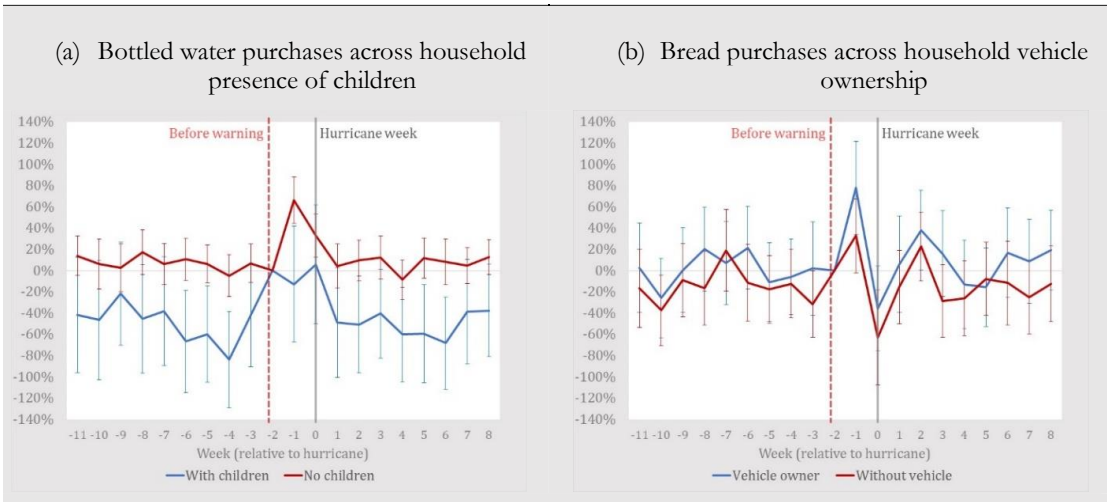

Figure 2-7: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy in volume purchased per member

[10] Results for all other products are available in the Appendix B.

Discussion and Limitations

Although this study faces less treatment endogeneity due to Sandy's largely unexpected landfall and strength of impact, treated observations in this study are based on fixed geographical straight-line distances to the historical hurricane path. Given that a hurricane changes intensity and size as it moves, the true area of impact – and the extent of damage threat – is likely to vary across its path. Future research can aggregate damage assessments are county level or lower to better account for different levels of Sandy's threat to communities that may influence the extent of household preparation and stockpiling. While Sandy's initial impact on counties occurred largely within the same calendar week, other hurricanes or disaster may hit across the calendar week and make it difficult to use the weekly retail scanner data. More detailed daily retail data in the future can allow researchers to investigate disaster responses more precisely, especially since operational public or community responses need to be planned at hour- or day-level.

Without inventory data on retailers and other institutions, this study relies on sales data that may not fully describe the existing disaster preparations. Some retailers might have already had procedures in place for extreme events like Sandy. Meanwhile, some government institutions or communities might have already stockpiled large volumes of necessities to prepare for disasters. More information on existing inventories and their emergency-time procedures, therefore, can shed light on the levels of preparedness of both communities and retailers to unfamiliar emergencies.

While this study only includes a disaster more familiar to the U.S., such as hurricanes, future research can investigate other extreme events that are of a different nature. Recent extreme events worth investigating include the pandemic outbreak in 2020 and Texas' severe winter in February 2021. While the pandemic's global reach complicate identification, the extreme cold in Texas in early 2021 was an environmental shock whose response was limited geographically due to inter-state variations in power grid. Comparisons of the type of products households stockpiled in such an unfamiliar event can reveal household tendencies in times of uncertainty that, in turn, inform policymaking to account for heterogeneity and nuances.

The mechanism with which households purchase goods at stores when faced with stockouts may be more complex. Households may decide to switch brands, switch stores, find imperfect substitutes among products available on the shelves, or do any combination of the three. Each of these three options impacts an individual store's volume and UPC count sold differently. Therefore, a possible method to identify stockout events is using household purchase data – instead of store sales data – by detecting brand or UPC shifts from the households' "usual" purchases. Levine and Seiler (2021)'s method to investigate brand switching during hurricane-time stockouts for bottled

water can be extended to locate stores or brands that were stocked out. Deeper investigation may confirm that a large negative change in UPC count corresponds to a stockout using individual store volume from 2012 alone, specifically for stores within 100-mile radius, such as all stores in New Jersey. Food grocers, for example, is the largest volume contributor of grocery sales among retail channels. Looking simultaneously at two highly stockpiled product categories (such as bottled water and peanut butter) and the most popular brands, a plunge in volume sold of one product accompanied by continued sales in another may indicate a stockout in a retailer that is distinct from a store closure. However, zero purchases across products can occur by either store closure or widespread stockout, or a combination of the two, complicating identification between demand- and supply-side mechanisms. While simultaneous shifts in package size bought can indicate stockpiling, detecting an actual stockout from observed sales remains challenging without knowledge of inventories.

While this study highlights likely instances of stockouts, no explicit calculation of welfare is done in this study, including the welfare implications of consumers switching channels while preparing for an imminent disaster. Using consumer panel data, future research can investigate the welfare implications caused by disaster preparations. Although certain disasters prohibit the recording of household data, the recent global pandemic disrupted households without depriving them of energy. More precise recording of household consumption data during major disasters will allow researchers to calculate welfare implications of disaster preparations and responses.

Conclusion

Investigating retailer and consumer responses to Hurricane Sandy in 2012, this study reveals response patterns to a major natural disaster relatively less familiar to a region. Using weekly retailer data while combining untreated counties and prior year observations to build counterfactual trends, this study isolates and estimates the impact of Sandy on volume and UPC count sold at retailers in affected counties. On average, pre-disaster stockpiling behavior is evident for bottled water, peanut butter, bread, as well as toilet paper. On average, a week before Sandy, retailers sold additional volumes equivalent to around an extra half-week's worth of bottled water, as well as around an extra day's worth of peanut butter, bread, and toilet paper. Around another half-week's worth of bottled water and peanut butter are sold within the disaster week itself. Comparing this with hurricane preparation guidelines, the total stockpile volume over the two weeks – roughly a week's worth of bottled water, more than half-a-week's worth of peanut butter, as well as a few days worth of bread

and toilet paper – fulfills the recommended minimum 3-day supply of water and easy-to-prepare food.

Among retail channels, pre-Sandy stockpiling for bottled water and bread by consumers a week before landfall occurred across channels but only at food grocers and mass merchandisers for peanut butter. Within food grocers, pre-Sandy purchases began at large and medium stores, but proportionally the largest in magnitude at small stores during the disaster week itself, indicating possible channel switching behavior within days of the disaster. Moreoever, bottled water stockout likely occurred across food grocers although bread stockouts likely only happened at small ones. Among mass merchandisers, all stores experienced consumer stockpiling across bottled water, peanut butter, and bread, but only small ones were likely out of bottled water and medium ones out of bread during the disaster week.

Investigation using household-level data confirms consumer stockpiling behavior for bottled water and bread, but not for peanut butter. A deeper look reveals that affected households with no children stockpiled more bottled water than those with children. Meanwhile, affected household with vehicles stockpiled more bread than those without, albeit barely statistically significant. Most importantly, this study finds no significant bottled water stockpiling among low-income households as Sandy approached. This heterogeneity indicates the vulnerability of low-income household in bracing themselves for a major disaster. Given that hurricanes are known to cause power disruptions and possible contamination of clean water sources, the lack of bottled water stockpiling among low-income households is alarming and puts them at substantially higher risk of sanitary-related diseases and dehydration due to lack of access to clean water during major disasters (such as Katrina in 2005). This finding, therefore, highlights a critical point for targeted preventive measures that reduce disaster impacts on health risks, even possibly indirect casualities, in households already financially vulnerable.

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Researcher(s)' own analyses calculated (or derived) based in part on data from Nielsen Consumer LLC and marketing databases provided through the NielsenIQ Datasets at the Kilts Center for Marketing Data Center at The University of Chicago Booth School of Business.

The conclusions drawn from the NielsenIQ data are those of the researcher(s) and do not reflect the views of NielsenIQ. NielsenIQ is not responsible for, had no role in, and was not involved in analyzing and preparing the results reported herein.

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Chapter 3

Household food diversity and healthfulness during the early pandemic response environment in the U.S.

Introduction

American households have not seen such a disruption to their food behavior as during the Covid-19 coronavirus pandemic since the Great Depression. Given that the dietary quality of eating patterns in the United States (U.S.) – as measured using the Healthy Eating Index (HEI) – improved very little over the past two decades (USDA, 2020), the persistence of household food habits presents a challenge to policymakers facing increasing risks of diet-related chronic diseases in the population. As International Food Information Council (2020) reports 80% of Americans having altered their food habits due to the pandemic, the external shock of the pandemic environment to household day-to-day normality provides a critical junction at which household responses can either trigger a take off towards a better trajectory of food patterns or reverse intervention efforts achieved so far in promoting healthier dietary patterns.

Amidst an increasing trend over decades towards households eating out, responses to the pandemic may have temporarily halted – or at least slowed down – this trend by forcing households to consume foods largely prepared at home. Over the years, Americans ate out more frequently at the expense of their dietary quality and health (Kant & Graubard, 2004; McGuire, 2011; Nagao-Sato & Reicks, 2022; Todd et al., 2010). However, as also evident in the United Kingdom (O'Connell et al., 2022; Revoredo-Giha et al., 2022), Italy (Fanelli, 2021), and Canada (Goddard, 2020), community and government responses to the pandemic resulted in households drastically reducing consumption of food away from home and substituting it with higher grocery consumption due to closure of various food establishments (Ellison et al., 2021).

The literature studying the impact of this global disaster on household food behavior and health continues to grow as policymakers seek to address its long-term implications while building resilience to future disasters. Early works utilized survey responses to timely capture household changes in shopping behavior as the pandemic unfolded (Deschasaux-Tanguy et al., 2021; Murphy et al., 2020; Poskute et al., 2021; Redman, 2020; Wolfson & Leung, 2020; Snuggs & McGregor, 2021). Shortly after, studies investigated shifts in household shopping formats – towards non-contact options (such as online shopping) – when buying groceries (Chintala et al., 2021; Ellison et al., 2021;

Lo et al., 2021). With more available data, studies began evaluating household dietary quality and health implications (Al-Domi et al., 2021; Cummings et al., 2021; Fanelli, 2021; Mattioli et al., 2020; Mignogna et al., 2022; O'Connell et al., 2022). Amidst the proliferation of research into pandemic household behavior and nutrition, no research has exploited detailed household grocery purchase data to investigate the pandemic-induced changes to household food diversity and healthfulness in terms of the spending mix.

This study aims to contribute to the expanding pandemic and disaster response literature in a few ways. Firstly, this study investigates how the early pandemic response environment altered households' food diversity and healthfulness in the U.S. across a year-long period to present a more complete picture. Secondly, this study identifies likely sources of heterogeneity in changes to food healthfulness across households of differing characteristics, especially among households with children whose schools abruptly suspended activities during the academic year. Thirdly, this study compares the extent of the food healthfulness shifts during the pandemic with a more known disaster to provide a better understanding of the pandemic's impact beyond emergency stockpiling or panic buying.

In its investigation, this study makes use of event-study plots from coefficients estimated in regressions of food diversity and healthfulness measures, with reference to the event of state-recommended school closures as the country entered into the pandemic. Combining detailed household panel purchase data with estimated food costs, this study calculates household monthly Berry Index (Berry, 1972) as a measure of food spending evenness at both food- and food-group-level, as well as the household monthly USDA Score as a measure of food healthfulness (Volpe & Okrent, 2012). As in O'Connell et al. (2022), this study controls for seasonal effects by including each household's observations from a year prior. Using split samples, heterogeneity in overall food healthfulness as well as category-specific expenditures are also investigated. Finally, the link between food healthfulness changes and widespread stockout phenomenon is explored before comparing results from a subsample of households with a recent hurricane event.

Background and Literature Review

Poor nutrition is a contributor to health problems among Americans. Around 42% of adult and 20% of young people between 2 and 19 years of age in the U.S. are obese and at higher risk of heart disease, type-2 diabetes, and at least 13 types of cancer (CDC, 2022b). To make matters worse, more than a third of Americans – just under 100 million people – suffer from prediabetes, with 80%

of them unaware of it and under increasing risk of various diseases associated with type-2 diabetes due to being overweight or obese (CDC, 2022c). On average already consuming more than 3,400 mg a day (48% higher) compared to the 2,300 mg daily recommended maximum (CDC, 2022b) and with more than 94 million adults age 20 or older having total cholesterol levels above the recommended maximum of 200 mg/dL (Tsao et al., 2022), Americans risk blood pressure spikes that can lead to stroke or heart disease. Packaged, processed, store-bought, and restaurant foods contribute over 70% of the sodium that Americans eat (CDC, 2022b). Instead of moving towards a healthier diet, Americans indeed consume higher amounts of saturated fat and added sugars through food, shifting further away from the targets of Healthy People 2030 (ODPHP, 2020).

Given that the human body requires a variety of nutritional elements for normal functioning, a more diverse dietary intake is highly associated with healthier outcomes (Mozaffari et al., 2021; NHMRC, 2017; USDA, 2020). Food consumption with higher food group variety correlates with nutrient adequacy (Foote et al., 2004; Krebs-Smith et al., 1987) and omission of several major food groups increases the risk of mortality (Kant et al., 1993). Total diet diversity is also found to reduce risk of colon, colorectal, gastric, oral and pharyngeal cancer (Fernandez et al., 1996; Fernandez et al., 2000; Garavello et al., 2008; La Vecchia et al., 1997; Levi et al., 1998). Among smokers, higher total diet diversity is inversely associated with risk of squamous cell esophageal cancer (Lucenteforte et al., 2008). Furthermore, Conklin et al. (2016) finds that greater total diet diversity – consuming five or more food groups – to be significantly associated with a 30% lower incidence of type-2 diabetes among Europeans. Meanwhile, the Dietary Guidelines for Chinese Residents even recommended daily consumption of more than 12 kinds of food and 25 or more every week, half of which should come from dark vegetables alone (Wang et al., 2016). Especially in older individuals, eating diverse foods help retain cognitive abilities and lower psychological stress during aging (Zhang & Zhao, 2021), most evident in nutritional diet management in elderly nursing homes (Bernstein et al., 2002).

Consequently, studies have found the diversity within certain food groups are more favorable than in others. Cooper et al. (2012) finds that food intakes with higher diversity within fruits and vegetables (F&V) – including within each of the two groups – are associated with a lower risk of type-2 diabetes, independent of quantity. Also independent of consumption quantity, higher combined F&V diversity and fruit diversity is inversely associated with the risk of esophageal squamous cell carcinoma (Jeurnink et al., 2012). Among smokers, higher variety in vegetable consumption is associated with lower risk of lung cancer (Büchner et al., 2010). Even after controlling for the intake volume, vegetable diversity remains significantly associated with lower risk of colon and rectal cancer (Fernandez et al., 1996; Fernandez et al., 2000). Fruit diversity and vegetable diversity are both associated with lower risk of gastric cancer, independent of total calorie

intake and total servings consumed (La Vecchia et al., 1997). Garavello et al. (2008) also finds that higher diversity of vegetables is inversely related with risk of oral and pharyngeal cancer while Lucenteforte et al (2008) finds a similar inverse relationship with risk of esophageal cancer. In contrast, a combination of low variety in vegetable consumption and high variety in consumption of snacks, sweets, carbohydrates, condiments, and entrées is correlated with higher body fatness and energy intake in the long term (McCrory et al., 1999). Risk of colon cancer among men increases by 50% with greater diversity in consumption of meats, fish, poultry, eggs, and refined grains while the risk in women is 20% lower with greater diversity in vegetable consumption (Slattery et al., 1997).

Beyond the counting of unique food products (Lee, 1987; Shonkwiler et al., 1987), food diversity measures expanded as diversity-related indices were increasingly applied in genetics, linguistics, and industrial organization literature. A common measure of industrial concentration besides market entropy (Theil, 1972; Hart, 1971; Hall & Tideman, 1967) or Shannon's index (Patil & Taillie, 1982), the Herfindahl index was adopted into the context of food through the use of the Berry index (also known as Simpson index) to measure diversity – as the "inverse" of concentration – in food purchase or sales that emphasizes equality of shares across food groups (Jekanowski & Binkley, 2000; Lee & Brown, 1989; Stewart & Harris, 2005; Thiele & Weiss, 2003).

Meanwhile, in the nutrition literature, dietary quality measures increasingly combine diversity and adherence to dietary standards to better evaluate household diets or food intake. Traditionally, food intake data is obtained from questionnaires or food diaries for a cross-section of individuals and the calculation is based on the number of consumed food groups, subgroups, or unique items reported by the individuals during the observation period. In its review of extant studies, Mozaffari et al. (2021) includes Dietary Diversity Score (DDS), Recommended Food Score (RFS), Food Variety Score (FVS), Food Group Index (FGI), Dissimilarity (using Jaccard distance), and food variety ratio, among others. Many of these compare dietary intake data against nutritional requirements while calculating food diversity. Some assign heavier weights to certain food groups to represent greater health benefits, such as using energy contributions of the respective food categories to the total energy of the food basket (Katanoda et al., 2006) or applying weight based on higher recommended intake quantities for a healthy diet (Drescher et al., 2006).

In light of relative price differences across food groups, Volpe and Okrent (2012) devised the USDA Score as a measure of household food healthfulness based on expenditure shares. Combining existing recommended individual-level food plans, household demographics, and price indices of various food groups, they first calculated the recommended "healthful" expenditure shares of 24 food categories, building upon calculations by Carlson et al. (2007). Then they calculated the USDA Score for each quarterly household food purchase basket based on the deviations of the

actual from the recommended expenditure shares. Smaller deviations from the recommended expenditure mix translates to a higher USDA Score. Calculating USDA Score using monthly household food purchases, Chen et al. (2019) finds that higher USDA Score is associated with lower risk of childhood overweight or obesity among American households.

It is, however, unlikely that every household precisely tracks individual intakes of various nutrients from food for each of its members. Recommendations on healthy diets, therefore, suggest simpler guidelines to help household consume foods that cover as much nutritional needs as possible, including through categorizing various foods into easily recognizable food groups. In the most recent Dietary Guidelines for Americans 2020-2025, American households are encouraged to "start simple" using MyPlate plate according to 5 main food groups: fruits, vegetables, grains, protein, and dairy. Considering the diverse food environment challenges that households face, Health Canada (2019) stresses the need for simplicity in making healthy eating guidelines, reflected in the basic food groupings in its recommendations: vegetables, fruits, whole grain food, protein foods. The consensus on simplicity is the same halfway across the globe as Indonesia maintains the public slogan "4 Healthy, 5 Perfect Food" (4 food groups plus milk) while Thailand encourages eating a variety of food from each of five major food groups (WHO, 2010). These food groups assist households in recognizing potentially missing nutrients in their food basket when consuming food – and, prior to that, acquiring food. In the same spirit, therefore, using food groups to measure food diversity more likely resembles household behavior when planning, purchasing, and consuming food within their budget.

Although households' food patterns tend to be persistent across time, the drastic precautionary measures taken by government and communities significantly disrupted normality in household activities, including those regarding food. From school to mobility, households had to adjust how their daily activities, including how they eat and shop for food. Without precedence for most households, the changes ushered by the pandemic came as a surprise to households who had to reorganize how they operate and spend. Concerned about health and safety, most schools abided by their state's recommendation to close school buildings. With children out of school, companies seek alternative working modes as parents of school-age children try to work from home or juggle their schedules. Most recognizably, the closure of most food establishments forced households to find substitution for eating out through buying more groceries. Food purchases at workplaces, schools, recreation facilities, transit stations, and eateries plummeted while total spending increased by 50% (Baker et al., 2020). Without the option of spending additional money on food away-from-home and fast-food establishments (Blisard et al., 2003; Yaniv et al., 2009), households shifted towards food prepared at home and spent more on groceries. Unsurprisingly, the increase in grocery purchases for

households in states implementing shelter-in-place were three times than those in other states (Baker et al., 2020). In a sample from two major metropolitan areas in the U.S., households increased grocery expenditures, consumed more snacks, and shifted towards shopping across more retail formats (Chenarides et al., 2020) while increasing energy density of their food intake (Poskute et al., 2021). Yet, whether American households are merely buying more of the same groceries, buying a more diverse basket of groceries, or buying a different mix of the same groceries have yet to be explained by recent studies.

Meanwhile, some studies suggest evidence for heterogeneity in responses among households. A survey by Chenarides et al. (2020) reveals that individuals unemployed due to the pandemic were 11.7% more likely to indicate consuming less fresh produce. The same study finds that those who identify as Black or African American (non-Hispanic) were found more likely to consume more fresh produce, dairy, meat, and bottled water. Possible variations in preferences for food-away-from-home across race may also determine meal menus that households attempt to prepare at home or purchase from grocery stores to replace eating out.

Assuming that household food provisioning is a task exclusively shared among adults, the time spent for a household to plan and prepare its meals increases with the higher volume required by more children. Mancino & Newman (2007) finds that number of children is significantly correlated to the amount of time women spend preparing food, regardless of employment status. However, the same study does not find the same significant relationship for men. School closures during the early part of the pandemic and reduced school hours during later months, however, meant that the household's adults were also forced to spend more time tending to children due to the pandemic environment. Given that mothers on average spend thrice more time than fathers caring for school-age children in the household (Zick & Bryant, 1996a), additional time required to accompany children in households are likely to be siphoned more from the female member's outside-work time, including that which has been allocated for food preparation. At the same time, this effect may be subdued as having more children may involve economies of scale as average fixed costs of food preparation fall. As the pandemic environment is expected to shock households with children with reduced outside-work time, households with children are faced with increased food preparation time that may adversely impact household food choices.

At the same time, a household's purchasing capacity can influence how it responds to changes to its food environment. Beatty et al. (2021) finds that higher-income households tend to stockpile proportionally more than other households when facing a natural disaster such as a hurricane. With fruits and vegetables arguably more expensive than sources of carbohydrates, higher income households are more likely to see a larger than proportionate increase in purchases of fruits

and vegetables compared to lower income households. Households owning vehicles are also more likely to be able to juggle activity and grocery shopping schedules with less concern for public transportation schedules, shorter store opening hours, or grocery volume per trip than households without personal vehicles. Therefore, a household's financial and physical capacity to acquire groceries may affect how it adjusts its food pattern entering the pandemic environment.

Methodology and Data

Event-study Method

An event-study approach is most helpful to describe the disturbance to household food trends as households encountered the pandemic. In this study, the event of interest represents the beginning of an early pandemic response environment faced by households. This environment contains a combination of various pandemic-induced changes to household adjustments that lead to food purchases. Since not all states responded to the pandemic simultaneously, for each household, the event is defined as the start of school closures recommended by the state government of the household's residence county in 2020 as part of the state-level precautionary measures taken at the beginning of the pandemic. Although the recommended start of school closures at each state is identifiable by date, this study defines the event as a 4-week "event month" or "school closure month" whose exact weeks-of-the-year may vary by state but are identical for all households residing within the same state. This event month then becomes the reference month (m=0) in all event-study plots, hence all other months in the sample period are relative to the event month.

As the reference point for defining periods of observations, the event month is first defined for each state. The event month is a period comprising 4 consecutive weeks and each week is defined as a Sunday-to-Saturday cycle. While data for this analysis is mainly obtained from aggregating daily scanned household purchases in the Nielsen Homescan Consumer Panel dataset, this Sunday-to-Saturday week cycle is consistent with how retailers generally report weekly sales in the Nielsen Retail Scanner dataset. In this study, the event month is defined as the 4-week period in which the third week contains the first day of school closure in that state due to the pandemic, regardless of whether the announcement was made during the same week or the week before. While the first day of school closure within a state is assumed to be identical for all schools within the state, it may vary by state. As a result, the exact date range of the event month may also vary by state. As households may have various degrees of access to knowledge of school district decisions prior to the public announcement

of state recommendations on temporary closure of in-person school activities, the first and second weeks of the event month will absorb effects of (and if any, anticipation of) this announcement so that the relative month right before the event month can be as clear as possible from pandemic-triggered changes in household food behavior. Meanwhile, expecting that the average household instantly responds to the announcement by stockpiling food beyond a week's worth of groceries (Taylor et al., 2020), the fourth week of the event month is expected to show lower household purchases due to households smoothing consumption after buying too much when stockpiling (during the second and third week). Prior studies provide evidence that consumers were buying groceries worth around two weeks of consumption during grocery rush that week (Wang et al., 2020; Zuokas et al., 2022).

Consequently, for each state, the pandemic year is defined as the duration ranging from 6 relative months before to 6 relative months after the event month. Consistent with the event month, each relative "month" is defined as a period of 4 consecutive weeks, following how O'Connell et al. (2022) defines monthly observations. The monthly aggregation allows this study to observe more meaningful changes, especially regarding in grocery composition, amidst possibly less frequent shopping by households. Identical to how this study defines the weeks in the event month, each week is a Sunday-to-Saturday cycle. Effectively, the pandemic year in this study consists of 52 weeks (collapsed into 13 relative months that each contains 4 weeks) whose range may slightly vary by state, depending on the week of the first day of school closure. This differs from how O'Connell et al. (2022) defines pandemic year in its study according to the calendar year of 2020. Aggregating household purchases to "month" level observations reduces the number of zero observations in the sample because not all households shop for groceries every week[11].

To control for the average seasonal trend of household purchases across relative months, this study assembles a set of "control year" observations using observations from 52-weeks prior to each observation during the pandemic year. Both O'Connell et al. (2022) and Chen et al. (2021) use methods that involve differencing observations in 2020 with those of 2019 when investigating the pandemic phenomenon. Whereas O'Connell et al (2022) directly defines calendar year 2019 as the control year, this study maintains the flexibility for the exact date range of the control year to vary by state according to each state's pandemic year definition. Consequently, this use of a balanced panel allows each household's purchases 52 weeks prior to be the control for its own purchases during the pandemic year. Once aggregated into "month" level observations, each household's observation 13

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[11] The average household percentage of zero observations during the control year for the sample is 4.8% when observations are made at monthly level compared to 20.7% when at weekly level.

relative months – effectively a year – prior becomes the control for its own monthly observation during the pandemic year. Therefore, this study uses each household's food trend during the control year as the counterfactual trend during the pandemic year had the early pandemic response environment not happen. In their work, O'Connell et al (2022) considers that all households faced the pandemic environment simultaneously – beginning March 2020 – given the United Kingdom (UK) government's nationwide March 3 "coronavirus action plan" announcement (DHSC, 2020). However, the timing in the U.S. has larger variance due to diverse geography and decentralized governance – at least between states. Based on Google's Community Mobility report (Google, 2022), the spike in attendance at U.S. grocery stores and pharmacies coincided with the announcement of state-recommended school closures instead of state emergency declarations regarding the pandemic. Therefore, this study opts to use the start of respective state-recommended school closures as a proxy for the combination of pandemic-induced events – the early pandemic response environment – that directly and indirectly affects what foods households end up purchasing.

The basic regression model in this study is based on the equation:

$$FoodOutcome_{i,m,y} = \alpha + \sum_m \beta_m (PandemicYear\ x\ RelativeMonth_m) + \sum_m \delta_m\ RelativeMonth_m + \rho PandemicYear + \varepsilon_{i,m,y} \quad (3\text{-}1)$$

where households are indexed by i, relative months are indexed by m (for $-6 \leq m \leq 6$) and relative years are indexed by y. Idiosyncratic errors are represented by ε and are assumed to be clustered at county level as household unobservable shopping behaviors are greatly influenced by local pandemic practices adopted by respective counties. In Equation 3-1, coefficients δ_m capture relative month m fixed effects. As with many event-plots, this study selects relative month m=-1 as the base week so that relative month fixed effect δ_{-1} acts as the constant term a and is dropped during the estimation. *PandemicYear* is an indicator variable which takes the value of 1 if the observation is during the pandemic year and 0 if during the control year. By including *PandemicYear* while concurrently selecting m=-1 as the base week, the coefficient ρ is interpreted as the average year-on-year change in food outcomes at m=-1, absorbing β_{-1} in the estimation. Hence, all other β coefficients carry the interpretation of average change in household food outcomes in that relative month compared to the same period exactly a year prior, relative to β_{-1}. While this study does not make explicit assumptions on the year-on-year trend in food outcomes prior to the event month indicated by the signs of β

coefficients for relative months $m < 0$, this study expects the trend in food outcomes after school closures ($m \geq 0$) to be:

a) significantly positive for dollar expenditure dependent variables due to higher expected household grocery spending to replace food away-from-home during the pandemic environment (and possible higher prices),
b) significantly positive for dependent variables measuring variety of purchases because, given the possible combination of supply-chain disruptions and household stockpiling behavior under emergency preparations, the sudden substantial rise in household shopping is expected to cause stockout in popular brands across stores and force households to purchase other varieties to replace their usual preferred option that is temporarily unavailable, and
c) mixed for dependent variables measuring healthfulness or composition of the food grocery basket in terms of brands, UPCs, or product categories, due to likely heterogeneity in household responses that correlates with household characteristics.

In an event-study plot, estimates of β coefficients from regressions of Equation 3-1 for each sample or subsample are plotted against relative months. These estimated coefficients capture average year-to-year shifts in household food choices by relative month. Without variation from an untreated population, counterfactual trends cannot be created using untreated sample through difference-in-differences. The argument for a causal link between the external shock – in the form of the early pandemic response environment – and disturbances in household food choice is dependent on the state-specific timing of the event month and the assumption that no other statewide event (unrelated to the pandemic) is correlated with the month of school closures during that year and the control year. All regressions are run using STATA 17.0.

Measures of Food Diversity and Healthfulness

Measure of Evenness

While extant studies employ various measures of diversity that may slightly vary in the precise grouping of foods, most measures include a similar component that has been applied by Berry (1972). The Berry-Index (BI)[12] is defined as:

$$BI = 1 - \sum {s_i}^2 \tag{3-2}$$

where s_i is represents the shares of category i and can take the value between 0 (least diverse) and 1 (most diverse). In this raw form, BI is a measure of evenness of composition and variety where 0 indicates the most uneven composition and BI approaches 1 as the number of categories approach infinity with equal shares. Instead of using quantity shares (Stewart & Harris, 2005; Thiele & Weiss, 2003), this study calculates expenditure shares. However, unlike Jekanowski and Binkley (2000) that calculates a whole market's product and brand diversity using annual market-level sales data (treated as expenditures), this study measures food diversity of monthly household-level grocery spending by calculating expenditure shares of 24 food categories to calculate BI for each household-month-year observation according to Equation 3-2. The food categories follow the definition by USDA's Center for Nutrition Policy and Promotion (CNPP) available in the Appendix C. Solely dependent on shares, BI remains unchanged if spending increases (or decreases) simultaneously by the same proportion in all categories. As BI values lie on a spectrum that ranges from 0 to 1, a positive change of 0.01 indicates a rightward shift (towards 1) by a magnitude of 1% of the length of the spectrum towards spending equality across food categories (at BI=1). On the other hand, a negative change of 0.01 indicates a leftward shift (towards 0) by a magnitude of 1% of the length of the spectrum away from spending equally across food categories. Assuming that the categories are defined such that highest benefit of diversity is attained when household grocery spending in evenly distributed across the categories, then a higher BI represents a more diverse and desirable household grocery combination. Therefore, a positive average change in BI suggests a desirable dietary shift towards better household health.

To look at evenness of spending within food groups, this study also calculates the within-food-group BI for each observation for each of the 6 major food groups. Since Volpe and Okrent

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[12] The index is also known as the Simpson index (Patil & Taillie, 1982). The sum of squared shares component is otherwise known as the Herfindahl index (Thiele & Weiss, 2003).

(2012) already treated the 24 CNPP food categories as food subgroups and grouped them into 6 major food groups, this study adopts the same grouping: grains (2 subgroups); vegetables (5 subgroups); fruits (2 subgroups); milk products (3 subgroups); meats and beans (6 subgroups); other foods (6 subgroups). Significant and positive changes in within-food-group BI for vegetables, fruits, or milk products suggest food patterns that improve household health outcomes, such as through lower risk of cancers (Büchner et al., 2010; Jeurnink et al., 2012; McCrory et al., 1999; Slattery et al., 1997). On the other hand, significant and positive changes in within-food-group BI for grains, other foods, or meats and beans suggest food pattern changes that worsen health implications by increasing risk of colon and esophageal cancer (McCrory et al., 1999; Slattery et al., 1997).

Measure of Healthfulness

To better understand whether American household food spending compositions are moving towards dietary guidelines, Volpe and Okrent (2012) created the USDA Score that measures adherence of a household's actual expenditure shares to recommended expenditure shares across all categories. By evaluating the food mix based on the USDA's Thrifty Food Plan that is designed to meet the requirements of the USDA's recommended healthy diet according to the Dietary Guidelines for Americans (USDA, 2010), the USDA Score measures the healthfulness of a household's food spending. Having further aggregated food categories from Quarterly Food at Home Price Database (QFAHPD) to CNPP categories and matching them with the weekly food costs calculated by Carlson et al. (2007)[13], Volpe and Okrent (2012) effectively calculates the USDA Score as a squared-error loss function that aggregates the deviations of actual expenditure shares from the recommended food expenditure shares across 24 food categories. Using the first version of the USDA Score, this study defines the USDA Score1 for each household *i* as :

$$USDAScore1_{icmy} = \left(\sum\nolimits_{c} \left(expshare_{icmy} - USDAexpshare_{ic}\right)^2\right)^{-1} \quad (3\text{-}3)$$

where *i* indexed individual households, *c* denotes the CNPP food categories, *m* indexes the relative month, and *y* indexes the relative year (pandemic year or control year). While variable *expshare* is the food expenditure share calculated from the actual household purchase data, *USDAexpshare* for each household *i* and category *c* is calculated based on a combination of household demographic variables following Volpe and Okrent's (2012) method and is constant across the time during the sample

[13] CNPP calculated weekly costs based on prices drawn from the 2001 and 2002 Nielsen Homescan panel dataset

period. As a measure of healthfulness, a higher USDA Score indicates a more healthful mix of food purchases that further implies the more desirable diet leading to better household health outcomes. Dependent on shares, the USDA Score remains unchanged if spending increases (or decreases) simultaneously by the same proportion in all categories. Therefore, improvements to the USDA Score indicate improvements to household food healthfulness and health outcomes. While USDA Scores can be used for ordinal comparison, due to its form, the magnitude of its increment is difficult to intuitively interpret for interval or ratio comparisons. To put it in perspective when explaining the results, therefore, this study also calculates the average level changes in USDA Score as percentage of the regression sample's mean USDA Score during the control year.

Based on Equation 3-3, this study calculates USDAScore1 for each household-month-year observation[14]. Since the product descriptions in the recent Nielsen data do not directly map to the CNPP food categories, the 816 product module codes of foods – from dry grocery, deli, fresh produce, frozen foods, packaged meat departments, as well as food magnet data – are first manually mapped to the 24 CNPP categories. Prior work by Todd et al. (2010) with the Nielsen data also required aggregating over 600 broad Nielsen food categories available during that period into 52 food groups for the QFAHPD. In this study, alcoholic drinks and pet foods are not included. While some grouping definitions may slightly vary across different studies, the results of this study is less likely to be sensitive to the groupings since the main coefficients of interest in the regression Equation 3-1 represent average changes in food healthfulness levels instead of the average levels themselves.

Food Brand and UPC Diversity

The combination of temporary supply chain disruption and shift towards higher at-home food spending during the early pandemic response environment may have allowed household experimentation and openness towards new brands or new variations within brands. Temporary store stockouts of certain brands and product variations may have forced households to purchase new brands or variations outside their normal, preferred brands. While not observing stock-outs directly, Levine and Seiler (2022) provide evidence that consumers temporarily switched brands of bottled water for two weeks during a hurricane. Therefore, this study calculates, for each observation, the number of unique brands and unique UPCs across all food categories purchased by the

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[14] When no purchase is recorded for a food category in an observation, it is calculated as zero during the calculation of USDAScore1. USDAScore2, as also provided by Volpe and Okrent (2012) to adjust for zero spending one or more food categories, is also calculated for each observation but the results are not significantly different (see Appendix for comparison of results).

household. Due to the substituting for food-away-from-home and products that might be temporarily out-of-stock at stores, the average counts of unique brands and UPCs for households are expected to increase during the early pandemic response period.

As households purchase more unique brands and UPCs, some brands or UPCs may end up fully replacing the households' regularly purchased brands or UPCs, at least temporarily. For an individual household, brands that previously dominate the monthly food spending may lose its share of the household food spending to competitor brands, leading to lower brand concentration. Hence, this study calculates the brand concentration for each household observation using Herfindahl-Hirschman Index (HHI), applied in industrial concentration by Stigler (1964), defined as:

$$HHI = \sum (s_b x 100)^2 \tag{3-4}$$

where s_b is food expenditure share of brand b. Also developed from firm concentration literature, HHI is closely related to the inverse of the BI as it its mathematical form is identical to the last component of Equation 3-2. The HHI is at the maximum of 10,000 points when a household's food purchases come from a single brand. Expecting brand switching by households, this study expects brand concentration of household food purchases to be lower due to the pandemic environment. A drop in brand concentration, therefore, indicates a higher openness of households to purchase and consume food from a more diverse assortment of food brands.

Diversity in Source of Food Purchases by Store

The adjustments households made in shopping for food groceries during the pandemic are also reflected through the changes in share of food spending of stores from which households purchased food. Changes in store concentration of food spending for each household reveals how the household changed its mix of food sources. An increase in store concentration, therefore, indicates that households spent proportionally more on food groceries at certain stores than in other stores, compared to a year prior. For each observation, this study calculates HHI using Equation 3-4 but according to store share – instead of brand share – of household food grocery expenditures. If households heeded government recommendations to limit their movements outside their homes and visited fewer stores for groceries, then this study expects to find increased concentration of store choice after school closure compared to a year prior.

New Brand Shares

To detect stockouts, this study looks at household purchases in several products that are commonly stockpiled during emergencies: bottled water, peanut butter, dry pasta, bread, and toilet paper. In addition, milk and chocolate candies are included as control products because they are not commonly associated with emergency stockpiling and do not often see stockouts due to stockpiling, therefore are not expected to be stocked out during the early stage of the pandemic environment. To detect stockout in each of the products, this study employs a method similar to Levine and Seiler (2020) which calculates the expenditure share of new brands within the households' purchases of that product. For each product and each household, a new brand is defined as a brand that has only appeared in that household's purchase for that product in one or less household-month observation during the control year. This allowance is expected to take into account the possibility of households purchasing a different brand for special occasions. Then, for each household-month observation during the pandemic year, this study calculates the expenditure shares of all the household-specific new brands within their respective products. Then, for each product and each household-month observation during the pandemic year, the shares of all new brands are aggregated. Finally, in each of the 13 relative months during the pandemic year and for each product, this study calculates the proportion of households whose product purchases are 100% contributed by new brands. This proportion is then plotted against relative months to visually detect possible stockout phenomenon around the school closure month.

Data

School Closure

Data on state-level school closure in the U.S. is obtained from the compilation by Ballotpedia (2020) and Education Week (EdWeek, 2022) which compiled information from local news, National Center for Education Statistics, school/district websites, and government websites during the pandemic. As shown in Table 3-1, the dates range across 3 calendar weeks across different states, with 41 states closing schools on the week of March 15, 2020 while 4 states closed schools earlier and 6 states later.

Table 3-1: Recommended school closure dates by state

Date	# states	States
March 2020		
12-Mar	1	MI
13-Mar	2	LA
14-Mar	1	NC
15-Mar	3	SC
16-Mar	22	AK, VA, UT, RI, PA, OR, CT, DC, DE, FL, OK, OH, IA, NV, IL, NM, NH, KY, ND, MT, MD, MS
17-Mar	4	AR, MA, SD, WA
18-Mar	7	WI, AL, VT, NY, NJ, MN, GA
19-Mar	1	MO
20-Mar	4	CA, IN, TN, TX
23-Mar	3	CO, KS, WY
24-Mar	1	ID
April 2020		
1-Apr	1	NE
2-Apr	1	ME
Grand Total	*51*	

Household Panel

The main household panel sample consists of households who are panelists in the Consumer Panel dataset for every year across the 2018-2020 sample period. Households who migrated to a different county during the period are dropped from the panel to minimize confounding factors due to relocation and adaptation to a new food and geographical environment. Meanwhile, changes of household residences within the same county are ignored as the food environment – such as the available choice set of food types and food retailers – within the same county are considered to be highly similar such that the impact of any within-county household relocation is negligible. Based on this sample, the summary statistics for food outcomes are provided in Table 3-2.

Table 3-2: Summary statistics of household sample food outcomes

Independent variable	Household-month-year observations of food diversity outcomes													
	Control year							*Pandemic year*						
				percentile							*percentile*			
	Mean	SD	Min	25th	50th	75th	Max	Mean	SD	Min	25th	50th	75th	Max
Food evenness														
Berry Index - Between-group														
24 CNPP categories	0.82	0.13	0.0	0.80	0.86	0.89	1.00	0.82	0.13	0.0	0.81	0.86	0.89	1.00
Berry Index - Within-group														
Grain	0.07	0.18	0.0	0.00	0.00	0.05	1.00	0.07	0.19	0.0	0.00	0.00	0.06	1.00
Vegetables	0.51	0.28	0.0	0.36	0.55	0.67	1.00	0.51	0.28	0.0	0.38	0.56	0.68	1.00
Fruits	0.30	0.32	0.0	0.00	0.25	0.47	1.00	0.30	0.33	0.0	0.00	0.26	0.47	1.00
Milk products	0.41	0.25	0.0	0.28	0.45	0.50	1.00	0.41	0.25	0.0	0.29	0.46	0.51	1.00
Meats & beans	0.52	0.27	0.0	0.41	0.57	0.68	1.00	0.53	0.27	0.0	0.41	0.58	0.69	1.00
Other foods	0.61	0.20	0.0	0.54	0.66	0.73	1.00	0.61	0.20	0.0	0.54	0.66	0.73	1.00
Food healthfulness														
USDAScore1	6.45	2.82	0.9	4.48	6.21	8.10	35.89	6.54	2.83	0.9	4.59	6.31	8.18	36.42
USDAScore2	8.59	4.27	1.0	5.70	8.09	10.78	61.20	8.68	4.23	1.0	5.85	8.19	10.83	64.67
Brand & UPC diversity														
Brand variety (count)	33	19	1	19	30	44	258	33	19	1	19	31	44	291
UPC variety (count)	55	33	1	31	50	73	470	56	34	1	31	51	75	578
Brand concentration (HHI)	1361	1228	0	656	987	1588	10000	1376	1265	0	657	991	1598	10000
Store diversity														
Store concentration (HHI)	5749	2352	0	3864	5162	7393	10000	5834	2386	0	3906	5217	7592	10000
New brands														
Proportion of new brands														
Bottled water								0.32	0.44	0.00	0.00	0.00	1.00	1.00
Peanut butter								0.44	0.49	0.00	0.00	0.00	1.00	1.00
Toilet paper								0.38	0.47	0.00	0.00	0.00	1.00	1.00
Dry pasta								0.45	0.47	0.00	0.00	0.19	1.00	1.00
Bread								0.30	0.41	0.00	0.00	0.00	0.66	1.00
Milk								0.14	0.30	0.00	0.00	0.00	0.00	1.00
Chocolate candy								0.65	0.41	0.00	0.24	0.96	1.00	1.00
N	540982							540982						

SD = Standard deviation

The remaining sample of households is predominantly White and skewed towards higher household income especially when compared to the U.S. Census 2020 population data. For the investigation into household heterogeneity of food purchase behavior, the main household panel is split into subsamples according to household characteristics posited to be the source of heterogeneity. These household characteristics are household race, household income, presence of school-age children, dual income source, and vehicle ownership. Household race is directly available from the dataset and is not expected to vary within a household across years. For all other characteristics, some adjustments and assumptions are made. The full sample of households and average characteristics are shown in Table 3-3.

Although a household's income may vary across the sample period, the income information is only available for one year. Since a panel household's income recorded in the dataset for a panel year always lags by 2 years, its actual household income in 2019 and 2020 are not yet available because the 2021 and 2022 dataset are not yet released. Therefore, for each unique household in the

Table 3-3: Household sample by characteristics

Census region	# households	%
Northeast	7,207	17.3
Midwest	10,692	25.7
South	15,652	37.6
West	8,028	19.3
Total	*41,579*	*100.0*

Children status	# households	%
No children under 18	34,413	82.8
Any young children	1,629	3.9
Mix of school-age children	3,070	7.4
Only middle-school children or older	2,467	5.9
Total	*41,579*	*100.0*

Household income	Income range	# households	%
Low	$29,999 and below	7,107	17.1
Low-Medium	$30,000-$59,999	12,587	30.3
Medium-High	$60,000-$99,999	12,561	30.2
High	$100,000 and above	9,324	22.4
Total		*41,579*	*100.0*

Household race	# households	%
Others	1,017	2.5
Hispanic	2,620	6.3
White	32,076	77.1
Black	4,403	10.6
Asian	1,463	3.5
Total	*41,579*	*100.0*

Household income status	# households	%
Single or no income	30,267	72.8
Dual income	11,312	27.2
Total	*41,579*	*100.0*

Household vehicle ownership	# households	%
No vehicle	27,311	65.7
Vehicle owner	14,268	34.3
Total	*41,579*	*100.0*

sample, this study uses its 2018 household income bracket obtained from the latest 2020 panel dataset – for all 3 years of observations, effectively treating household income as time invariant during the sample period. As annual household income in the dataset is categorized into 16 narrow income brackets, this study further collapses them into 4 wide income brackets: Low, Low-Medium, Medium-High, and High. Based on the 2018 Poverty Guidelines for the 48 Contiguous States and the District of Columbia in the Federal Register issued by the U.S. Department of Health and Human Services for use in determining eligibility for various programs, the poverty guideline for a household with 4 persons in the family was $25,100. As this income level lies within the $25,000-$29,999 narrow income bracket, this study considers households in this income bracket and lower as those under "Low" income category. Households in higher income brackets until the $50,000-

$59,999 narrow income bracket are considered as under "Low-Medium" income category. Since the U.S. median household income in 2018 is $63,179 and corresponds to the $60,000-$69,999 narrow income bracket, households in this median-containing income bracket and higher but lower than $100,000 are considered as under "Medium-High" income category. Finally, households with annual income higher than $100,000 are considered as under "High" income category. While the category cutoffs defined in this study do not vary by households, future research can apply varying category cutoffs based on household size and composition.

This study combines two demographic codes in the Panelist file to formulate the household race in its analyses. The Nielsen Homescan data categorizes households into 4 races: White/Caucasian, Black/African American, Asian, and Others. Meanwhile, a separate category indicates Hispanic origin (Yes/No). For the purposes of this study, the household race combines both demographic codes to define White households as non-Hispanic White/Caucasian, Hispanic households as Hispanic White/Caucasian, while the rest follows the Panelist file race categorization regardless of Hispanic origin. While also using Nielsen household panel data, Lacko et al. (2021) finds evidence of racial and ethnic disparities in nutritional quality of food purchases up until the pandemic.

Since the dataset includes a categorical variable indicating the presence and rough age mix of each household's children, this study considers a households to be with school-age children if it has at least one school-age child living together. A household with at least one child between 6 and 12 (primary school age) or between 13 and 17 (middle school age) is considered as a household with school-age children. However, without the specific number of children in each age group, this study is unable to control for changes in food consumption due to children growing older (and requiring more calories to support increasing basal metabolic rate). While the pandemic-induced closures of in-person school activities by all U.S. school districts clearly affected activities of households with school-aged children, this study limits itself to investigate how presence of any school-age children affected household purchases during the pandemic without decomposing the effects by children's age group. Assuming that the number of school-age in the household remains constant across the sample period, this study treats presence of school-age children as time invariant and considers only the data from the households' age and presence of children for 2020.

In this study, a household is assigned to be a dual income household if it has two household heads and both are employed with pay. Assuming that employment of household heads in each household does not vary across the sample period, this study also treats household income source as time invariant during the sample period and considers only the household head employment status according to the 2020 dataset. Amidst widespread suspension of business activities by brick-and-

mortar establishments, reduced employments of households may result in lower households disposable income for buying groceries, thereby putting households with single or no income in a more vulnerable position when adjusting their food budgets.

Vehicle ownership is not provided with the Nielsen dataset. Instead, this study determines a household to be owning a vehicle if, in at least two of the three calendar years (2018-2020), it purchased a product under the category "Automotive" under the department of "General Merchandise". As such, this study assumes that a household owning a vehicle is expected not to skip two calendar years without having to make any automotive-specific purchases – including consumables such as wiper fluid, engine oil, or vehicle lubricant – from all participating stores. With greater risk of infection in public transport, it is likely that households without access to personal vehicles severely limit their grocery shopping activities, resulting in adjustments to their grocery baskets.

Similar to calculations done in Volpe and Okrent (2012) to calculate USDA Score, the recommended share for each household and category is constructed by combining prior work by Carlson et al. (2007) and household demographic information from the Nielsen data. After matching a household's age of male household head, age of female household head, and age and presence of children with weekly dollar cost estimates by Carlson et al. (2007), the estimated recommended weekly cost of each food category for that household is computed based on the household size. Then, cost shares of the weekly recommended total cost for all 24 categories are calculated for that household. As in Volpe and Okrent (2012), since the CNPP age-gender combinations in Carlson et al. (2007) do not perfectly correspond with categorical variables of the Nielsen data, some approximate matching are done based on average values.

Results

Pooled Sample

Upon regressions using Equation 3-1, event-study plots in Figure 3-1 suggest improvements to household food diversity and healthfulness outcomes since the pandemic-induced school closures. Across seven months since school closures, the 24-category Berry Index of household food spending shifted an average of 1.2% closer to 100% evenness (BI=1). The USDA Score1 also increased by an average of 0.341 – around 5.3% of the mean during the control year - during the same period, compared to a year prior. Prior to m=0, plotted estimated coefficients from Berry Index and USDA

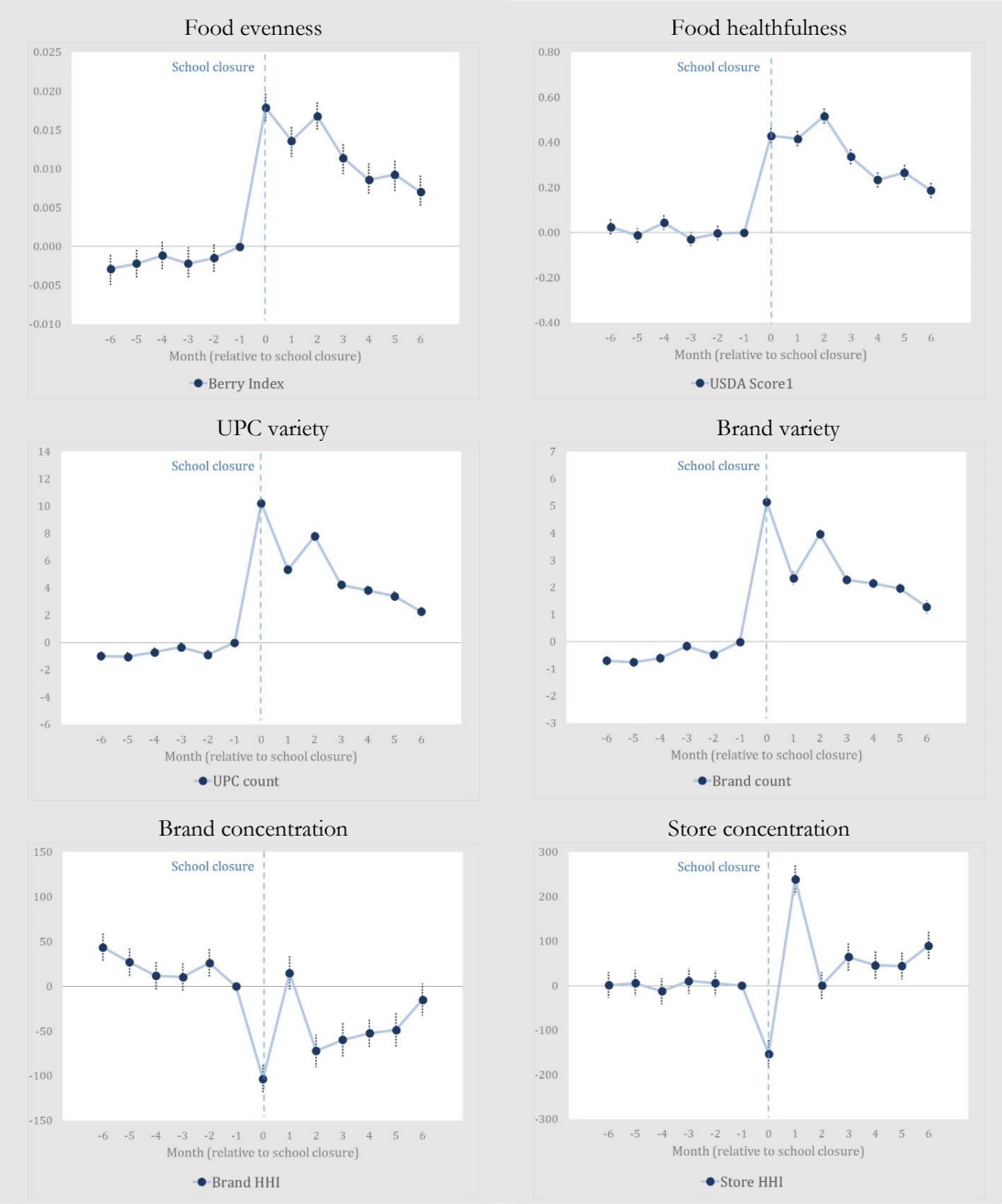

Figure 3-1: Event-study plots reflecting year-on-year level changes in household food diversity and other food outcomes during the early pandemic

Score1 regressions for most months are not statistically significant, supporting the assumption that, on average, households would likely have maintained pre-school closure food patterns had the pandemic not occur. As both Berry Index and USDA Score1 would have remained unchanged if all households increased their food spending from a year prior – or stockpiled – proportionally for every

category, these two results suggest that, besides spending on a more diverse mix of food groceries, the average household selected a more healthful combination of groceries since responding to the pandemic environment. This behavior is possibly explained by initial findings of Heng et al. (2021) that show households put more consideration into health and nutritional benefits when purchasing grocery items – such as orange juice – to boost immune systems during the early months of the pandemic. All tables containing the full set of regression output are provided in the Appendix C.

For product variety among foods, results from regressions on count of unique UPCs and brands purchased (see Figure 3-1) show sudden expansion of household food grocery baskets when schools closed, compared to the prior year. Right when school closed, the average household purchased 10 unique UPCs more than a year prior, then maintained an average of 4 unique UPCs higher than a year prior during the following months. Similarly, the average household purchased 5 brands more than before at m=0 and continued to buy an average of 2 brands higher than prior year in the following six months. This visually similar trends suggests that both are highly correlated and households did not only buy more of the same foods but instead tried other brands and varieties. While this trend may be explained by demand-driven factors such as household substitution of food away from home (Goddard, 2020; Lusk & McCluskey, 2020) and temporary shifts in grocery shopping format (Duffy et al., 2022; Ellison et al., 2021; Redman, 2020; Shen et al., 2022), purchases of more brands might also have been motivated by stockouts of certain product categories, especially amidst panic buying behavior or widespread stockpiling at the beginning of the pandemic (Creswell, 2020; Micalizzi et al., 2021).

Brand and store concentration regression results also show household adjustments to spending distribution across brands and stores. At m=0, average brand HHI plunged by more than six standard deviations (103.3 points) compared to prior year, rebounded shortly, and then dropped to an average of three standard deviations (58.1 points) lower than prior year for four months before finally returning within a standard deviation of prior year's brand concentration levels. Meanwhile, store HHI dropped by around five standard deviations (94.9 points) at month m=0 but spiked for a month – consistent with households drastically limiting trips to stores (Bergman et al., 2021) – before averaging at two standard deviations (61.2 points) higher than prior year for the last four months. Together, the two trends provide evidence that households shifted to shopping more at certain stores to reduce exposure (Baker et al., 2020), even if it meant temporarily deviating from the usual mix of brands for some months. Continued elevated store concentration even six months after schools closed is consistent with cautious behavior as households continued to concentrate grocery shopping at several stores to reduce risk of exposure.

A deeper dive into the 6 broad food groups reveal the main sources of increased household food diversity. Shown in Figure 3-2, higher food diversity entering the pandemic was most sustained in 4 groups: meats and beans, vegetables, other foods, and milk products.

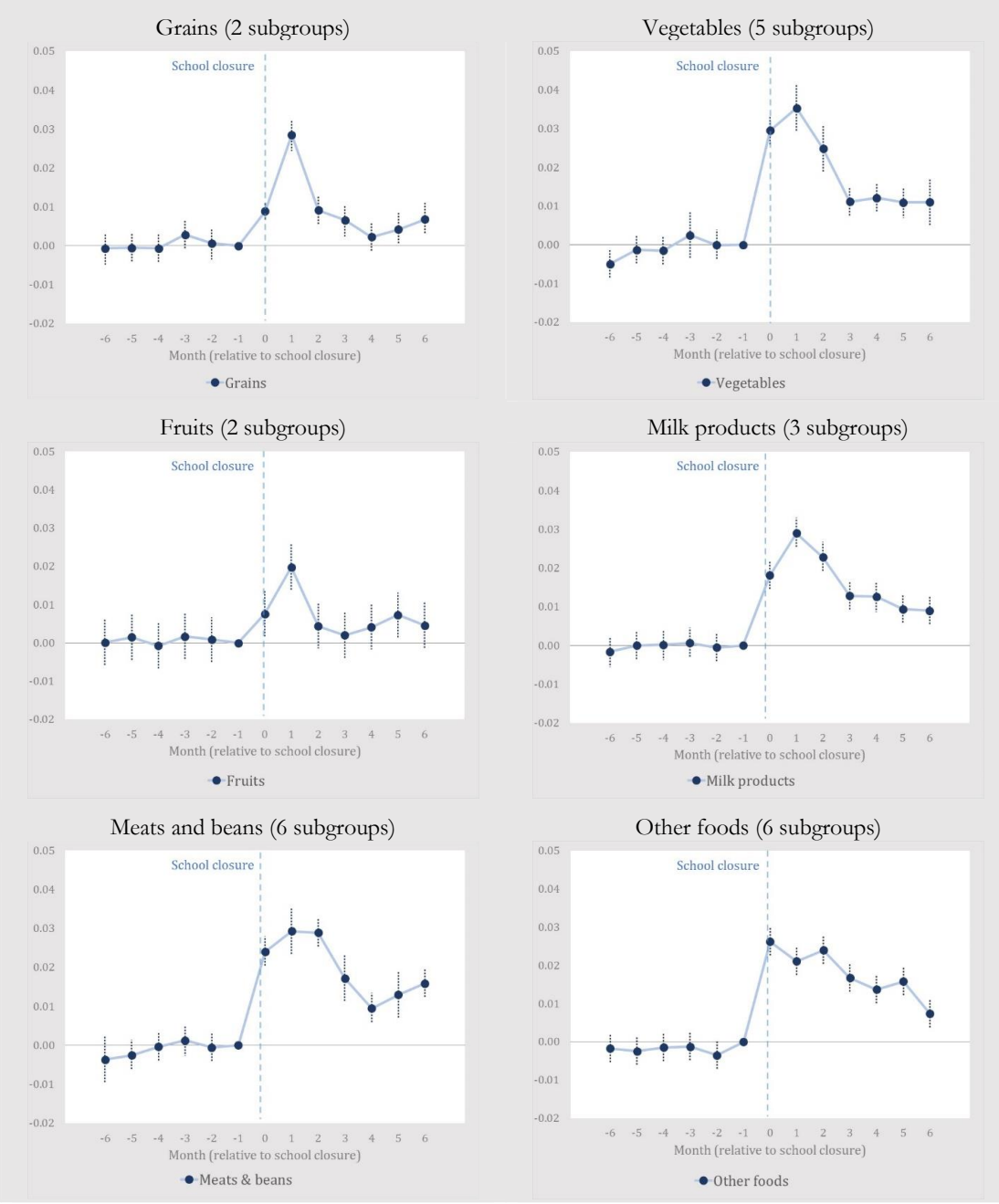

Figure 3-2: Event-study plots reflecting year-on-year level changes in evenness of spending (using Berry Index) of subgroups within broad food groups

Following school closure month, within-group diversity in meats and beans shifted the largest in magnitude, moving 1.9% closer to 100% evenness compared to prior year, while diversity in vegetables came in second at 1.8%. Within-group Berry Index during the early pandemic environment for other foods and milk products both increased by an average of 1.6% compared to prior year. Meanwhile, diversity in grains and fruits only increased by much smaller average magnitudes – 1.0% and 0.7%, respectively – and fewer statistically significant estimates for the same 6-month period after schools closed. While increases in diversity within vegetables and milk products signify improvements to household diets, increases in diversity within meats and beans and other foods (which include sweets and soft drinks) are points of caution due to their association with higher health risks.

Heterogeneity Using Split Samples

Consequently, regressing USDA Score for samples with varying household characteristics show heterogeneity in food healthfulness improvements resulting from household responses during the early pandemic environment. As shown in Figure 3-3, the major sources of heterogeneity are age and presence of children, race, and household income. Although the heterogeneity diminished by the fourth month of the early pandemic environment, food healthfulness improvements are statistically heterogeneous for 2 of the first 3 months since schools closed, during which households with only middle-school-aged children or older experienced improved food healthfulness that, on average, are 1.5 standard deviations above those with young children, as seen in Figure 3-3(b). With pre-school-closure trends not significantly different from the prior year's, food healthfulness trends split into two at $m=0$ as households with Medium-High or High income show improvements to food healthfulness that are two to three standard deviations higher than those experienced by households of Low or Low-Medium income, as seen in Figure 3-3(c). This evidence of heterogeneity across age and income supports findings of heterogeneity in pandemic-time spending by Baker et al. (2020).

Despite sharing trends before the school closure month that are not statistically different from prior year's, Asian and Black households on average improved their healthfulness of purchases by at least one standard deviation above their White counterparts for the entire seven months beginning at $m=0$, shown in Figure 3-3(d). The early pandemic food healthfulness for Hispanic households closely followed those of Black households for the first 3 months while year-on-year healthfulness improvements for households of other racial backgrounds diminished after 4 months. While these differences may arise due to average race-specific behavioral responses to emergency

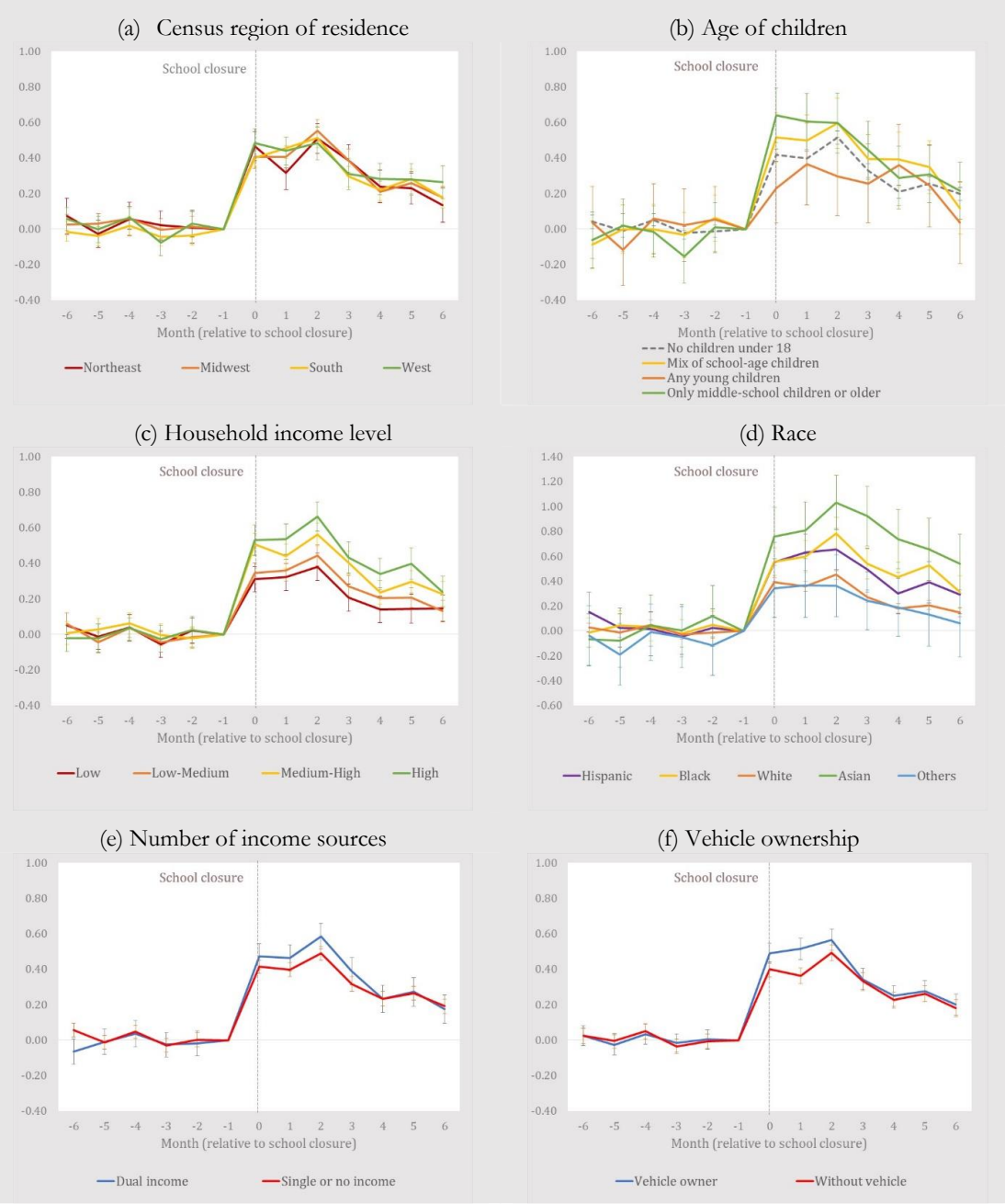

Figure 3-3: Event-study plots reflecting changes in household food healthfulness (using USDA Score1) during the early pandemic by various household characteristics

situations, they may also correlate with household food-away-from-home substitution that reflects race-specific food preferences when dining out had the pandemic not happen.

Other households characteristics, however, do not seem to correlate with heterogeneity in food healthfulness improvements during the early pandemic response environment. Despite suspected between-state variations in pandemic-induced community responses, Figure 3-3(a) shows

no evidence of statistically significant average differences between the main census regions. Figure 3-3(e) shows post-school-closure divergence of around one standard deviation for only 2 months between households of dual income sources and those with less. Meanwhile, Figure 3-3(f) provides evidence that, on average, households with vehicles experienced higher food healthfulness than other households for the first three months since schools closed. A possible explanation is that, aside from the initial transportation mode adjustment, households adapted accordingly such that mobility is no longer significant hindrance shopping. Alexander and Karger (2021) also finds that household mobility during the pandemic did not vary significantly across demographics.

Further investigation into interactions of household race and income reveals major sources of heterogeneity in food healthfulness during the early response environment (see Figure 3-4). Among Black, Asian, and Other race households, largest – and statistically significant – food healthfulness improvements are associated with high household income. The heterogeneity among Hispanic households only appears in the fourth and fifth months after school closure. Meanwhile, among White households, post-school-closure improvements in food healthfulness for high-income households are larger than low-income households by more than one standard deviation throughout the early pandemic environment, albeit very small in magnitude.

Having found evidence of heterogeneous responses to the early pandemic environment in food healthfulness across household race and presence of children in response, a deeper look into spending changes from specific CNPP categories reveals important food spending shifts that drive the results. Among the CNPP categories, six categories have USDA-recommended shares of higher than 8% of the household food spending for the representative household in Volpe and Okrent (2012): whole grains (10.09%), legumes (8.32%), other vegetables (8.66%), fruits (16.49%), low fat milk or yogurt (8.77%), and fish (11.92%). The combined share of 64.25% from these six categories indicate their substantial contribution to the household spending basket and the resulting household food healthfulness. It should be noted that, while the shares of a representative household are expected to roughly indicate the categories most likely to be responsible for the changes in household food healthfulness, the shares vary across households. While not presented in Figure 3-5, results for the other 18 categories are included in Appendix C.

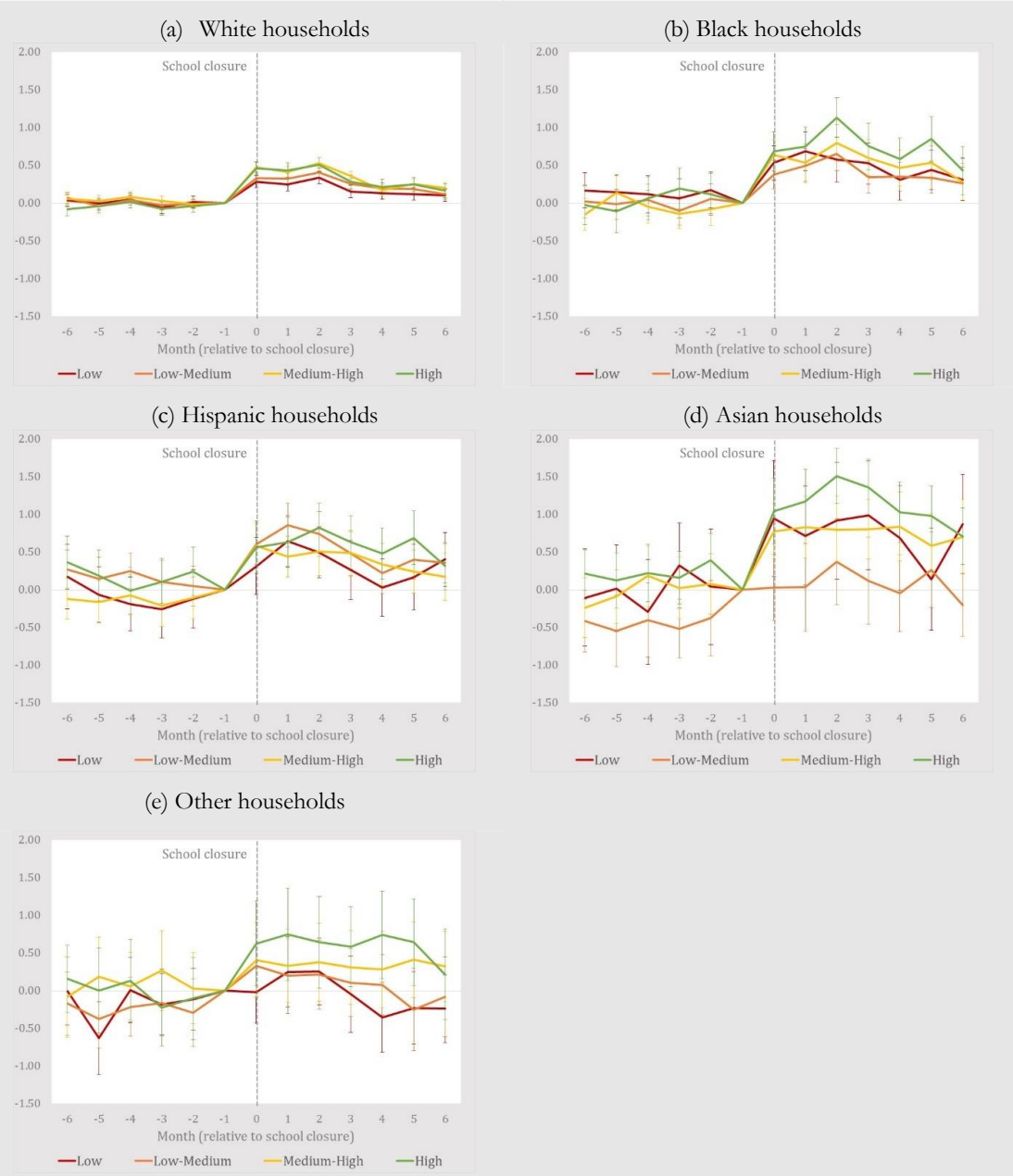

Figure 3-4: Event-study plots reflecting level changes in USDA Score1 across household race and income

Among households most directly impacted through school closure due to having school-age children, results shown in Figure 3-5 suggest heterogeneity in household food responses across race with regards to the early pandemic environment[15]. Black households spent more on fish (27.0%), whole grains (25.1%), other vegetables (20.9%), and fruits (19.7%) on average across seven months beginning at m=0, compared to a year prior, but maintained spending on legumes and low-fat dairy products. Asian households, meanwhile, spent an average of 27.5% % more than prior year on fruits and 27.4% more on other vegetables – while maintaining spending on the other categories – during the same period. Large spending increases among Hispanic households come from fruits (24.2%), other vegetables (20.8%), whole grains (20.2%), and low-fat dairy products (18.7%), but not from legumes or fish. Since the early pandemic environment began, White households spent an average of between 6-11% more than prior year for all categories except legumes: other vegetables (10.8%), fruits (9.7%), whole grains (7.8%), low-fat dairy products (7.6%), fish (6.6%). Households of other race, on the other hand, only adjusted their food basket by spending an average of 18.3% more on fruits without significantly changing spending on the other five categories.

[15] Event-study plots and regression results for household sample without school-age children across 24 categories are provided in the Appendix

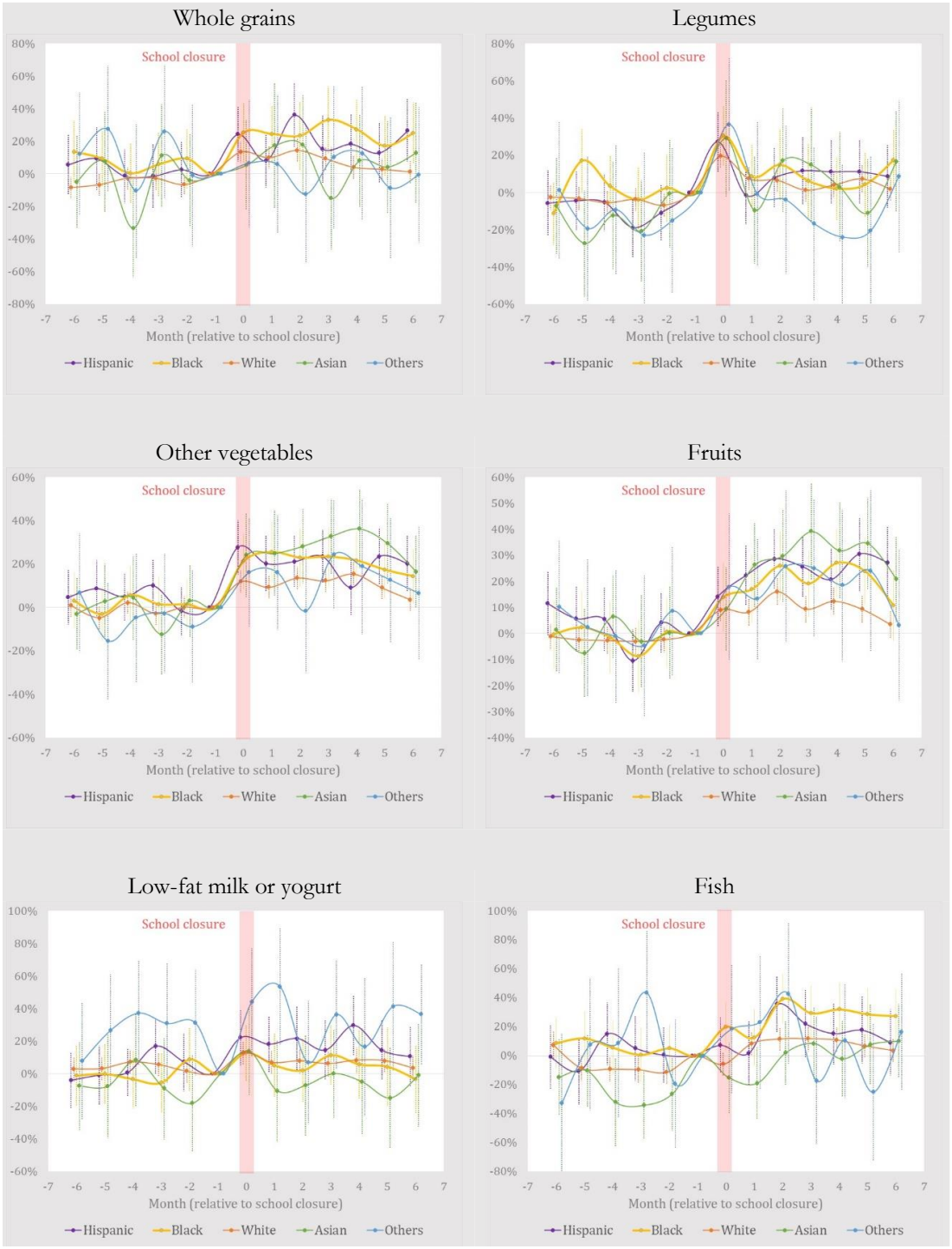

Figure 3-5: Event-study plots reflecting changes in households spending among households of various race with school-age children for categories with higher recommended shares

Product Stockouts Amidst Higher Food Healthfulness

The combination of events occurring during the early pandemic environment make it difficult to separate supply-side factors from demand-side factors that influence changes in household food diversity and healthfulness. Show in Figure 3-6, the timing of the largest leap in USDA Score1 improvement – at m=0 – coincides with complete brand switching by 5% or more households in the sample when purchasing bottled water, peanut butter, dry pasta, bread, and especially toilet paper. This sudden increase in brand switching across multiple products is highly characteristic of product stockouts due to simultaneous additional purchases by store customers for stockpiling – most often around emergency situations such as hurricanes (Levine & Seiler, 2022). The sudden increases in grocery purchases is supported by results of regressions on household dollar spending on various grocery categories (see Appendix C). The positive year-on-year changes in average household spending across broad grocery categories imply that the shock did not result from shrinkage of food supply at stores, assuming that prices did not rise substantially across all products.

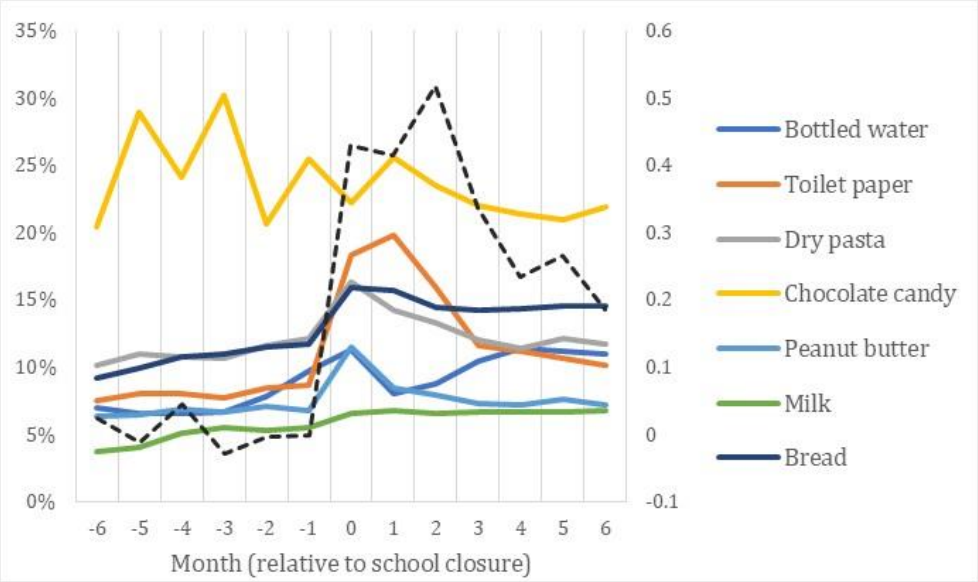

Figure 3-6: Proportion of household sample completely purchasing new brands (by product category) and year-on-year USDA Score1 changes during the early pandemic response environment

Interestingly, the peak of improvement in household food healthfulness at m=2 occurs past the peaks of complete brand switching incidence in food categories. Incidence of brand switching in the household sample returns to pre-school-closure levels for dry pasta and peanut butter but remains higher than before for bottled water, bread, and milk. Although small in magnitude, the

change in average food healthfulness remains positive. One possible explanation is that, despite restocked shelves after m=0, households continued to purchase more healthful food baskets. A second possibility is that, while these few essential product categories may have been restocked by m=1 or m=2, other product categories may be out of stock, hence forcing households to continue with their modified, more healthful food patterns. The third possibility is that, meeting stockouts in less healthful food categories, households forgo additional purchases from the food category altogether, resulting in the change in food category shares. Finally, it is possible that the inability of stores to restock their goods may have pushed prices for some products higher than before, relative to other product categories.

Comparison with Another Disaster Event: Hurricane Irma 2017

When repeating the investigation on food healthfulness during the pandemic using only households in Florida and combining the results with estimations of USDA Score during the period around the recent event – Hurricane Irma – which hit Florida in 2017, Figure 3-7 suggests that the pandemic significantly and positively altered household food baskets whereas the hurricane did not.

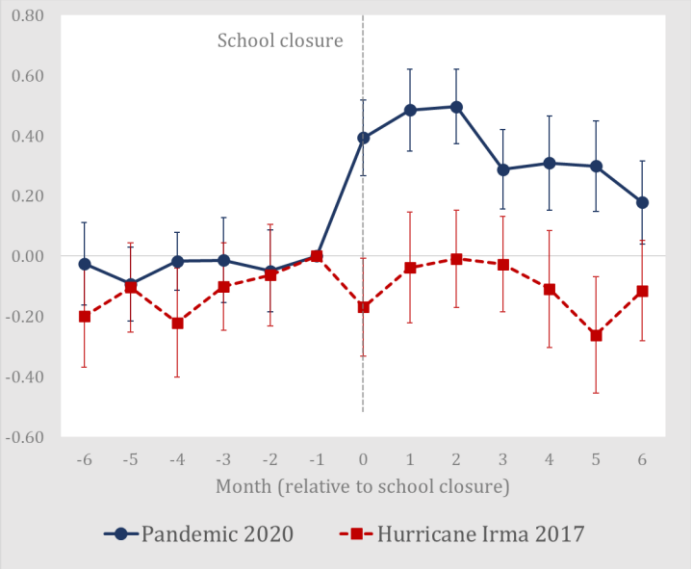

Figure 3-7: Event-study plots reflecting changes in household food healthfulness (using USDA Score1) for Florida households during the early pandemic and during Hurricane Irma 2017

Given that the state of Florida is familiar with hurricanes, it is expected that retailers annually prepare to anticipate stockpiling behavior of households right before hurricanes and even earlier during the first week of the annual hurricane season (Beatty et al., 2019) to prevent stockouts of

necessities. Under conditions of a major hurricane with relatively prepared retailers, the same household sample showed no statistically significant average improvement in food healthfulness at the month of the hurricane and, instead, experienced lower food healthfulness – by just over two standard deviations – compared to the same time a year prior. In contrast, the highly unanticipated early pandemic response environment significantly increased food healthfulness across the sample period following m=0.

Discussion and Limitations

While shedding light on household food diversity and healthfulness, measurements using shares do not reveal possible changes in the total quantity or volume of foods households actually purchased per month. Both the Berry Index and USDA Score can remain the same despite changes in food quantities across the food categories. Even if relative prices across the 24 food categories remain unchanged, a proportional drop in quantities purchased in all categories leaves values of both measures unchanged, thereby masking an actual reduction in food quantity purchased for the household. Indeed, the U.S. consumer price indices for various food categories recorded significant year-on-year increases since March 2020 (Hillen, 2021). Meanwhile, even if prices for all categories increase by varying proportions, quantities purchased by a household for all categories may fall accordingly such that the shares of spending across categories remain unchanged. For households already facing food insecurity, such a reduction in food – along with the associated calories from it – is a serious policy concern. In the sample, average price per unit paid by households for eggs and meats increased by more than 10% year-on-year between the period before and after school closure (see Appendix C). However, a study by Bin Zarah et al. (2020) suggests that, aside from increased consumption of sweets and snacks, household consumption in U.S. early in the pandemic did not shrink. While average changes may not reveal disparities that might have adversely affected the most vulnerable households, representation of those households in the Nielsen Homescan household panel used in this study is limited, with only 17.1% of the household sample in low income (see Appendix C). Furthermore, as with most measures using expenditures, variations in prices may bias results. In this study, year-on-year changes in relative price between the 24 categories can drive the results of food diversity and healthfulness. Future research, therefore, can first deflate each household's categorical spending before calculating its USDA Score.

Even if relative food prices are constant and trends in households' categorical food spending perfectly mimics trends in households' purchased food quantities, certain limitations remain. As most studies using scanner data, this study implicitly assumes that household food purchases translate

proportionally to actual quantity of household food intake that eventually influences the health of household members. With household heterogeneity in food wasting behavior that, on average, already accounts for nearly a third of foods bought (Yu & Jaenicke, 2020), higher diversity of purchases may not directly lead to higher diversity of household food intake of the same proportion, especially among households who tend to waste more than others. Despite that, the potential role of food waste in this study is likely to be lowered due to increase average food prices given the price-elastic demand for food waste (Landry & Smith, 2019). Since most food grocery items require food preparation efforts, food spending may not accurately reflect food consumed due to heterogeneity in households' knowledge, cooking skills, equipment, and time. However, given that variations in food preparation requirements among grocery products are – to a certain extent – reflected by their prices (i.e. foods more readily eaten tend to be more expensive), food grocery spending during the early pandemic environment may have partially captured household disparities in monetary cost of time.

While the early pandemic response environment influences households' health risks through changes in household dietary patterns, the analyses in this study do not explicitly measure the associated changes in welfare. Although increasing diversity of purchases, brand switching by households around the month of school closure were likely responses to stockouts that imply shrinkages of households' choice sets. While the loss of alternatives may in itself count as a welfare loss, the more direct welfare loss likely occurred when households had to purchase second-best – or worse – alternatives to their utility-optimizing food baskets when faced with empty shelves. Meanwhile, the reduced-form approach in this study does not model the complex interaction of events surrounding the initial phase of the pandemic that affected household activities and time use – as modeled by Scharadin et al. (2020) when modeling food waste during the pandemic. Access to more precise data on household employment, activities, and government or community assistance during the pandemic can allow further research to measure household welfare changes that control for variations in households' multi-faceted adjustments.

The application of food healthfulness measure in this study also presents its limitations. While the method in Volpe and Okrent (2012) remains relevant, this study also makes use of recommended weekly cost tables by Carlson et al. (2007) based upon optimization using the 2001-2002 Food Price Database and the 2005 Dietary Guidelines for Americans (USDA, 2005). While estimated weekly cost of food for each Food Plan is available monthly (USDA, 2022), the USDA Score relies on the breakdown of costs by 24 CNPP categories whose more recent version are not readily available. While the dollar prices do not matter as much as the relative prices between categories, more recent calculations are needed to take into account both changes in relative food prices and updates to the recommended dietary guidelines 15 years since. Given that nutritional

guidelines are designed based on individual's daily calorie requirements to maintain a healthy weight, variations in activity levels of household members – that influence total household daily calorie needs – are not being accounted when using the average weekly cost tables in Volpe and Okrent (2012). Moreover, to sync the CNPP food categories with the Nielsen data's product information when aggregating household categorical purchases, some approximate matching was done. However, effects due to inaccurate matching are not expected to substantially affect the results as this study primarily investigates within-household shifts of food diversity levels instead of the variation in levels themselves. Future research, meanwhile, can benefit from more accurate alignment of food categories across different datasets to allow consistent updating of estimated costs for various food categories. Consequently, updated breakdown of estimated "healthful" spending by category can provide a quick and simple reference for households with tight budgets when shopping for groceries.

Conclusion

The major disruption to normality in the early pandemic response environment exogenously shocked food patterns among U.S. households that had been relatively stable over decades. When forced to substitute away from food-away-from-home options amidst relative inelastic supply of retailer food products during the early pandemic response period, American households are found to improve their diversity of grocery purchases, on average, by spending more evenly across categories. While average spending that are more evenly spread within two major food groups – vegetables and dairy products – signify improvements to household health implications, more even spending within two other major food groups – other foods as well as meats and beans – indicates a cause for concern for health risks. Amidst a concerning trend towards eating out and its association with lower dietary quality and increasing health risks, households altered their food spending mix towards the recommended shares for a healthy diet.

The pandemic-triggered improvement in food healthfulness, however, is not homogeneous across household characteristics. Least affected by the temporary suspension of in-person school sessions, households with only young children saw the smallest average improvements in food healthfulness compared to a year prior. On average, households with higher income consistently show higher average year-on-year improvement in 6 out of the 7 months since the early pandemic response environment began. Despite statistically significant and positive changes in food healthfulness for across White, Black, Asian, and Hispanic households, Asian and Black households enjoyed improvements that, on average, are at least one standard deviation higher than their White

counterparts, with Hispanic households somewhere in between. Upon closer inspection, the magnitude of improvements are largest for Asian and Black households who are also medium-high or high income earners, but these between-income-group advantages diminish after six months. Meanwhile, this study does not find evidence of considerable or lasting heterogeneity across census regions, multiple income sources, or vehicle ownership.

Looking only at food categories that contribute the largest share of the recommended cost of a healthy diet, households across race did not spend proportionally more on the same categories at the onset of the early pandemic response environment. Black households spent at least 19.7% more on fish, whole grains, other vegetables, and fruits than the same relative time a year prior. Hispanic households, meanwhile, spent at least 18.7% more on fruits, vegetables, whole grains, and low-fat dairy products. For the same period, Asian households spent at least 27.4% more on both fruits and vegetables but remained the same for the other four categories. Households of Other race only spent more on fruits (by 18.3%) compared to prior year while White households spent between 6 to 11% more than prior year for all categories except legumes.

While the pandemic environment most likely affected household demand for groceries, supply-side factors may have played a role in providing the opportunity for diversity in household food purchases. Households may have been "forced" to diversify their foods due to widespread product stockouts at many stores – indicated by surge in brand switching incidence among sample households – when retailers were overwhelmed by customers suddenly buying more groceries at the same time. To add perspective, using a subsample of households from Florida, food healthfulness around the major Hurricane Irma in 2017 barely dipped during the hurricane month while food healthfulness rose beyond. During the pandemic, elevated incidence of brand switching, especially at the month of school closure, in combination with higher household spending, suggests that households continued to purchase groceries, albeit from new brands or categories.

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Researcher(s)' own analyses calculated (or derived) based in part on data from Nielsen Consumer LLC and marketing databases provided through the NielsenIQ Datasets at the Kilts Center for Marketing Data Center at The University of Chicago Booth School of Business.

The conclusions drawn from the NielsenIQ data are those of the researcher(s) and do not reflect the views of NielsenIQ. NielsenIQ is not responsible for, had no role in, and was not involved in analyzing and preparing the results reported herein.

Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the author(s) and do not necessarily reflect the views of the U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture, Open Philanthropy, or their affiliated organizations.

Appendix A

Chapter 1 Regression Outputs and Supplemental Material

Table A-1: Event-study regression output summary of bottled water volume and UPC count

	Dependent variable:	ln(Volume)			ln(UPC count)			
Relative week (t)	Independent variable	Ike 2008	Sandy 2012	Harvey 2017	Ike 2008	Sandy 2012	Harvey 2017	Remarks
-11	1.threat#1.hweek#1.huryear	0.176	0.241*	-0.0290	-0.00133	-0.0290*	-0.0143	
		(0.071)	(0.020)	(0.088)	(0.014)	(0.003)	(0.018)	
-10	1.threat#2.hweek#1.huryear	-0.0962	0.0149	0.0318	-0.0133	-0.0133	-0.000331	
		(0.036)	(0.022)	(0.071)	(0.009)	(0.006)	(0.008)	
-9	1.threat#3.hweek#1.huryear	0.147	-0.113	-0.0811	0.00724	-0.0187	-0.00424	
		(0.058)	(0.040)	(0.093)	(0.014)	(0.012)	(0.014)	
-8	1.threat#4.hweek#1.huryear	-0.117	0.235*	0.0373	-0.0161	0.00966	0.0380	
		(0.031)	(0.028)	(0.061)	(0.011)	(0.016)	(0.006)	
-7	1.threat#5.hweek#1.huryear	0.107	0.0155	0.0978	-0.0314	0.0567**	0.0281	
		(0.048)	(0.015)	(0.073)	(0.011)	(0.003)	(0.008)	
-6	1.threat#6.hweek#1.huryear	0.102	0.127*	-0.101	-0.0461	0.00926	-0.00120	
		(0.029)	(0.014)	(0.086)	(0.008)	(0.003)	(0.008)	
-5	1.threat#7.hweek#1.huryear	-0.424	0.0796*	0.0184	-0.0768*	0.00595	0.00890	
		(0.085)	(0.008)	(0.032)	(0.010)	(0.002)	(0.006)	
-4	1.threat#8.hweek#1.huryear	-0.127	0.0302	0.0166	-0.0331	-0.000691	-0.00832	
		(0.082)	(0.006)	(0.049)	(0.020)	(0.002)	(0.016)	
-3	1.threat#9.hweek#1.huryear	0.0243	0.0277	-0.0160	-0.0423*	-0.0245**	-0.000162	
		(0.054)	(0.008)	(0.052)	(0.005)	(0.001)	(0.004)	
-2	1.threat#10.hweek#1.huryear		(omitted)			(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.516	0.712**	0.362	0.0201	0.0750**	0.0195	EARLY week
		(0.127)	(0.040)	(0.287)	(0.014)	(0.005)	(0.058)	
0	1.threat#12.hweek#1.huryear	-0.119	0.457**	-0.159	-0.0945	0.0336*	-0.123	Hurricane
		(0.045)	(0.028)	(0.184)	(0.022)	(0.005)	(0.047)	LATE week
1	1.threat#13.hweek#1.huryear	-0.0962	-0.129*	-0.159	-0.0549	-0.0705**	-0.101	
		(0.059)	(0.019)	(0.091)	(0.017)	(0.005)	(0.021)	
2	1.threat#14.hweek#1.huryear	-0.190	-0.151*	-0.0961	-0.0621*	-0.0621**	-0.0539	
		(0.038)	(0.019)	(0.023)	(0.009)	(0.004)	(0.016)	
3	1.threat#15.hweek#1.huryear	-0.0551	-0.125	-0.0480	-0.0304	-0.0294	-0.0438*	
		(0.046)	(0.054)	(0.029)	(0.010)	(0.007)	(0.005)	
4	1.threat#16.hweek#1.huryear	0.0749	0.0198	-0.00685	-0.0428	-0.0335	-0.0350	
		(0.054)	(0.055)	(0.087)	(0.012)	(0.007)	(0.026)	
5	1.threat#17.hweek#1.huryear	-0.119	0.0487	-0.0450	-0.0368	-0.000245	-0.0467	
		(0.029)	(0.010)	(0.034)	(0.012)	(0.003)	(0.019)	
6	1.threat#18.hweek#1.huryear	-0.0403	0.129	0.0562	-0.0520	0.000730	-0.0433	
		(0.037)	(0.026)	(0.056)	(0.013)	(0.003)	(0.007)	
7	1.threat#19.hweek#1.huryear	-0.0816	0.0224	-0.0800	-0.0395	-0.0336	-0.0592	
		(0.031)	(0.023)	(0.104)	(0.009)	(0.005)	(0.019)	
8	1.threat#20.hweek#1.huryear	0.140	0.0141	-0.0514	-0.0803*	-0.0588**	-0.0494	
		(0.041)	(0.009)	(0.061)	(0.012)	(0.003)	(0.015)	
	1.threat#1.huryear	0.0676	-0.113	-0.0279	0.0325	0.00280	0.00841	
		(0.044)	(0.023)	(0.036)	(0.010)	(0.005)	(0.005)	
	1.huryear	0.0181	0.105	-0.0521	0.0357	0.0165	0.0297	
		(0.023)	(0.022)	(0.020)	(0.006)	(0.005)	(0.005)	
	Periodic fixed effects	July 4th, Thanksgiving week, End-of-year week						
	Event-specific fixed effects	Edouard and Heatwave 2007, Gustav 2008, Irene 2011						
	N	1038960	1091258	996774	1038960	1091258	996774	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county and week. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table A-2: Event-study regression output summary of peanut butter volume and unique UPC count

	Dependent variable:	ln(Volume)			ln(UPC count)			
Relative week (t)	Independent variable	Ike 2008	Sandy 2012	Harvey 2017	Ike 2008	Sandy 2012	Harvey 2017	Remarks
-11	1.threat#1.hweek#1.huryear	-0.110	0.154*	-0.0167	-0.0141	0.0349	-0.0378	
		(0.059)	(0.018)	(0.092)	(0.023)	(0.009)	(0.042)	
-10	1.threat#2.hweek#1.huryear	-0.0789	-0.0705	0.0440	0.0207	-0.0166	0.0337	
		(0.054)	(0.035)	(0.124)	(0.022)	(0.013)	(0.046)	
-9	1.threat#3.hweek#1.huryear	-0.0750	-0.273	0.212	0.0254	-0.102	0.0760	
		(0.053)	(0.096)	(0.076)	(0.023)	(0.024)	(0.025)	
-8	1.threat#4.hweek#1.huryear	-0.393	-0.0616	0.294	-0.100	-0.00505	0.0987	
		(0.070)	(0.053)	(0.078)	(0.024)	(0.013)	(0.022)	
-7	1.threat#5.hweek#1.huryear	-0.137	0.118*	0.0631	-0.00137	0.0584*	0.0262	
		(0.056)	(0.011)	(0.252)	(0.018)	(0.009)	(0.098)	
-6	1.threat#6.hweek#1.huryear	0.573*	0.281**	0.0700	0.219*	0.0923*	0.0445	
		(0.058)	(0.018)	(0.182)	(0.022)	(0.010)	(0.072)	
-5	1.threat#7.hweek#1.huryear	-0.486*	0.137	0.223	-0.128	0.0292	0.0820	
		(0.064)	(0.027)	(0.091)	(0.029)	(0.008)	(0.029)	
-4	1.threat#8.hweek#1.huryear	0.278	0.136	0.0903	0.190*	0.0503	0.0475	
		(0.073)	(0.028)	(0.159)	(0.026)	(0.013)	(0.064)	
-3	1.threat#9.hweek#1.huryear	0.0541	0.0891*	0.127	0.0319	0.0275	0.0670	
		(0.093)	(0.010)	(0.076)	(0.027)	(0.008)	(0.043)	
-2	1.threat#10.hweek#1.huryear		(omitted)			(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.364	0.391*	0.513	0.104	0.148*	0.271	EARLY week
		(0.104)	(0.043)	(0.275)	(0.038)	(0.015)	(0.134)	
0	1.threat#12.hweek#1.huryear	0.145	0.592**	0.318	0.0518	0.186**	0.154	Hurricane
		(0.092)	(0.032)	(0.256)	(0.026)	(0.015)	(0.128)	LATE week
1	1.threat#13.hweek#1.huryear	0.313	0.164*	0.325	0.115	0.0567*	0.140	
		(0.054)	(0.016)	(0.110)	(0.027)	(0.008)	(0.061)	
2	1.threat#14.hweek#1.huryear	-0.0266	0.00273	0.0705	-0.0408	-0.00811	0.0547	
		(0.048)	(0.039)	(0.207)	(0.025)	(0.016)	(0.069)	
3	1.threat#15.hweek#1.huryear	0.319	-0.216	0.169	0.0430	-0.0508	0.104	
		(0.052)	(0.132)	(0.171)	(0.026)	(0.040)	(0.064)	
4	1.threat#16.hweek#1.huryear	-0.212	0.208	0.196	-0.0815	0.0364	0.0952	
		(0.070)	(0.133)	(0.112)	(0.022)	(0.042)	(0.046)	
5	1.threat#17.hweek#1.huryear	-0.105	0.0289	0.269	-0.0898	0.0392*	0.112	
		(0.051)	(0.030)	(0.139)	(0.024)	(0.004)	(0.050)	
6	1.threat#18.hweek#1.huryear	-0.0272	-0.0867	0.143	-0.0544	0.00498	0.0934	
		(0.051)	(0.032)	(0.176)	(0.027)	(0.006)	(0.077)	
7	1.threat#19.hweek#1.huryear	-0.733*	-0.243	0.128	-0.229*	-0.0516	0.105	
		(0.067)	(0.053)	(0.158)	(0.023)	(0.011)	(0.073)	
8	1.threat#20.hweek#1.huryear	0.667*	-0.203*	0.0851	0.122	-0.0770**	0.0826	
		(0.061)	(0.019)	(0.062)	(0.022)	(0.003)	(0.032)	
	1.threat#1.huryear	-0.00162	-0.0233	-0.173	0.000781	0.0325	-0.0758	
		(0.031)	(0.044)	(0.074)	(0.017)	(0.017)	(0.035)	
	1.huryear	0.0926	-0.0202	-0.0327	0.134*	0.0370	-0.00867	
		(0.058)	(0.043)	(0.038)	(0.016)	(0.013)	(0.014)	
	Periodic fixed effects	July 4th, Thanksgiving week, End-of-year week						
	Event-specific fixed effects	Edouard and Heatwave 2007, Gustav 2008, Irene 2011						
	N	821312	908114	824540	821312	908114	824540	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county and week. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table A-3: Event-study regression output summary of canned beans volume and unique UPC count

	Dependent variable:	ln(Volume)			ln(UPC count)			
Relative week (t)	Independent variable	Ike 2008	Sandy 2012	Harvey 2017	Ike 2008	Sandy 2012	Harvey 2017	Remarks
-11	1.threat#1.hweek#1.huryear	-0.00673	-0.0847	0.104	-0.00542	0.0307*	0.0537	
		(0.029)	(0.020)	(0.028)	(0.017)	(0.004)	(0.013)	
-10	1.threat#2.hweek#1.huryear	0.00168	0.0434	0.0734	-0.0194	0.0264	0.0436	
		(0.029)	(0.030)	(0.022)	(0.015)	(0.012)	(0.021)	
-9	1.threat#3.hweek#1.huryear	-0.0142	-0.151	0.0741	-0.0162	-0.0790	0.0269	
		(0.031)	(0.105)	(0.019)	(0.016)	(0.039)	(0.022)	
-8	1.threat#4.hweek#1.huryear	0.183	0.115	0.124	0.0376	0.0216	0.0514	
		(0.038)	(0.066)	(0.024)	(0.015)	(0.023)	(0.025)	
-7	1.threat#5.hweek#1.huryear	-0.151	0.0291	0.0471	-0.0423	-0.00250	0.0103	
		(0.059)	(0.010)	(0.028)	(0.008)	(0.009)	(0.024)	
-6	1.threat#6.hweek#1.huryear	0.347	0.0872*	0.0831	-0.00823	0.0269	0.0330	
		(0.063)	(0.008)	(0.035)	(0.008)	(0.005)	(0.019)	
-5	1.threat#7.hweek#1.huryear	-0.0166	0.0261	0.130*	-0.0456	0.00887	0.0660*	
		(0.044)	(0.009)	(0.012)	(0.017)	(0.007)	(0.008)	
-4	1.threat#8.hweek#1.huryear	-0.0212	0.0694*	0.150	-0.0445	0.0180	0.0488	
		(0.025)	(0.008)	(0.026)	(0.016)	(0.005)	(0.012)	
-3	1.threat#9.hweek#1.huryear	-0.251	-0.0196	0.0905	-0.0703	-0.00105	0.0290	
		(0.112)	(0.013)	(0.022)	(0.026)	(0.005)	(0.013)	
-2	1.threat#10.hweek#1.huryear		(omitted)			(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.130	0.0921	0.360	-0.0229	0.0220	0.178	EARLY week
		(0.093)	(0.029)	(0.077)	(0.025)	(0.005)	(0.045)	
0	1.threat#12.hweek#1.huryear	0.0636	0.179	0.296	-0.0580	0.0263	0.147	Hurricane
		(0.072)	(0.030)	(0.069)	(0.016)	(0.017)	(0.029)	LATE week
1	1.threat#13.hweek#1.huryear	-0.105	-0.0324	0.283*	-0.0592	-0.0429	0.149*	
		(0.018)	(0.019)	(0.026)	(0.014)	(0.007)	(0.016)	
2	1.threat#14.hweek#1.huryear	-0.00158	0.0645	0.0913	-0.0410	-0.0640*	0.0277	
		(0.023)	(0.016)	(0.023)	(0.014)	(0.006)	(0.016)	
3	1.threat#15.hweek#1.huryear	0.0800	-0.495	0.0628	-0.0343	-0.142	0.0352	
		(0.045)	(0.333)	(0.015)	(0.017)	(0.088)	(0.011)	
4	1.threat#16.hweek#1.huryear	-0.0947	-0.421	0.154	-0.0567	-0.114	0.0777	
		(0.021)	(0.333)	(0.031)	(0.017)	(0.088)	(0.023)	
5	1.threat#17.hweek#1.huryear	-0.0910	0.0334	0.0858	-0.0684	-0.0254*	0.0497	
		(0.031)	(0.012)	(0.036)	(0.013)	(0.004)	(0.023)	
6	1.threat#18.hweek#1.huryear	-0.0798	-0.0298	0.128	-0.0506	-0.0805**	0.0936	
		(0.036)	(0.013)	(0.041)	(0.014)	(0.006)	(0.020)	
7	1.threat#19.hweek#1.huryear	-0.0827	0.0563	0.277	-0.0577	-0.0181	0.164	
		(0.047)	(0.049)	(0.055)	(0.013)	(0.016)	(0.028)	
8	1.threat#20.hweek#1.huryear	-0.526*	-0.241**	0.288	-0.0645	-0.147**	0.141	
		(0.063)	(0.018)	(0.092)	(0.014)	(0.005)	(0.038)	
	1.threat#1.huryear	0.00655	0.0204	-0.128	0.0361	-0.00377	-0.0623	
		(0.026)	(0.047)	(0.021)	(0.018)	(0.018)	(0.014)	
	1.huryear	0.0135	0.0515	-0.0133	0.0160	0.148*	-0.0192	
		(0.035)	(0.047)	(0.020)	(0.007)	(0.017)	(0.010)	
	Periodic fixed effects	July 4th, Thanksgiving week, End-of-year week						
	Event-specific fixed effects	Edouard and Heatwave 2007, Gustav 2008, Irene 2011						
	N	607010	717892	615504	607010	717892	615504	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county and week. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table A-4: Event-study regression output summary of frozen meats volume and unique UPC count

	Dependent variable:	ln(Volume)			ln(UPC count)			
Relative week (t)	Independent variable	Ike 2008	Sandy 2012	Harvey 2017	Ike 2008	Sandy 2012	Harvey 2017	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0620	0.00626	0.193	-0.0603	-0.0131	0.107	
		(0.063)	(0.043)	(0.100)	(0.013)	(0.023)	(0.024)	
-10	1.threat#2.hweek#1.huryear	0.0931	0.253	0.249	-0.0368	0.00209	0.105	
		(0.142)	(0.077)	(0.083)	(0.007)	(0.023)	(0.019)	
-9	1.threat#3.hweek#1.huryear	-0.0111	0.534*	0.171	-0.0812*	0.0667	0.119	
		(0.050)	(0.056)	(0.111)	(0.007)	(0.032)	(0.021)	
-8	1.threat#4.hweek#1.huryear	-0.0359	0.492*	0.313	-0.0686*	0.0910	0.129	
		(0.064)	(0.050)	(0.131)	(0.006)	(0.026)	(0.026)	
-7	1.threat#5.hweek#1.huryear	0.0161	-0.193	0.328	-0.0347	-0.0881	0.135	
		(0.082)	(0.041)	(0.087)	(0.020)	(0.017)	(0.024)	
-6	1.threat#6.hweek#1.huryear	-0.0110	0.111	0.237	-0.0342	0.00748	0.117	
		(0.074)	(0.028)	(0.063)	(0.011)	(0.005)	(0.024)	
-5	1.threat#7.hweek#1.huryear	-0.0385	0.254*	0.154	-0.0411	0.0423*	0.0651	
		(0.035)	(0.026)	(0.064)	(0.018)	(0.005)	(0.021)	
-4	1.threat#8.hweek#1.huryear	0.0519	0.420*	0.252	-0.0333	0.0897**	0.130*	
		(0.073)	(0.040)	(0.082)	(0.010)	(0.004)	(0.019)	
-3	1.threat#9.hweek#1.huryear	-0.182	0.108	0.266	-0.0341	0.0583*	0.109*	
		(0.098)	(0.036)	(0.062)	(0.008)	(0.009)	(0.013)	
-2	1.threat#10.hweek#1.huryear		(omitted)			(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.0271	0.323**	0.0969	-0.0245	0.0516*	0.0646	EARLY week
		(0.097)	(0.015)	(0.058)	(0.011)	(0.004)	(0.016)	
0	1.threat#12.hweek#1.huryear	-0.153	0.235*	0.161	-0.157	0.0943**	0.0561	Hurricane
		(0.051)	(0.035)	(0.071)	(0.033)	(0.005)	(0.021)	LATE week
1	1.threat#13.hweek#1.huryear	0.179	0.227*	0.00664	-0.0775	0.0857*	-0.00976	
		(0.110)	(0.018)	(0.081)	(0.017)	(0.007)	(0.043)	
2	1.threat#14.hweek#1.huryear	0.116	0.112	-0.104	-0.0587*	0.0617*	-0.0688	
		(0.108)	(0.034)	(0.069)	(0.008)	(0.010)	(0.032)	
3	1.threat#15.hweek#1.huryear	-0.153	0.184*	-0.0489	-0.0344	0.00613	-0.0313	
		(0.084)	(0.026)	(0.060)	(0.010)	(0.017)	(0.020)	
4	1.threat#16.hweek#1.huryear	-0.0669	0.122	-0.0806	-0.0277	0.0291	-0.00646	
		(0.084)	(0.031)	(0.068)	(0.009)	(0.019)	(0.025)	
5	1.threat#17.hweek#1.huryear	0.0749	0.362**	-0.0761	-0.0321	0.0911*	0.0115	
		(0.089)	(0.014)	(0.074)	(0.010)	(0.010)	(0.029)	
6	1.threat#18.hweek#1.huryear	0.228	-0.0186	-0.0669	-0.0244	0.0399	-0.0161	
		(0.075)	(0.049)	(0.075)	(0.016)	(0.012)	(0.024)	
7	1.threat#19.hweek#1.huryear	0.0110	0.196*	-0.196	-0.0378	0.0406	-0.0466	
		(0.062)	(0.030)	(0.078)	(0.015)	(0.016)	(0.014)	
8	1.threat#20.hweek#1.huryear	-0.0472	0.0355	-0.101	-0.0310	0.0112	-0.0435	
		(0.119)	(0.029)	(0.152)	(0.015)	(0.018)	(0.039)	
	1.threat#1.huryear	0.0594	-0.204	0.161	0.0171	-0.0454	0.0885	
		(0.069)	(0.036)	(0.067)	(0.010)	(0.013)	(0.024)	
	1.huryear	-0.0855	-0.163	0.119	-0.0271	-0.000423	0.0957*	
		(0.023)	(0.033)	(0.036)	(0.006)	(0.011)	(0.014)	
	Periodic fixed effects	July 4th, Thanksgiving week, End-of-year week						
	Event-specific fixed effects	Edouard and Heatwave 2007, Gustav 2008, Irene 2011						
	N	328006	379252	395210	328006	379252	395210	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county and week. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table A-5: Event-study regression output summary of dry pasta volume and unique UPC count

	Dependent variable:	ln(Volume)			ln(UPC count)			
Relative week (t)	Independent variable	Ike 2008	Sandy 2012	Harvey 2017	Ike 2008	Sandy 2012	Harvey 2017	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0168	0.0159	0.0972	-0.0197	0.0137	0.0260	
		(0.030)	(0.017)	(0.051)	(0.015)	(0.011)	(0.034)	
-10	1.threat#2.hweek#1.huryear	0.0243	0.0923	0.172	-0.00139	0.0455	0.0554	
		(0.019)	(0.024)	(0.067)	(0.016)	(0.012)	(0.043)	
-9	1.threat#3.hweek#1.huryear	0.0362	-0.106	0.140	0.0000415	-0.0578	0.0230	
		(0.023)	(0.086)	(0.056)	(0.013)	(0.037)	(0.027)	
-8	1.threat#4.hweek#1.huryear	0.0537	-0.000677	0.0891	0.0251	0.000140	0.00311	
		(0.011)	(0.041)	(0.025)	(0.013)	(0.020)	(0.016)	
-7	1.threat#5.hweek#1.huryear	-0.00364	-0.0671*	0.154	0.00867	-0.0235	0.0337	
		(0.019)	(0.010)	(0.030)	(0.017)	(0.006)	(0.017)	
-6	1.threat#6.hweek#1.huryear	0.0204	-0.0430	0.154	0.0102	-0.0132	0.0525	
		(0.017)	(0.010)	(0.026)	(0.012)	(0.006)	(0.016)	
-5	1.threat#7.hweek#1.huryear	-0.306	0.166*	0.177**	-0.108*	0.0221	0.0645*	
		(0.051)	(0.017)	(0.009)	(0.014)	(0.007)	(0.005)	
-4	1.threat#8.hweek#1.huryear	0.0470	0.0743	0.151*	0.0319	-0.00616	0.0546	
		(0.019)	(0.020)	(0.013)	(0.009)	(0.007)	(0.011)	
-3	1.threat#9.hweek#1.huryear	0.0501	-0.0113	0.105	0.00914	-0.0338	0.0378	
		(0.031)	(0.015)	(0.020)	(0.018)	(0.007)	(0.018)	
-2	1.threat#10.hweek#1.huryear		(omitted)			(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0795	0.129*	0.185	0.0248	0.0265	0.0861	EARLY week
		(0.034)	(0.015)	(0.052)	(0.016)	(0.010)	(0.024)	
0	1.threat#12.hweek#1.huryear	0.156	0.116	0.204	0.0295	0.0397	0.0619	Hurricane
		(0.036)	(0.038)	(0.076)	(0.017)	(0.018)	(0.043)	LATE week
1	1.threat#13.hweek#1.huryear	-0.00282	-0.0121	0.145	0.00769	-0.0406	0.0401	
		(0.023)	(0.012)	(0.028)	(0.018)	(0.008)	(0.023)	
2	1.threat#14.hweek#1.huryear	0.0927	-0.0302	0.0122	0.0646	-0.0286*	-0.0229	
		(0.029)	(0.007)	(0.053)	(0.016)	(0.003)	(0.015)	
3	1.threat#15.hweek#1.huryear	0.0807	-0.0564	0.0504	0.0302	-0.0339	0.00593	
		(0.014)	(0.054)	(0.033)	(0.013)	(0.020)	(0.014)	
4	1.threat#16.hweek#1.huryear	-0.00907	-0.0933	0.0409	-0.00597	-0.0463	0.00537	
		(0.017)	(0.054)	(0.038)	(0.013)	(0.020)	(0.014)	
5	1.threat#17.hweek#1.huryear	-0.0200	0.0407	0.0432	-0.00382	0.0106	-0.00766	
		(0.017)	(0.010)	(0.035)	(0.014)	(0.005)	(0.016)	
6	1.threat#18.hweek#1.huryear	0.00703	-0.124	0.0866	-0.00785	-0.0761*	0.0283	
		(0.019)	(0.023)	(0.020)	(0.013)	(0.008)	(0.008)	
7	1.threat#19.hweek#1.huryear	-0.0307	0.0819	0.0414	-0.0355	0.0267	0.0174	
		(0.024)	(0.018)	(0.046)	(0.013)	(0.009)	(0.011)	
8	1.threat#20.hweek#1.huryear	-0.0233	-0.0922	0.0181	-0.0243	-0.0432*	0.0127	
		(0.019)	(0.017)	(0.063)	(0.013)	(0.006)	(0.021)	
	1.threat#1.huryear	-0.00741	0.0944	-0.0776	0.00596	0.00656	-0.0210	
		(0.017)	(0.023)	(0.025)	(0.015)	(0.009)	(0.014)	
	1.huryear	0.0723	-0.175*	0.0418	0.0925*	0.0137	0.0473*	
		(0.017)	(0.016)	(0.015)	(0.008)	(0.007)	(0.006)	
	Periodic fixed effects	July 4th, Thanksgiving week, End-of-year week						
	Event-specific fixed effects	Edouard and Heatwave 2007, Gustav 2008, Irene 2011						
	N	743102	801128	715640	743102	801128	715640	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county and week. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table A-6: Event-study regression output summary of toilet paper volume and unique UPC count

	Dependent variable:	ln(Volume)			ln(UPC count)			
Relative week (t)	Independent variable	Ike 2008	Sandy 2012	Harvey 2017	Ike 2008	Sandy 2012	Harvey 2017	Remarks
-11	1.threat#1.hweek#1.huryear	0.102	0.0211	0.0628	-0.00890	-0.0313	0.0328	
		(0.017)	(0.010)	(0.053)	(0.008)	(0.008)	(0.015)	
-10	1.threat#2.hweek#1.huryear	0.122*	-0.0927*	0.125	-0.00228	-0.0303	0.0606	
		(0.018)	(0.011)	(0.042)	(0.007)	(0.006)	(0.017)	
-9	1.threat#3.hweek#1.huryear	0.0619	-0.145	0.128	-0.00386	-0.0136	0.0501	
		(0.022)	(0.034)	(0.048)	(0.008)	(0.007)	(0.021)	
-8	1.threat#4.hweek#1.huryear	0.0360	0.0173	0.0897	-0.00955	-0.00208	0.0419	
		(0.020)	(0.017)	(0.044)	(0.008)	(0.007)	(0.015)	
-7	1.threat#5.hweek#1.huryear	0.103	-0.0108	0.0898	-0.00304	-0.0178	0.0553	
		(0.022)	(0.010)	(0.041)	(0.014)	(0.006)	(0.014)	
-6	1.threat#6.hweek#1.huryear	0.0641	0.0426	0.0893	0.00273	-0.0268	0.0430	
		(0.025)	(0.014)	(0.042)	(0.013)	(0.006)	(0.015)	
-5	1.threat#7.hweek#1.huryear	0.110	-0.113*	0.0999	-0.00504	-0.00175	0.0396	
		(0.039)	(0.013)	(0.061)	(0.006)	(0.006)	(0.016)	
-4	1.threat#8.hweek#1.huryear	0.00605	-0.00995	0.0178	-0.0121	-0.0139	-0.00733	
		(0.019)	(0.008)	(0.063)	(0.009)	(0.005)	(0.031)	
-3	1.threat#9.hweek#1.huryear	0.0798	-0.125**	0.0496	-0.00000108	-0.0144*	0.00274	
		(0.023)	(0.008)	(0.028)	(0.006)	(0.002)	(0.007)	
-2	1.threat#10.hweek#1.huryear		(omitted)			(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.165	0.125*	0.141	0.0196	0.0112	0.0613	EARLY week
		(0.028)	(0.016)	(0.045)	(0.009)	(0.004)	(0.022)	
0	1.threat#12.hweek#1.huryear	0.0395	-0.0510	-0.00353	-0.0151	0.0476*	0.00125	Hurricane
		(0.034)	(0.011)	(0.051)	(0.011)	(0.004)	(0.019)	LATE week
1	1.threat#13.hweek#1.huryear	0.0366	-0.0608	0.108	0.0178	-0.0308*	0.0110	
		(0.028)	(0.010)	(0.136)	(0.008)	(0.004)	(0.017)	
2	1.threat#14.hweek#1.huryear	0.0697	-0.0494	0.0589	0.0161	-0.00796	0.0418	
		(0.028)	(0.012)	(0.070)	(0.008)	(0.003)	(0.020)	
3	1.threat#15.hweek#1.huryear	0.151*	0.0685	0.107	0.00117	0.0165	0.0579	
		(0.017)	(0.021)	(0.094)	(0.009)	(0.018)	(0.014)	
4	1.threat#16.hweek#1.huryear	0.0547	0.0716	0.0717	-0.0129	0.0199	0.0739	
		(0.016)	(0.019)	(0.072)	(0.008)	(0.018)	(0.020)	
5	1.threat#17.hweek#1.huryear	0.0777	0.0234	0.0195	0.0127	0.00894	0.0479	
		(0.018)	(0.008)	(0.069)	(0.009)	(0.002)	(0.018)	
6	1.threat#18.hweek#1.huryear	0.0208	-0.215**	0.0202	0.0248	-0.0183	0.0412	
		(0.027)	(0.012)	(0.046)	(0.009)	(0.003)	(0.013)	
7	1.threat#19.hweek#1.huryear	0.0682	-0.0635	0.106	0.0177	-0.00430	0.0448	
		(0.023)	(0.021)	(0.060)	(0.009)	(0.006)	(0.015)	
8	1.threat#20.hweek#1.huryear	0.102	0.00764	0.213	0.0364	-0.00281	0.0534	
		(0.019)	(0.013)	(0.059)	(0.008)	(0.003)	(0.013)	
	1.threat#1.huryear	-0.0269	0.0102	-0.0732	-0.00600	-0.00747	-0.0338	
		(0.021)	(0.014)	(0.039)	(0.008)	(0.006)	(0.014)	
	1.huryear	0.0850	-0.0329	-0.0533	-0.0338*	0.0194	0.0155	
		(0.015)	(0.013)	(0.013)	(0.004)	(0.006)	(0.006)	
	Periodic fixed effects	July 4th, Thanksgiving week, End-of-year week						
	Event-specific fixed effects	Edouard and Heatwave 2007, Gustav 2008, Irene 2011						
	N	1016190	1071302	974882	1016190	1071302	974882	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county and week. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table A-7: Event-study regression output summary of popular bottled water volume

	Dependent variable:	ln(Volume)			
Relative week (t)	Independent variable	Ike 2008	Sandy 2012	Harvey 2017	Remarks
-11	1.threat#1.hweek#1.huryear	-0.127	0.668*	-0.00796	
		(0.202)	(0.056)	(0.086)	
-10	1.threat#2.hweek#1.huryear	-0.142	0.349*	0.144	
		(0.175)	(0.038)	(0.084)	
-9	1.threat#3.hweek#1.huryear	-0.00770	-0.0533	0.124	
		(0.182)	(0.050)	(0.106)	
-8	1.threat#4.hweek#1.huryear	-0.0865	0.594*	0.169	
		(0.170)	(0.051)	(0.060)	
-7	1.threat#5.hweek#1.huryear	-0.249	0.115	0.186	
		(0.150)	(0.030)	(0.045)	
-6	1.threat#6.hweek#1.huryear	0.446	0.446*	0.0999	
		(0.159)	(0.046)	(0.050)	
-5	1.threat#7.hweek#1.huryear	-0.449	0.150	0.0382	
		(0.122)	(0.032)	(0.071)	
-4	1.threat#8.hweek#1.huryear	-0.224	0.421**	0.0000555	
		(0.179)	(0.024)	(0.075)	
-3	1.threat#9.hweek#1.huryear	-0.0177	0.435**	0.0696	
		(0.169)	(0.027)	(0.050)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.302	1.358**	0.506	EARLY week
		(0.194)	(0.041)	(0.347)	
0	1.threat#12.hweek#1.huryear	-0.330	0.617**	-0.415	Hurricane
		(0.201)	(0.041)	(0.253)	LATE week
1	1.threat#13.hweek#1.huryear	-0.161	0.174	-0.382	
		(0.203)	(0.038)	(0.191)	
2	1.threat#14.hweek#1.huryear	0.174	-0.0110	-0.377*	
		(0.185)	(0.039)	(0.040)	
3	1.threat#15.hweek#1.huryear	-0.146	0.369	-0.300*	
		(0.180)	(0.116)	(0.040)	
4	1.threat#16.hweek#1.huryear	-0.530	0.464	-0.0379	
		(0.228)	(0.116)	(0.180)	
5	1.threat#17.hweek#1.huryear	-0.144	0.462**	-0.198	
		(0.193)	(0.024)	(0.082)	
6	1.threat#18.hweek#1.huryear	-0.262	0.522*	-0.127	
		(0.183)	(0.050)	(0.052)	
7	1.threat#19.hweek#1.huryear	0.0529	0.382	-0.0783	
		(0.172)	(0.069)	(0.031)	
8	1.threat#20.hweek#1.huryear	0.625	0.324*	-0.198	
		(0.189)	(0.028)	(0.096)	
	1.threat#1.huryear	0.158	-0.400	0.0735	
		(0.175)	(0.065)	(0.043)	
	1.huryear	0.110	-0.109	-0.0759	
		(0.052)	(0.064)	(0.035)	
	Periodic fixed effects	July 4th, Thanksgiving week, End-of-year week			
	Event-specific fixed effects	Edouard and Heatwave 2007, Gustav 2008, Irene 2011			
	N	756210	789008	934106	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county and week. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table A-8: Event-study regression output summary of popular peanut butter volume

Relative week (t)	Dependent variable: Independent variable	ln(Volume) Ike 2008	Sandy 2012	Harvey 2017	Remarks
-11	1.threat#1.hweek#1.huryear	-0.188	0.133	0.154	
		(0.066)	(0.028)	(0.047)	
-10	1.threat#2.hweek#1.huryear	-0.149	-0.0469	0.0687	
		(0.073)	(0.032)	(0.179)	
-9	1.threat#3.hweek#1.huryear	-0.182	-0.0166	0.230	
		(0.070)	(0.066)	(0.137)	
-8	1.threat#4.hweek#1.huryear	-0.209	0.270*	0.361	
		(0.077)	(0.035)	(0.109)	
-7	1.threat#5.hweek#1.huryear	-0.198	0.155	0.105	
		(0.088)	(0.033)	(0.251)	
-6	1.threat#6.hweek#1.huryear	0.815*	0.373*	0.123	
		(0.097)	(0.035)	(0.184)	
-5	1.threat#7.hweek#1.huryear	-0.191	0.280*	0.373	
		(0.069)	(0.028)	(0.167)	
-4	1.threat#8.hweek#1.huryear	-0.0432	0.332*	0.162	
		(0.056)	(0.035)	(0.217)	
-3	1.threat#9.hweek#1.huryear	0.0445	0.0564	0.0764	
		(0.080)	(0.035)	(0.054)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.951*	0.234	0.575	EARLY week
		(0.096)	(0.056)	(0.237)	
0	1.threat#12.hweek#1.huryear	0.162	0.678**	0.361	Hurricane
		(0.098)	(0.034)	(0.203)	LATE week
1	1.threat#13.hweek#1.huryear	-0.0618	0.279*	0.375	
		(0.066)	(0.022)	(0.092)	
2	1.threat#14.hweek#1.huryear	-0.0714	0.219*	0.0775	
		(0.063)	(0.034)	(0.249)	
3	1.threat#15.hweek#1.huryear	0.516*	-0.166	0.101	
		(0.080)	(0.218)	(0.188)	
4	1.threat#16.hweek#1.huryear	-0.117	0.334	0.273	
		(0.066)	(0.219)	(0.060)	
5	1.threat#17.hweek#1.huryear	-0.0847	0.128	0.408	
		(0.066)	(0.031)	(0.133)	
6	1.threat#18.hweek#1.huryear	-0.0670	0.111	0.156	
		(0.069)	(0.042)	(0.198)	
7	1.threat#19.hweek#1.huryear	-1.129*	-0.157	0.130	
		(0.128)	(0.063)	(0.167)	
8	1.threat#20.hweek#1.huryear	1.047*	-0.126	0.156	
		(0.098)	(0.041)	(0.053)	
	1.threat#1.huryear	-0.0865	-0.167	-0.201	
		(0.045)	(0.050)	(0.069)	
	1.huryear	0.0560	0.0949	-0.0255	
		(0.077)	(0.049)	(0.047)	
	Periodic fixed effects	July 4th, Thanksgiving week, End-of-year week			
	Event-specific fixed effects	Edouard and Heatwave 2007, Gustav 2008, Irene 2011			
	N	512046	702864	686322	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county and week. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table A-9: 2SLS regression output summary of bottled water

Week of interest	LATE		POST1		POST2		POST3		POST4	
	2nd stage	1st stage	2nd stage	1st stage	2nd stage	1st stage	2nd stage	1st stage	2nd stage	1st stage
Dependent variable	*product_avail_late*	*stock_prop_early*	*product_avail_post1*	*stock_prop_early*	*product_avail_post2*	*stock_prop_early*	*product_avail_post3*	*stock_prop_early*	*product_avail_post4*	*stock_prop_early*
Variable										
Endogeneous										
stock_prop_early	-0.0757***		-0.0514***		-0.0189*		0.0046		-0.0026	
	(0.0286)		(0.0148)		(0.0111)		(0.0120)		(0.0106)	
Instruments										
vehicles		3.3001**		3.3843**		3.2180*		3.1050*		3.2046*
		(1.6722)		(1.6736)		(1.6731)		(1.6297)		(1.6454)
thgstockp		0.5080		0.3313		0.3560		0.4567		0.3063
		(0.9002)		(0.9166)		(0.9168)		(0.9010)		(0.9330)
medincome		0.0948***		0.0952***		0.0956***		0.0969***		0.0973***
		(0.0182)		(0.0185)		(0.0187)		(0.0186)		(0.0187)
intra_ntw	0.0732***	0.3005**	0.0304***	0.3078**	0.0346***	0.3093**	0.0305***	0.3130**	0.0246***	0.3337***
	(0.0146)	(0.1310)	(0.0071)	(0.1341)	(0.0058)	(0.1325)	(0.0077)	(0.1245)	(0.0063)	(0.1234)
prod_var_upc	-0.1597	-3.0704***	-0.0111	-2.9005***	0.1492*	-2.9473***	0.2475***	-2.8228***	0.1054	-3.5023***
	(0.1456)	(1.1527)	(0.0882)	(1.0923)	(0.0820)	(1.0915)	(0.0866)	(1.0205)	(0.0882)	(0.9817)
hur_exp_state	-0.0054**	0.0605***	0.0023	0.0591***	-0.0003	0.0604***	0.0015	0.0628***	0.0014	0.0606***
	(0.0023)	(0.0164)	(0.0018)	(0.0164)	(0.0014)	(0.0165)	(0.0014)	(0.0167)	(0.0013)	(0.0170)
vol_county	-0.1935	-3.4007***	0.0417	-3.4852***	-0.0551	-3.3770***	-0.1452**	-3.4265***	0.0524	-3.4615***
	(0.1468)	(1.2043)	(0.1019)	(1.2031)	(0.0656)	(1.2105)	(0.0661)	(1.1872)	(0.0591)	(1.1982)
vol_state	-0.7816	11.7104***	1.3060***	11.3587***	0.7461**	11.6219***	0.3565	11.9581***	-0.3608	12.3161***
	(0.4914)	(2.9801)	(0.3688)	(2.9446)	(0.3327)	(2.9336)	(0.3267)	(2.9008)	(0.2442)	(2.9527)
hhi_county	0.0376**	0.3224**	0.0101	0.3453**	-0.0024	0.3350**	0.0123	0.3215**	0.0063	0.2946**
	(0.0178)	(0.1322)	(0.0165)	(0.1353)	(0.0134)	(0.1363)	(0.0140)	(0.1369)	(0.0135)	(0.1389)
hhi_state	-0.7682	21.0581***	0.6606	20.3658***	0.2263	20.2965***	-0.5102	20.2702***	-0.3209	19.7730***
	(0.6377)	(6.4197)	(0.5186)	(6.3882)	(0.5304)	(6.5587)	(0.5064)	(6.5876)	(0.4665)	(6.7540)
pop_den_county	-0.0705	-2.3951***	-0.0427	-2.4161***	-0.0125	-2.4331***	0.0112	-2.4310***	0.0148	-2.3763***
	(0.0587)	(0.2296)	(0.0325)	(0.2268)	(0.0329)	(0.2340)	(0.0288)	(0.2353)	(0.0230)	(0.2319)
hur_track_wind	0.0006	0.0308***	0.0003	0.0313***	-0.0000	0.0317***	-0.0007	0.0318***	-0.0003	0.0323***
	(0.0011)	(0.0022)	(0.0006)	(0.0023)	(0.0005)	(0.0023)	(0.0005)	(0.0023)	(0.0005)	(0.0023)
chain_foodgroc	-0.0798	-1.4237***	-0.0909***	-1.2621***	-0.0985***	-1.2777***	0.0094	-1.2670***	0.0199	-0.9208***
	(0.0540)	(0.2271)	(0.0286)	(0.2168)	(0.0234)	(0.2153)	(0.0276)	(0.2060)	(0.0263)	(0.2046)
chain_mass	-0.0085	0.2346	-0.1937***	0.2345	-0.0629	0.1674	-0.0763	0.2528	0.0768	0.4404
	(0.0314)	(0.2712)	(0.0520)	(0.2736)	(0.0731)	(0.2762)	(0.0503)	(0.2682)	(0.0946)	(0.2936)
chain_drug	-0.1034***	-0.1204	-0.1004***	-0.1106	-0.1674***	-0.1438	-0.0890***	-0.1465	-0.0480	0.1703
	(0.0190)	(0.1437)	(0.0150)	(0.1387)	(0.0123)	(0.1467)	(0.0246)	(0.1657)	(0.0367)	(0.1594)
2012bn.hyear	0.0445*	0.6070***	-0.0172	0.6741***	-0.0052	0.6774***	-0.0241*	0.6314***	0.0272**	0.6607***
	(0.0267)	(0.1079)	(0.0157)	(0.1037)	(0.0139)	(0.1031)	(0.0134)	(0.1037)	(0.0119)	(0.1007)
2017.hyear	0.0136	0.5660***	-0.0179	0.5800***	0.0191	0.5805***	-0.0108	0.5330***	0.0562***	0.6393***
	(0.0275)	(0.1275)	(0.0190)	(0.1275)	(0.0162)	(0.1289)	(0.0176)	(0.1292)	(0.0155)	(0.1302)
excesslate	0.0810***	0.0877**								
	(0.0101)	(0.0382)								
excesspost1			0.1774***	0.0616						
			(0.0227)	(0.0672)						
excesspost2					0.1607***	0.1943**				
					(0.0231)	(0.0801)				
excesspost3							0.1597***	0.3554***		
							(0.0183)	(0.0816)		
excesspost4									0.1415***	0.4861***
									(0.0131)	(0.0601)
Observations	6,692	6,692	6,692	6,692	6,692	6,692	6,692	6,692	6,692	6,692
R-squared	0.138		0.140		0.125		0.097		0.100	
Kleibergen-Paap rk LM stat	18.37		18.13		17.93		18.37		18.58	
Chi-sq(5) P-val	0.000369		0.000414		0.000454		0.000369		0.000333	
Kleibergen-Paap rk Wald F stat	9.197		8.961		8.926		9.356		9.142	
Hansen's J stat	1.163		5.582		1.890		8.703		1.922	
Chi-sq(4) p-value	0.559		0.0614		0.389		0.0129		0.383	
N		6692		6692		6692		6692		6692
Cluster		578		578		578		578		578

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A-10: 2SLS regression output summary of peanut butter

Week of interest	LATE		POST1		POST2		POST3		POST4	
	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A
Dependent variable	*product_avail_late*	*stock_prop_early*	*product_avail_post1*	*stock_prop_early*	*product_avail_post2*	*stock_prop_early*	*product_avail_post3*	*stock_prop_early*	*product_avail_post4*	*stock_prop_early*
Variable										
Endogeneous										
stock_prop_early	-0.0132		0.0548		-0.0398		-0.0076		-0.0930*	
	(0.0499)		(0.0405)		(0.0376)		(0.0330)		(0.0561)	
Instruments										
vehicles		4.5845**		4.4270**		4.9066**		5.0919**		5.1300**
		(2.0702)		(2.1093)		(2.2477)		(2.2148)		(2.0965)
thgstockp		7.3494***		7.1202***		6.5451***		6.8071***		6.7142***
		(1.6762)		(1.6212)		(1.6253)		(1.6317)		(1.6291)
medincome		0.0682**		0.0730**		0.0767**		0.0763**		0.0773***
		(0.0302)		(0.0308)		(0.0299)		(0.0302)		(0.0299)
intra_ntw	0.0525**	0.2889***	-0.0515	0.3284***	0.0182	0.2987***	0.0074	0.2760***	0.0135	0.2911***
	(0.0264)	(0.0964)	(0.0316)	(0.0927)	(0.0235)	(0.0945)	(0.0186)	(0.0959)	(0.0371)	(0.0921)
prod_var_upc	-0.5500	0.7540	0.2543	-0.5249	-0.6838**	-0.0748	-0.0918	-0.4106	0.3562	-0.5643
	(0.5444)	(1.4372)	(0.3375)	(1.6357)	(0.2779)	(1.5507)	(0.2892)	(1.5629)	(0.2826)	(1.5932)
hur_exp_state	0.0037	0.0671***	-0.0056	0.0741***	0.0048	0.0667**	-0.0034	0.0785***	0.0060	0.0648**
	(0.0052)	(0.0258)	(0.0043)	(0.0267)	(0.0041)	(0.0261)	(0.0043)	(0.0264)	(0.0051)	(0.0260)
vol_county	-13.5105	-118.1351	23.8091***	-114.3906	21.7129**	-132.3019	27.8660***	-126.6374	30.6023***	-148.9156*
	(15.4049)	(75.7165)	(7.3661)	(82.9667)	(10.8897)	(84.3804)	(7.0791)	(84.0577)	(11.7906)	(83.0653)
vol_state	-57.0865*	-32.4605	-2.6943	-111.2496	47.0901	-56.8980	36.1629*	-116.4316	27.0257	-56.5681
	(29.7448)	(110.5245)	(25.6484)	(113.2245)	(36.5195)	(109.1453)	(21.8517)	(116.0151)	(31.8748)	(106.9151)
hhi_county	0.0274	0.1904	-0.0245	0.1951	0.0155	0.1981	0.0207	0.1907	0.0531	0.1815
	(0.0333)	(0.1469)	(0.0320)	(0.1519)	(0.0287)	(0.1512)	(0.0272)	(0.1516)	(0.0351)	(0.1498)
hhi_state	-1.2737	-8.2540	0.7902	-9.1496	-0.9202	-7.6019	-0.1705	-8.0925	-1.7394	-7.3012
	(1.1166)	(5.9501)	(0.8854)	(5.8274)	(0.8398)	(5.7473)	(0.9190)	(5.7561)	(1.1026)	(5.7317)
pop_den_county	-0.4647***	-2.1470***	-0.0504	-2.2626***	-0.3354**	-2.4542***	-0.0036	-2.0834***	-0.3832**	-2.2045***
	(0.1374)	(0.3815)	(0.0909)	(0.3826)	(0.1523)	(0.4247)	(0.0833)	(0.3657)	(0.1597)	(0.3549)
hur_track_wind	-0.0000	0.0309***	-0.0027*	0.0338***	-0.0001	0.0333***	-0.0000	0.0338***	0.0025	0.0339***
	(0.0018)	(0.0041)	(0.0015)	(0.0038)	(0.0014)	(0.0038)	(0.0012)	(0.0038)	(0.0022)	(0.0038)
chain_foodgroc	-0.6700***	-1.1478***	-0.4491***	-1.1041***	0.7087***	-1.1681***	-0.4794***	-1.1908***	-0.3603***	-0.9241***
	(0.0719)	(0.1509)	(0.0503)	(0.1521)	(0.0733)	(0.1530)	(0.0505)	(0.1494)	(0.0583)	(0.1542)
chain_mass	-0.6192***	-0.2334	-0.6277***	-0.2360	0.5207**	-0.4449	-0.5688***	-0.5327***	0.0825	-0.1131
	(0.1418)	(0.2632)	(0.1102)	(0.2594)	(0.2234)	(0.2965)	(0.1653)	(0.2047)	(0.3727)	(0.2446)
chain_drug	-0.3487***	-0.1996	-0.2509*	-0.2321	-2.0687***	-2.2996***	-4.8620***	-4.2825***	-2.3879***	-1.5151***
	(0.0888)	(0.1552)	(0.1308)	(0.1538)	(0.5776)	(0.5943)	(0.5474)	(0.8091)	(0.2464)	(0.4301)
2012bn.hyear	-0.0009	-0.2283*	-0.0823***	0.0047	0.0063	0.0135	-0.0172	0.1079	-0.0587**	0.0539
	(0.0378)	(0.1343)	(0.0273)	(0.1152)	(0.0209)	(0.1139)	(0.0257)	(0.1144)	(0.0277)	(0.1130)
2017.hyear	0.0404	0.6410***	-0.1302**	0.7559***	0.0036	0.7197***	0.0394	0.7781***	0.0108	0.7768***
	(0.0627)	(0.2202)	(0.0529)	(0.2127)	(0.0443)	(0.2113)	(0.0478)	(0.2136)	(0.0725)	(0.2106)
excesslate	0.2927***	0.1900***								
	(0.0284)	(0.0582)								
excesspost1			0.4428***	0.3271***						
			(0.0421)	(0.0845)						
excesspost2					0.3173***	0.1933***				
					(0.0597)	(0.0539)				
excesspost3							0.4737***	0.3966***		
							(0.0473)	(0.0753)		
excesspost4									0.2696***	0.1664***
									(0.0298)	(0.0480)
Observations	6,683	6,683	6,683	6,683	6,683	6,683	6,683	6,683	6,683	6,683
R-squared	0.260		0.309		0.179		0.300		0.129	
Kleibergen-Paap rk LM stat	24.15		24.54		22.35		23.27		22.95	
Chi-sq(5) P-val	2.33e-05		1.92e-05		5.51e-05		3.55e-05		4.14e-05	
Kleibergen-Paap rk Wald F stat	10.24		10.31		9.035		9.564		9.426	
Hansen's J stat	1.309		3.697		2.852		0.442		4.073	
Chi-sq(4) p-value	0.520		0.157		0.240		0.802		0.130	
N		6683		6683		6683		6683		6683
Cluster		578		578		578		578		578

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A-11: 2SLS regression output summary of canned beans

Week of interest	LATE		POST1		POST2		POST3		POST4	
	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A
Dependent variable	*product_avail_late*	*stock_prop_early*	*product_avail_post1*	*stock_prop_early*	*product_avail_post2*	*stock_prop_early*	*product_avail_post3*	*stock_prop_early*	*product_avail_post4*	*stock_prop_early*
Variable										
Endogeneous										
stock_prop_early	-0.2176**		0.2087**		0.1273		0.0384		0.0346	
	(0.0922)		(0.0926)		(0.0920)		(0.1120)		(0.0783)	
Instruments										
vehicles		5.8413**		7.0891**		7.1317**		7.0524**		7.1127**
		(2.5685)		(3.4395)		(3.5091)		(3.4898)		(3.4311)
thgstockp		1.4509*		1.1904		1.3831		1.0820		1.0218
		(0.8445)		(0.8781)		(0.8578)		(0.8578)		(0.8590)
medincome		0.0461***		0.0536***		0.0558***		0.0572***		0.0505***
		(0.0123)		(0.0139)		(0.0133)		(0.0135)		(0.0136)
intra_ntw	0.0438	-0.1914	-0.0060	-0.2278	-0.0386	-0.2240	-0.0118	-0.2216	-0.0401*	-0.2216
	(0.0299)	(0.1409)	(0.0331)	(0.1827)	(0.0320)	(0.1876)	(0.0251)	(0.1889)	(0.0214)	(0.1801)
prod_var_upc	-0.9679**	-0.3002	1.1127**	0.4140	0.0179	0.5462	1.3242***	0.4214	0.0951	0.0994
	(0.4052)	(0.8340)	(0.4926)	(0.8269)	(0.5543)	(0.8826)	(0.4504)	(0.8788)	(0.4469)	(0.8614)
hur_exp_state	0.0017	0.0163	-0.0133*	0.0225*	-0.0059	0.0186	-0.0062	0.0190	-0.0044	0.0197*
	(0.0076)	(0.0105)	(0.0079)	(0.0115)	(0.0073)	(0.0113)	(0.0071)	(0.0117)	(0.0060)	(0.0113)
vol_county	21.9301	-57.7827*	9.2321*	-82.0055*	4.6415	-87.5413*	6.2170	-86.6220*	10.5992**	-86.1715*
	(15.2020)	(34.4269)	(5.3253)	(46.1562)	(4.8236)	(46.6317)	(5.3029)	(46.1652)	(4.7223)	(45.9563)
vol_state	-10.2659	-16.1459	4.1280	-38.9251	26.9543*	-29.0919	37.6945**	-30.6609	51.2941**	-21.9074
	(21.9819)	(33.2115)	(13.4144)	(37.4394)	(14.6098)	(37.3107)	(18.6272)	(37.4510)	(20.4971)	(36.4373)
hhi_county	0.0118	0.0866	0.0119	0.1256	-0.0183	0.1345	0.0314	0.1402*	0.0310	0.1229
	(0.0491)	(0.0761)	(0.0553)	(0.0832)	(0.0530)	(0.0834)	(0.0534)	(0.0843)	(0.0498)	(0.0833)
hhi_state	1.5083	0.2330	2.3803*	0.2094	0.4163	0.2778	1.6354	0.3664	1.8115	0.4713
	(1.5620)	(1.8165)	(1.2866)	(1.8850)	(1.5746)	(1.8156)	(1.6368)	(1.8739)	(1.6074)	(1.8687)
pop_den_county	0.1658	-0.3480	0.2814**	-0.2245	0.3411**	-0.0610	-0.0508	0.0254	0.0780	-0.1674
	(0.1315)	(0.2935)	(0.1349)	(0.3502)	(0.1442)	(0.3431)	(0.1368)	(0.3382)	(0.0952)	(0.3180)
hur_track_wind	0.0025*	0.0097***	-0.0019	0.0105***	-0.0020	0.0106***	-0.0008	0.0110***	0.0007	0.0108***
	(0.0014)	(0.0013)	(0.0013)	(0.0013)	(0.0013)	(0.0013)	(0.0016)	(0.0013)	(0.0012)	(0.0014)
chain_foodgroc	0.5904***	0.7888***	-1.2061	0.8073***	-0.5633	0.9502***	-1.0376	0.8798***	0.2947***	0.8864***
	(0.0999)	(0.1174)	(0.9653)	(0.1412)	(1.0065)	(0.1566)	(1.0645)	(0.1499)	(0.0898)	(0.1537)
chain_mass	0.6702***	0.7182***	-0.7882	0.8038***	-0.1796	0.5712***	-0.8535	0.8678***	0.3773	0.7130***
	(0.1591)	(0.1444)	(0.9780)	(0.1608)	(1.1270)	(0.2088)	(1.0776)	(0.1403)	(0.2304)	(0.1373)
chain_drug	1.5585***	0.6756***	-0.9444	0.7978***	-0.3346	0.8366***	-0.2164	0.8233***	1.8044***	0.7052***
	(0.1984)	(0.1496)	(0.9595)	(0.1296)	(1.0129)	(0.1510)	(1.0947)	(0.1250)	(0.3503)	(0.1137)
2012bn.hyear	-0.0448	-0.2501***	-0.1566***	-0.2907***	0.0031	-0.3014***	-0.3045***	-0.2887***	-0.1241***	-0.2243***
	(0.0486)	(0.0592)	(0.0424)	(0.0681)	(0.0650)	(0.0653)	(0.0522)	(0.0659)	(0.0399)	(0.0679)
2017.hyear	0.1151*	0.3192***	-0.1390**	0.2959***	-0.1579**	0.3381***	-0.2231**	0.3815***	-0.0500	0.3259***
	(0.0674)	(0.0774)	(0.0603)	(0.0814)	(0.0671)	(0.0807)	(0.0997)	(0.0825)	(0.0559)	(0.0811)
excesslate	0.5517***	0.1913***								
	(0.0464)	(0.0216)								
excesspost1			0.4801***	0.1777***						
			(0.0952)	(0.0285)						
excesspost2					0.1400*	0.0647***				
					(0.0740)	(0.0232)				
excesspost3							0.2924***	0.0813***		
							(0.0672)	(0.0125)		
excesspost4									0.6968***	0.1889***
									(0.0514)	(0.0281)
Observations	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400	6,400
R-squared	0.272		0.228		0.083		0.180		0.333	
Kleibergen-Paap rk LM stat	20.25		19.97		22.35		21.43		17.44	
Chi-sq(5) P-val	0.000150		0.000172		5.51e-05		8.59e-05		0.000573	
Kleibergen-Paap rk Wald F stat	9.543		8.666		10.05		9.494		7.671	
Hansen's J stat	1.197		2.008		6.773		3.112		0.548	
Chi-sq(4) p-value	0.550		0.366		0.0338		0.211		0.761	
N		6400		6400		6400		6400		6400
Cluster		574		574		574		574		574

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A-12: 2SLS regression output summary of frozen meats

Week of interest	LATE		POST1		POST2		POST3		POST4	
	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A
Dependent variable	*product_avail_late*	*stock_prop_early*	*product_avail_post1*	*stock_prop_early*	*product_avail_post2*	*stock_prop_early*	*product_avail_post3*	*stock_prop_early*	*product_avail_post4*	*stock_prop_early*
Variable										
Endogeneous										
stock_prop_early	0.2626		0.0758		0.1707		0.4182		-0.2084	
	(0.6712)		(0.4329)		(0.4344)		(0.4954)		(0.5017)	
Instruments										
vehicles		0.8854		0.0887		0.3395		0.7394		0.4592
		(1.1724)		(1.0838)		(1.1466)		(1.1748)		(1.1267)
thgstockp		2.4501		2.6201		2.2008		2.6689		2.4141
		(2.1340)		(2.2627)		(2.1783)		(2.2239)		(2.3280)
medincome		0.0018		0.0065		0.0055		0.0042		0.0066
		(0.0107)		(0.0110)		(0.0108)		(0.0107)		(0.0107)
intra_ntw	0.1367	-0.0721	0.1014	-0.0958	0.1253	-0.0900	0.0278	-0.0420	-0.0555	-0.1204
	(0.1520)	(0.1375)	(0.1424)	(0.1330)	(0.1129)	(0.1312)	(0.1435)	(0.1462)	(0.1429)	(0.1321)
prod_var_upc	-5.0957	20.9152***	-0.1165	20.8671***	-6.5470	20.6954***	-10.5713	18.1954***	1.6123	20.3051***
	(13.9140)	(3.5327)	(9.1713)	(3.5722)	(9.3568)	(3.4854)	(9.1871)	(3.6073)	(10.1702)	(3.4748)
hur_exp_state	-0.0079	0.0167	-0.0045	0.0171	-0.0019	0.0197	-0.0207	0.0224**	-0.0101	0.0221*
	(0.0168)	(0.0126)	(0.0132)	(0.0126)	(0.0128)	(0.0125)	(0.0169)	(0.0109)	(0.0148)	(0.0123)
vol_county	-11.0278	-61.1741*	-12.4288	-48.1450	-12.3685	-55.7040*	12.2155	-66.9772**	-6.9200	-57.5134*
	(46.1728)	(31.7641)	(28.2477)	(30.6467)	(30.4758)	(30.2393)	(37.5691)	(32.6699)	(32.1515)	(32.2767)
vol_state	49.9872	-21.6094	19.3385	-10.3950	62.2003*	-27.2029	75.1070	-28.9399	39.1839	-27.8729
	(33.4174)	(45.3714)	(33.8808)	(47.3552)	(37.7602)	(43.8672)	(50.1256)	(34.8400)	(39.5340)	(44.9147)
hhi_county	0.1394	-0.0779	0.0799	-0.0856	0.0610	-0.0861	0.0577	-0.0487	0.0023	-0.1296
	(0.1055)	(0.1174)	(0.0796)	(0.1148)	(0.0827)	(0.1175)	(0.0899)	(0.1061)	(0.1061)	(0.1128)
hhi_state	2.1326*	-0.3530	0.2728	-0.7742	1.1687	-0.9277	1.8870	-0.4719	1.3215	-0.8730
	(1.2491)	(1.1629)	(1.0256)	(1.1731)	(0.9915)	(1.1360)	(1.2261)	(1.1613)	(1.0829)	(1.2120)
pop_den_county	-0.2573	-0.3158	-0.1096	-0.1225	-0.2333	-0.1669	-0.2752	-0.3611*	-0.3543***	-0.1381
	(0.2861)	(0.2120)	(0.1606)	(0.1928)	(0.1535)	(0.1933)	(0.2089)	(0.2109)	(0.1312)	(0.1917)
hur_track_wind	-0.0035	0.0042	-0.0044*	0.0045	-0.0029	0.0041	-0.0011	0.0037	-0.0008	0.0039
	(0.0032)	(0.0034)	(0.0024)	(0.0034)	(0.0024)	(0.0035)	(0.0025)	(0.0030)	(0.0027)	(0.0033)
chain_foodgroc	-0.6360***	-0.2320	-0.4909***	-0.3095*	-0.2332	-0.3167*	-0.2641	-0.4958***	-0.4109**	-0.3081*
	(0.1926)	(0.1698)	(0.1874)	(0.1636)	(0.1966)	(0.1666)	(0.2540)	(0.1681)	(0.1782)	(0.1719)
chain_mass	-0.7991***	0.0881	-0.7504***	-0.0753	-0.2942	-0.0538	-0.1333	-0.1935	-0.6727***	-0.0782
	(0.2062)	(0.2182)	(0.1802)	(0.2086)	(0.1987)	(0.2167)	(0.2313)	(0.1957)	(0.1530)	(0.2121)
chain_drug						NA				
2012bn.hyear						NA				
2017.hyear	-0.1732	0.3414**	-0.2139	0.3574**	-0.2004	0.3383**	0.0164	0.2162*	-0.0067	0.2982**
	(0.2430)	(0.1425)	(0.1716)	(0.1419)	(0.1693)	(0.1462)	(0.1435)	(0.1276)	(0.1865)	(0.1410)
excesslate	0.4113***	0.0753***								
	(0.0597)	(0.0263)								
excesspost1			0.5871***	0.1610***						
			(0.0822)	(0.0409)						
excesspost2					0.4603***	0.1763***				
					(0.1418)	(0.0524)				
excesspost3							0.4581***	0.3184***		
							(0.1629)	(0.0499)		
excesspost4									0.6868***	0.1764***
									(0.1112)	(0.0371)
Observations	3,405	3,405	3,405	3,405	3,405	3,405	3,405	3,405	3,405	3,405
R-squared	0.299		0.315		0.211		0.007		0.296	
Kleibergen-Paap rk LM stat	2.191		2.377		1.906		2.437		2.163	
Chi-sq(5) P-val	0.534		0.498		0.592		0.487		0.539	
Kleibergen-Paap rk Wald F stat	0.841		0.807		0.637		0.908		0.732	
Hansen's J stat	2.058		7.583		3.278		2.524		2.076	
Chi-sq(4) p-value	0.357		0.0226		0.194		0.283		0.354	
N		3405		3405		3405		3405		3405
Cluster		414		414		414		414		414

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A-13: 2SLS regression output summary of dry pasta

Week of interest	LATE		POST1		POST2		POST3		POST4	
	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A
Dependent variable	*product_avail_late*	*stock_prop_early*	*product_avail_post1*	*stock_prop_early*	*product_avail_post2*	*stock_prop_early*	*product_avail_post3*	*stock_prop_early*	*product_avail_post4*	*stock_prop_early*
Variable										
Endogeneous										
stock_prop_early	0.0219		0.0281		0.2488*		-0.0728		-0.0010	
	(0.1964)		(0.1219)		(0.1350)		(0.1125)		(0.1359)	
Instruments										
vehicles		1.9735***		2.5269***		2.4575***		2.1219***		2.4485***
		(0.7048)		(0.5744)		(0.6360)		(0.6874)		(0.5839)
thgstockp		1.5019**		1.4675**		1.2526*		1.3710**		1.3554**
		(0.6651)		(0.6754)		(0.6677)		(0.6419)		(0.6569)
medincome		0.0320***		0.0413***		0.0397***		0.0418***		0.0388***
		(0.0089)		(0.0104)		(0.0096)		(0.0103)		(0.0102)
intra_ntw	-0.0236	-0.0447	-0.0228	-0.0132	-0.0277	-0.0115	0.0137	0.0128	-0.0072	-0.0133
	(0.0305)	(0.0399)	(0.0196)	(0.0300)	(0.0252)	(0.0281)	(0.0241)	(0.0354)	(0.0252)	(0.0277)
prod_var_upc	-0.0265	-0.3444*	0.0220	-0.2795	0.0368	-0.2687	0.0660	-0.2733	-0.1403*	-0.3420*
	(0.1507)	(0.1774)	(0.0722)	(0.1905)	(0.0987)	(0.1836)	(0.0790)	(0.1879)	(0.0749)	(0.1941)
hur_exp_state	0.0028	0.0138*	-0.0006	0.0221***	-0.0029	0.0174**	0.0089*	0.0183**	0.0063	0.0201**
	(0.0062)	(0.0075)	(0.0053)	(0.0085)	(0.0058)	(0.0082)	(0.0054)	(0.0085)	(0.0057)	(0.0087)
vol_county	4.7965	-48.9058***	6.9363	-65.7985***	12.7965**	-64.5855***	3.2838	-62.4043***	1.2658	-66.4170***
	(9.5145)	(11.0147)	(5.6523)	(20.7934)	(6.2772)	(21.2297)	(7.6521)	(18.8233)	(5.8638)	(20.4709)
vol_state	6.2680	-52.9419**	-3.3523	-77.7580***	13.6920	-74.3142**	1.4843	-73.1731**	13.4731	-67.1651**
	(20.0854)	(24.6706)	(13.8278)	(30.0494)	(15.9137)	(29.9939)	(15.1276)	(29.5496)	(12.9390)	(30.0759)
hhi_county	0.0097	0.0215	0.0233	0.0689	0.0323	0.0739	0.1126***	0.0845	-0.0151	0.0661
	(0.0463)	(0.0511)	(0.0393)	(0.0528)	(0.0419)	(0.0512)	(0.0404)	(0.0519)	(0.0392)	(0.0533)
hhi_state	1.2369	-1.7084	2.9015**	-2.2790*	1.9228	-1.9230	0.6377	-2.7581**	1.5590*	-1.9247
	(1.2122)	(1.1375)	(1.2365)	(1.2846)	(1.3113)	(1.1926)	(1.1339)	(1.2653)	(0.9325)	(1.3171)
pop_den_county	-0.3737**	-0.6564***	-0.0696	-0.3651***	-0.0636	-0.3639***	-0.1293*	-0.3916***	-0.2790***	-0.3683***
	(0.1545)	(0.1005)	(0.0576)	(0.0893)	(0.0504)	(0.0884)	(0.0668)	(0.0879)	(0.0550)	(0.0907)
hur_track_wind	-0.0000	0.0038***	-0.0001	0.0043***	-0.0017**	0.0048***	-0.0007	0.0044***	-0.0002	0.0048***
	(0.0010)	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0008)	(0.0007)	(0.0008)	(0.0008)	(0.0008)
chain_foodgroc	-0.4253**	-0.4405	0.3887***	-0.5748	-0.2897	-0.4591	-0.3015	-0.5134	0.1030	-0.6467
	(0.1951)	(0.3978)	(0.0842)	(0.4095)	(0.4471)	(0.3724)	(0.3130)	(0.4033)	(0.2073)	(0.4047)
chain_mass	-0.5996**	-0.5856	0.3664	-0.8791*	0.2953	-0.7091	-0.5004	-0.7274	-0.2321	-0.9391**
	(0.2603)	(0.4533)	(0.3181)	(0.4534)	(0.6566)	(0.4325)	(0.3722)	(0.4594)	(0.2458)	(0.4651)
chain_drug	-0.2399	-0.5875	0.2526*	-0.7718*	-0.3735	-0.6256*	-0.1817	-0.7326*	-0.2255	-1.1142***
	(0.2388)	(0.4014)	(0.1505)	(0.4141)	(0.4549)	(0.3750)	(0.3249)	(0.4067)	(0.2612)	(0.4123)
2012bn.hyear	0.0988***	-0.1114***	-0.0688**	-0.1589***	-0.0449	-0.1071***	-0.0732***	-0.1228***	-0.0064	-0.0982**
	(0.0381)	(0.0375)	(0.0303)	(0.0411)	(0.0310)	(0.0407)	(0.0233)	(0.0420)	(0.0278)	(0.0405)
2017.hyear	-0.0271	0.1040**	-0.0783**	0.0436	-0.1257***	0.1043*	-0.0542	0.0921	-0.0966**	0.0884
	(0.0536)	(0.0519)	(0.0391)	(0.0565)	(0.0459)	(0.0542)	(0.0375)	(0.0560)	(0.0449)	(0.0557)
excesslate	0.4804***	0.2111***								
	(0.0560)	(0.0133)								
excesspost1			0.6150***	0.1801***						
			(0.0409)	(0.0249)						
excesspost2					0.6348***	0.2564***				
					(0.0400)	(0.0280)				
excesspost3							0.6724***	0.1992***		
							(0.0433)	(0.0213)		
excesspost4									0.8037***	0.3022***
									(0.0569)	(0.0300)
Observations	6,607	6,607	6,607	6,607	6,607	6,607	6,607	6,607	6,607	6,607
R-squared	0.272		0.340		0.268		0.341		0.345	
Kleibergen-Paap rk LM stat	20.29		24.62		24.86		23.48		24.05	
Chi-sq(5) P-val	0.000148		1.86e-05		1.65e-05		3.20e-05		2.44e-05	
Kleibergen-Paap rk Wald F stat	6.648		12.23		11.72		9.924		11.79	
Hansen's J stat	2.801		1.597		4.018		4.324		5.245	
Chi-sq(4) p-value	0.246		0.450		0.134		0.115		0.0726	
N		6607		6607		6607		6607		6607
Cluster		576		576		576		576		576

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table A-14: 2SLS regression output summary of toilet paper

Week of interest	LATE		POST1		POST2		POST3		POST4	
	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A	2nd stage	1st stage A
Dependent variable	*product_avail_late*	*stock_prop_early*	*product_avail_post1*	*stock_prop_early*	*product_avail_post2*	*stock_prop_early*	*product_avail_post3*	*stock_prop_early*	*product_avail_post4*	*stock_prop_early*
Variable										
Endogeneous										
stock_prop_early	-0.0912		0.0411		0.0501		0.1321*		0.0642	
	(0.0770)		(0.0592)		(0.0658)		(0.0675)		(0.0730)	
Instruments										
vehicles		0.0257		0.1424		0.0557		0.1212		0.1092
		(0.5590)		(0.5169)		(0.5103)		(0.5061)		(0.5384)
thgstockp		-0.0406		-0.0998		-0.0163		0.2040		-0.1097
		(0.2869)		(0.2910)		(0.2962)		(0.2700)		(0.2922)
medincome		0.0171***		0.0175***		0.0162***		0.0200***		0.0166***
		(0.0031)		(0.0032)		(0.0032)		(0.0032)		(0.0033)
intra_ntw	-0.0011	0.0133	0.0161***	0.0203	0.0104**	0.0274	-0.0120	0.0238	0.0010	0.0223
	(0.0092)	(0.0183)	(0.0053)	(0.0222)	(0.0043)	(0.0249)	(0.0078)	(0.0248)	(0.0054)	(0.0232)
prod_var_upc	-1.6817***	-0.1014	-0.4632	0.8205	-1.4241***	0.8917	-1.4781***	0.5295	-0.6264**	0.7076
	(0.2955)	(0.6069)	(0.3155)	(0.6384)	(0.3482)	(0.7475)	(0.3272)	(0.6648)	(0.2741)	(0.6754)
hur_exp_state	0.0006	-0.0003	0.0052**	0.0007	0.0066**	0.0018	0.0069***	-0.0001	0.0070***	0.0002
	(0.0040)	(0.0075)	(0.0026)	(0.0073)	(0.0031)	(0.0073)	(0.0026)	(0.0075)	(0.0023)	(0.0075)
vol_county	14.5158	62.8087	-9.2069	54.3718	-10.0082*	56.9232	-12.9503*	55.4957	-15.0377***	51.2020
	(11.0952)	(46.3583)	(6.3566)	(41.2455)	(5.6758)	(39.7311)	(7.4042)	(45.6978)	(5.2123)	(43.6953)
vol_state	27.9581	41.9681	38.2562***	22.3080	33.0213**	27.3937	22.8240	18.5836	27.4324*	26.8250
	(21.2727)	(36.6336)	(14.8219)	(36.7079)	(16.8455)	(35.7487)	(16.5484)	(37.8006)	(15.1394)	(36.8051)
hhi_county	-0.0013	0.0728	0.0025	0.0949*	0.0329**	0.0966*	0.0361*	0.0858	0.0308*	0.0950*
	(0.0190)	(0.0482)	(0.0170)	(0.0514)	(0.0158)	(0.0530)	(0.0206)	(0.0527)	(0.0162)	(0.0521)
hhi_state	1.3024***	4.9675***	0.5694	4.1559***	1.0982***	4.2413***	-0.1738	3.9181***	-0.1203	4.4297***
	(0.3635)	(1.4896)	(0.4270)	(1.4216)	(0.3364)	(1.5069)	(0.4646)	(1.4208)	(0.3544)	(1.5029)
pop_den_county	0.0330**	0.0341	0.1120***	0.0637	0.0591***	0.0280	0.0636*	0.0065	0.0721**	0.0656
	(0.0150)	(0.0687)	(0.0171)	(0.0692)	(0.0202)	(0.0643)	(0.0385)	(0.0545)	(0.0349)	(0.0703)
hur_track_wind	-0.0001	0.0038***	-0.0004*	0.0036***	-0.0002	0.0035***	-0.0005*	0.0034***	-0.0005	0.0035***
	(0.0004)	(0.0006)	(0.0003)	(0.0006)	(0.0003)	(0.0006)	(0.0003)	(0.0006)	(0.0003)	(0.0006)
chain_foodgroc	0.1526*	-0.3386*	-0.0715*	-0.3530*	0.1626*	-0.2942	0.0524	-0.3891**	0.1268	-0.2717
	(0.0816)	(0.1994)	(0.0376)	(0.2069)	(0.0972)	(0.2395)	(0.0506)	(0.1853)	(0.0853)	(0.2094)
chain_mass	0.1142	-0.2639	-0.0627	-0.3125	0.1029	-0.2441	-0.0008	-0.3485*	0.0968	-0.2850
	(0.0938)	(0.2149)	(0.0682)	(0.2204)	(0.1034)	(0.2562)	(0.0573)	(0.2025)	(0.1039)	(0.2246)
chain_drug	0.1502	-0.4763**	-0.0607	-0.5717***	0.2398**	-0.5319**	0.1095	-0.6866***	0.0157	-0.6114***
	(0.0982)	(0.2002)	(0.0635)	(0.2078)	(0.1010)	(0.2423)	(0.0695)	(0.1888)	(0.0983)	(0.2104)
2012.hyear	0.0072	0.1145***	-0.0569***	0.1053***	0.0006	0.1669***	-0.0371***	0.1234***	-0.0267**	0.1127***
	(0.0133)	(0.0157)	(0.0134)	(0.0170)	(0.0163)	(0.0169)	(0.0135)	(0.0163)	(0.0131)	(0.0158)
2017.hyear						NA				
excesslate	0.2676***	0.1830***								
	(0.0182)	(0.0211)								
excesspost1			0.2234***	0.2138***						
			(0.0286)	(0.0260)						
excesspost2					0.2518***	0.1726***				
					(0.0258)	(0.0282)				
excesspost3							0.1112***	0.3161***		
							(0.0346)	(0.0318)		
excesspost4									0.2313***	0.1265***
									(0.0259)	(0.0369)
Observations	5,084	5,084	5,084	5,084	5,084	5,084	5,084	5,084	5,084	5,084
R-squared	0.243		0.173		0.209		0.021		0.162	
Kleibergen-Paap rk LM stat	25.85		24.63		23.77		31.70		24.22	
Chi-sq(5) P-val	1.03e-05		1.85e-05		2.79e-05		6.07e-07		2.24e-05	
Kleibergen-Paap rk Wald F stat	13.30		12.05		11.07		19.78		11.01	
Hansen's J stat	2.424		5.325		5.017		4.233		4.265	
Chi-sq(4) p-value	0.298		0.0698		0.0814		0.120		0.119	
N		5084		5084		5084		5084		5084
Cluster		300		300		300		300		300

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Appendix B

Chapter 2 Regression Outputs and Supplemental Material

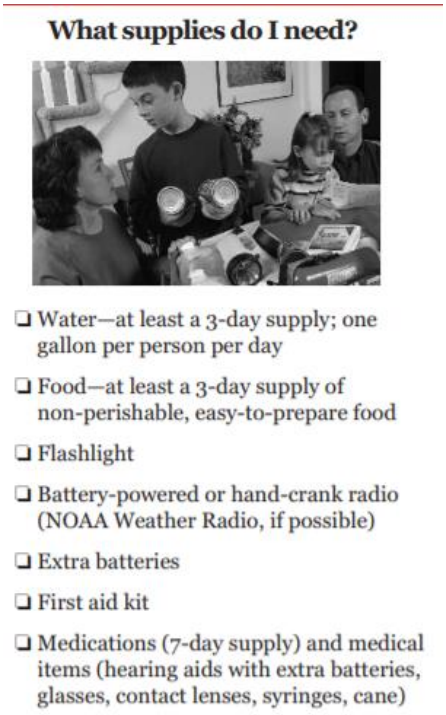
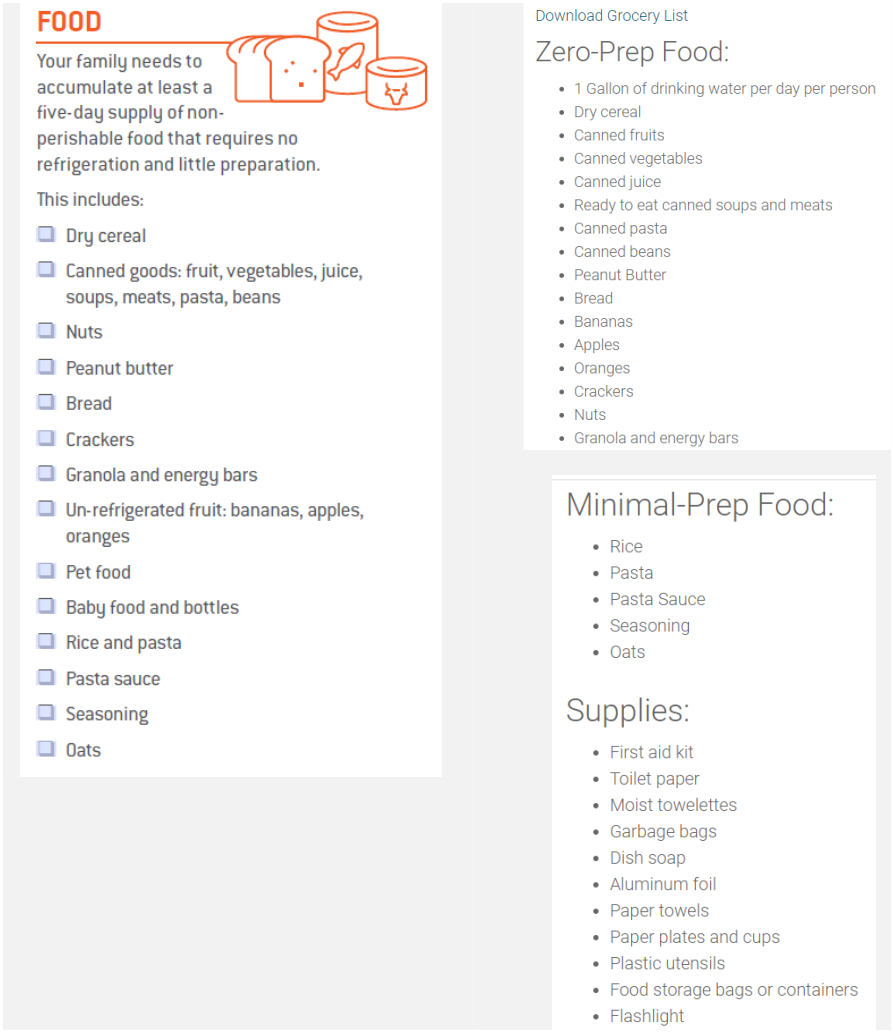


Figure B-1: Disaster preparation kit (American National Red Cross, 2009)



FOOD

Your family needs to accumulate at least a five-day supply of non-perishable food that requires no refrigeration and little preparation.

This includes:

- ☐ Dry cereal
- ☐ Canned goods: fruit, vegetables, juice, soups, meats, pasta, beans
- ☐ Nuts
- ☐ Peanut butter
- ☐ Bread
- ☐ Crackers
- ☐ Granola and energy bars
- ☐ Un-refrigerated fruit: bananas, apples, oranges
- ☐ Pet food
- ☐ Baby food and bottles
- ☐ Rice and pasta
- ☐ Pasta sauce
- ☐ Seasoning
- ☐ Oats

Download Grocery List

Zero-Prep Food:

- 1 Gallon of drinking water per day per person
- Dry cereal
- Canned fruits
- Canned vegetables
- Canned juice
- Ready to eat canned soups and meats
- Canned pasta
- Canned beans
- Peanut Butter
- Bread
- Bananas
- Apples
- Oranges
- Crackers
- Nuts
- Granola and energy bars

Minimal-Prep Food:

- Rice
- Pasta
- Pasta Sauce
- Seasoning
- Oats

Supplies:

- First aid kit
- Toilet paper
- Moist towelettes
- Garbage bags
- Dish soap
- Aluminum foil
- Paper towels
- Paper plates and cups
- Plastic utensils
- Food storage bags or containers
- Flashlight

Figure B-2: Snapshot of Hurricane Preparedness Checklist (Direct Energy, 2021)

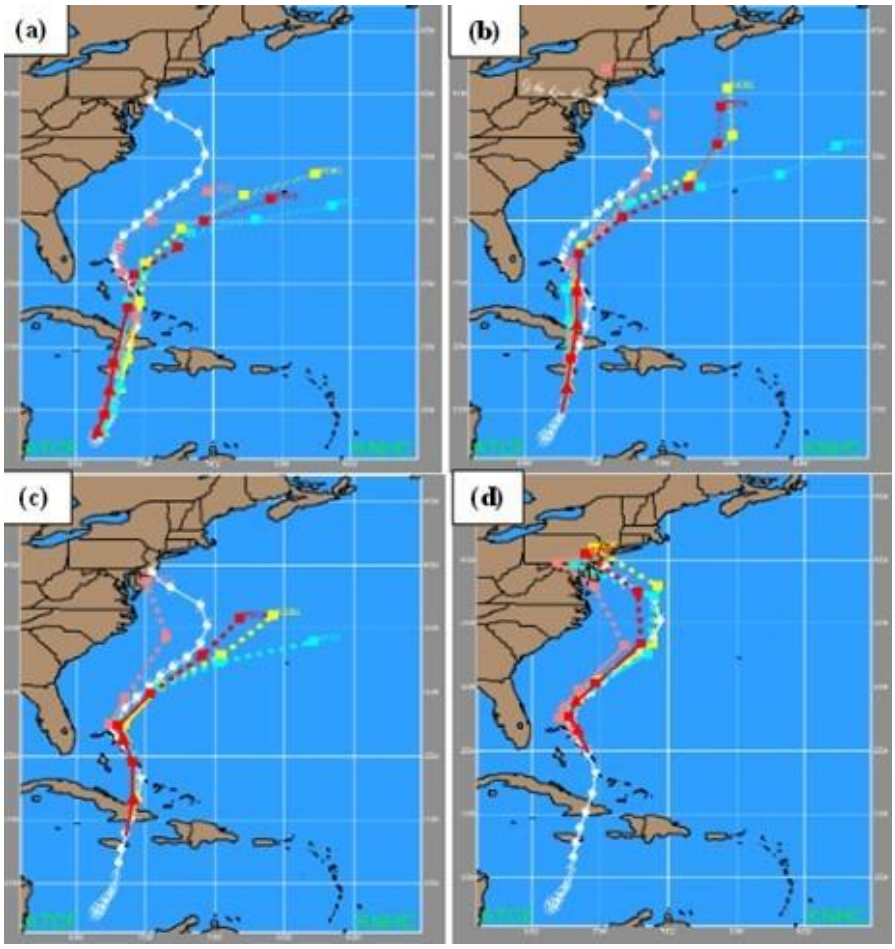


Figure B-3: Model forecast tracks (Source: Blake et al., 2013)

Note: Model forecast tracks at 0000 UTC 23 October 2012 (a), 0000 UTC 24 October 2012 (b), 0000 UTC October 25 2012 (c), and 0000 UTC 26 October 2012 (d), with official track in white.

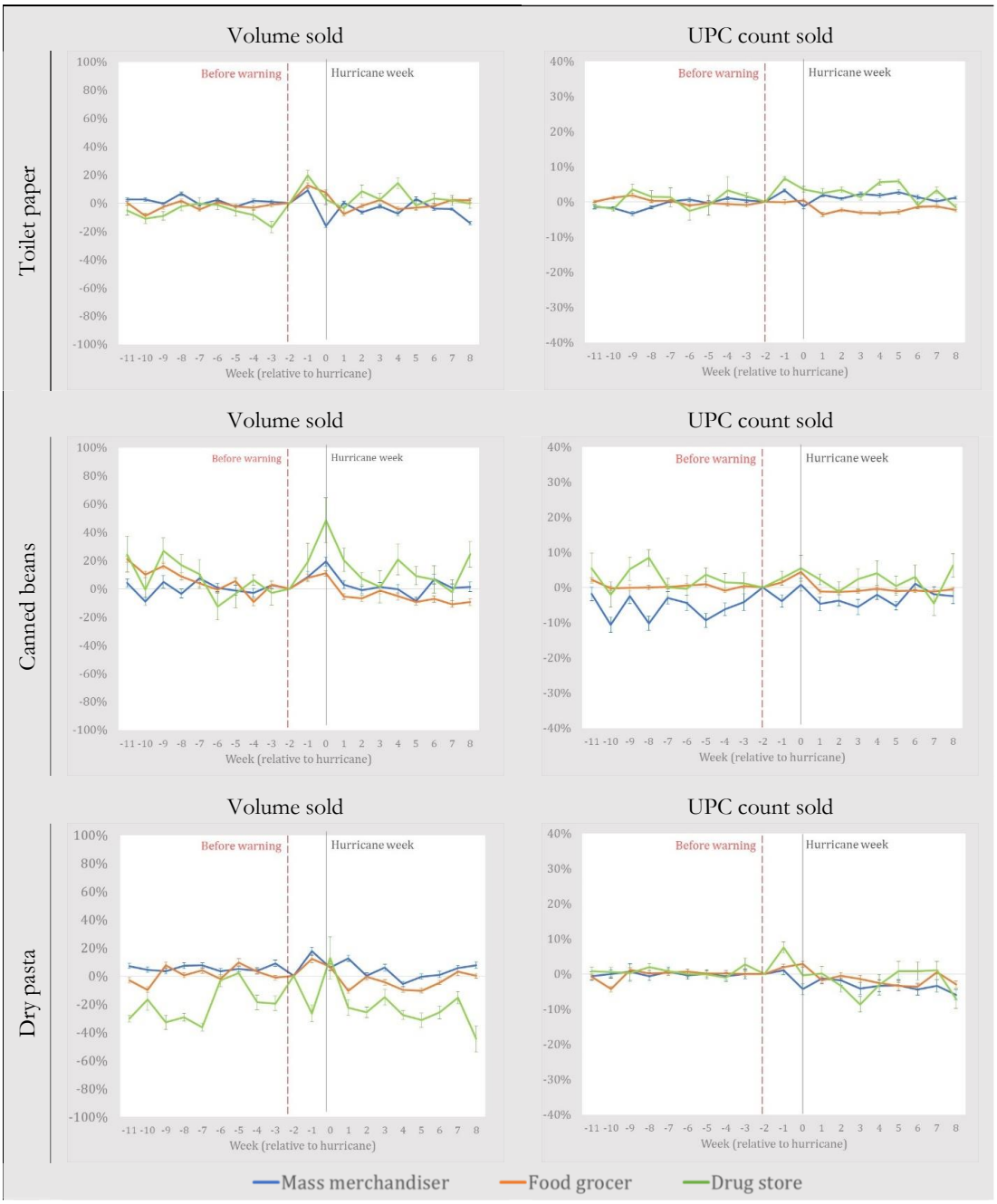


Figure B-4: Event-study plots reflecting weekly average treatment effects of Sandy in volume and unique UPC count sold for other product categories across channels for other products

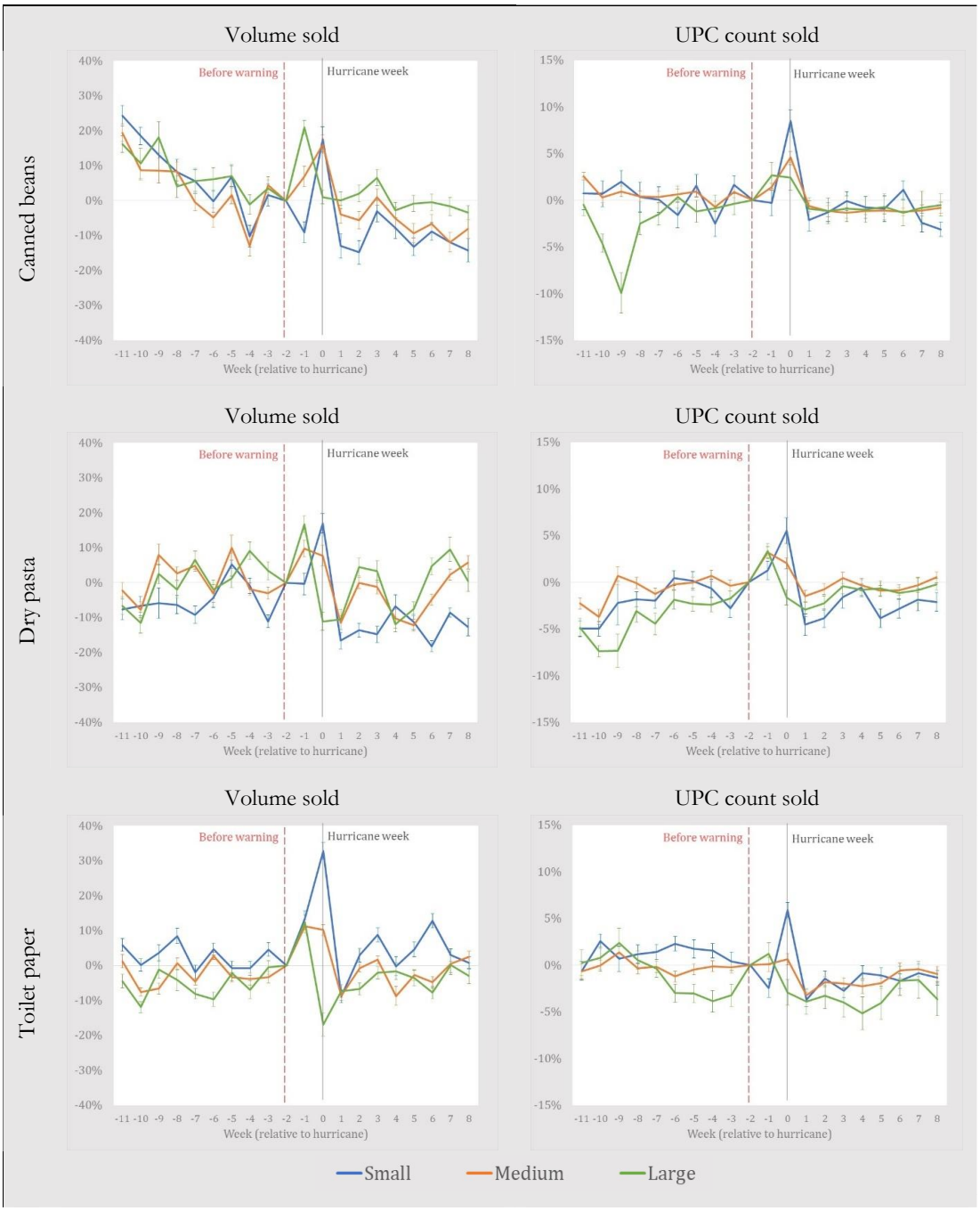


Figure B-5: Event-study plots reflecting weekly average treatment effects of Sandy in volume and unique UPC count sold for other product categories across store sizes within food grocer channel

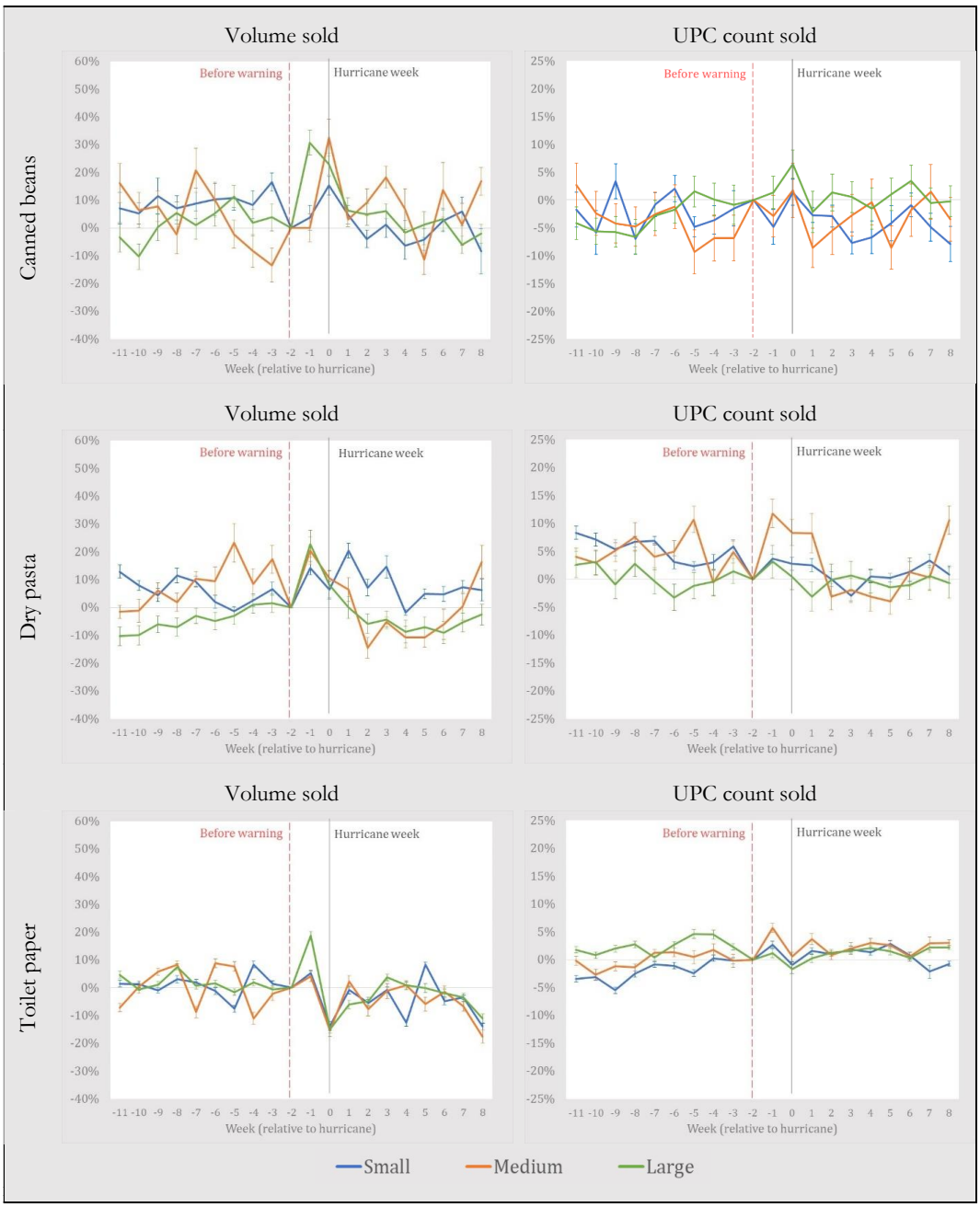


Figure B-6: Event-study plots reflecting weekly average treatment effects of Sandy in volume and unique UPC count sold for other product categories across store sizes within mass merchandiser channel

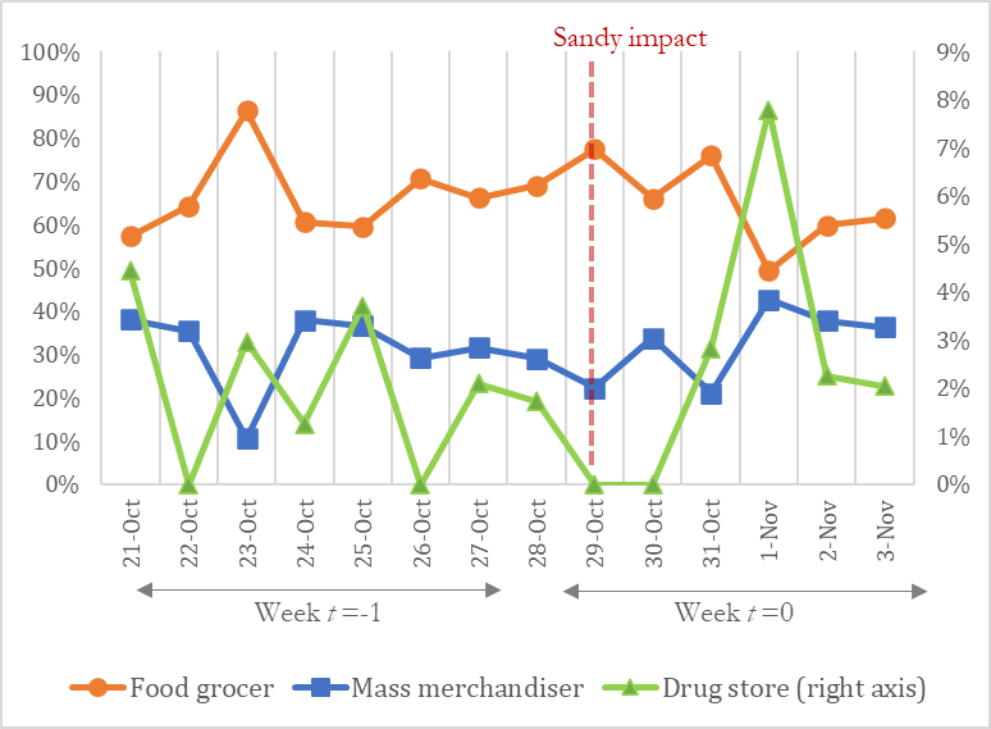


Figure B-7: Percentage of daily contribution of retail channels to peanut butter aggregated purchase volume of a sample of Nielsen Homescan households in Sandy-affected counties within days of Sandy's date of impact

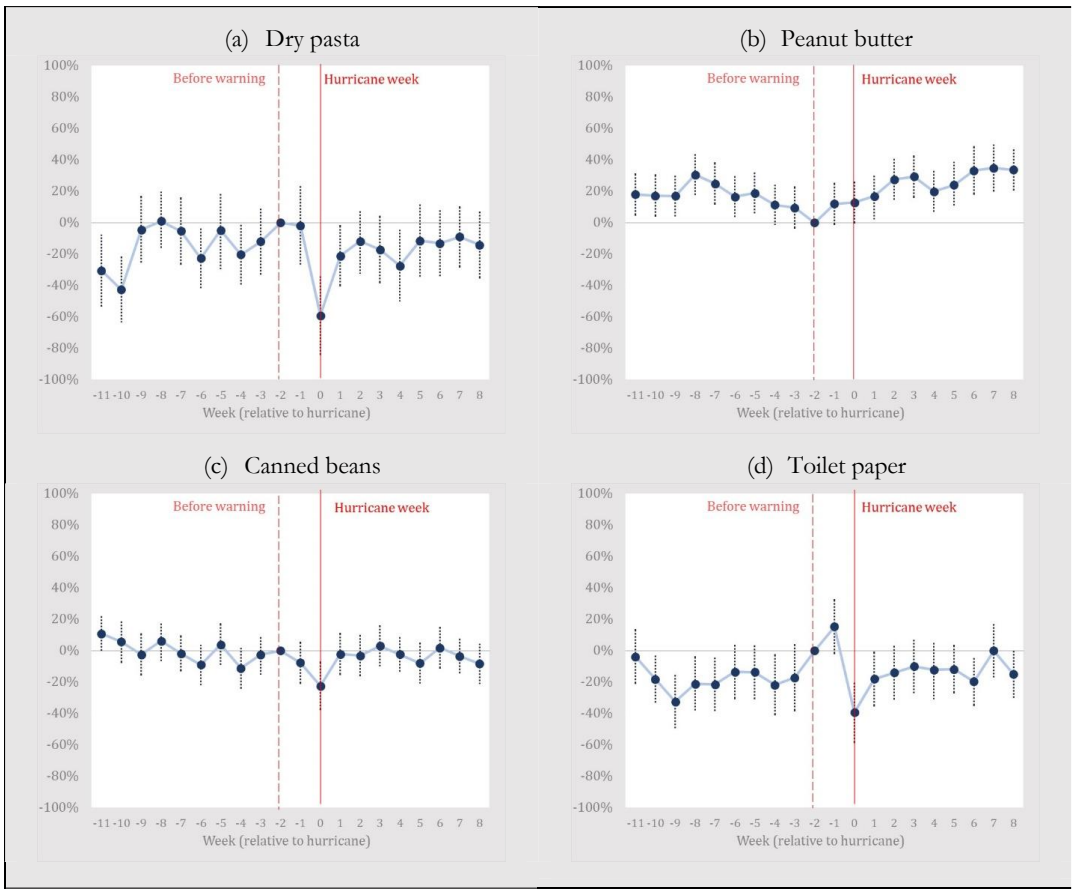


Figure B-8: Event-study plots reflecting weekly average treatment effects of Sandy in volume purchased per member from pooled household sample for other products

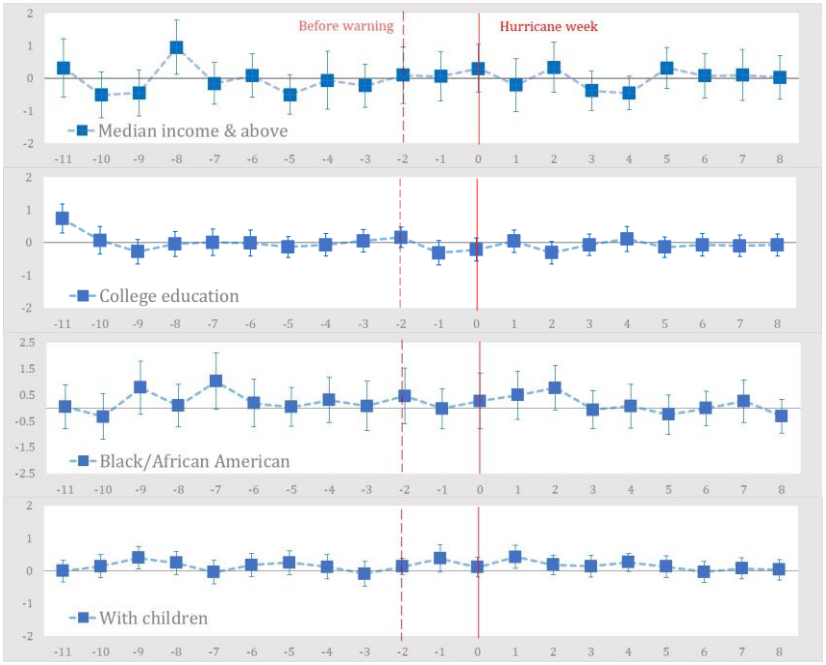


Figure B-9: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy in volume purchased per member of household samples split across binary characteristics for bottled water

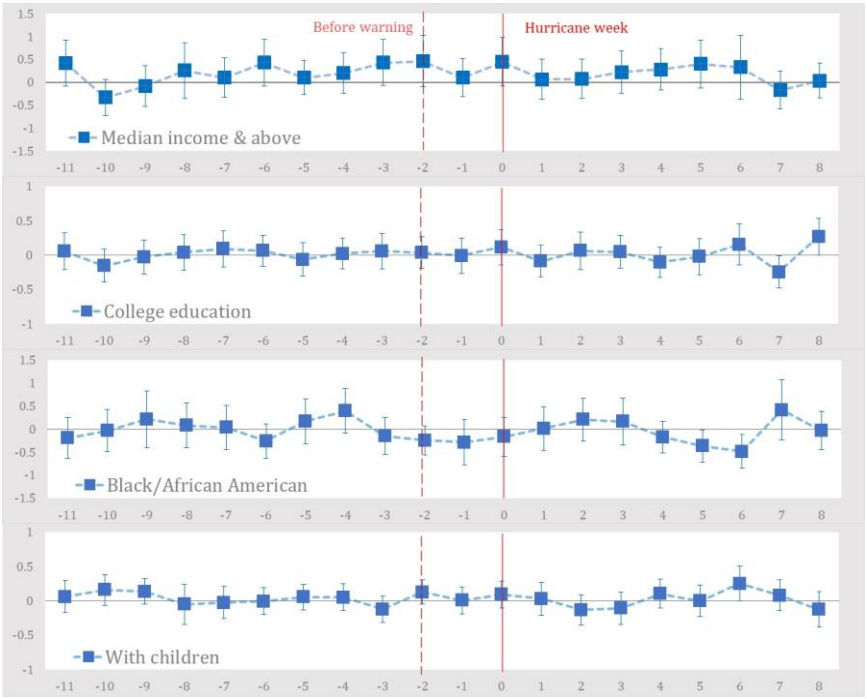


Figure B-10: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy 2012 in volume purchased per member of household samples split across binary characteristics for peanut butter

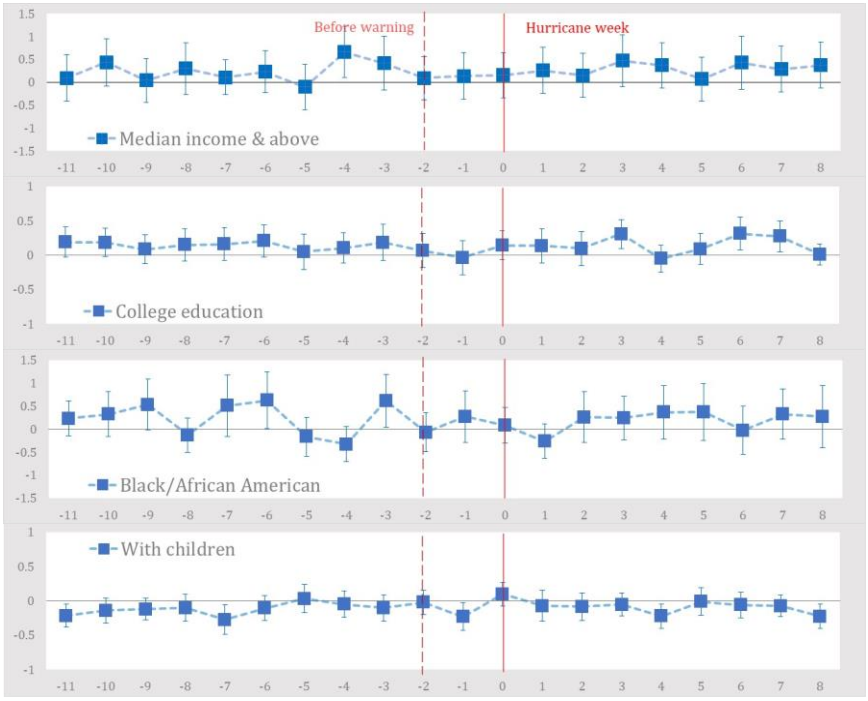


Figure B-11: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy 2012 in volume purchased per member of household samples split across binary characteristics for canned beans

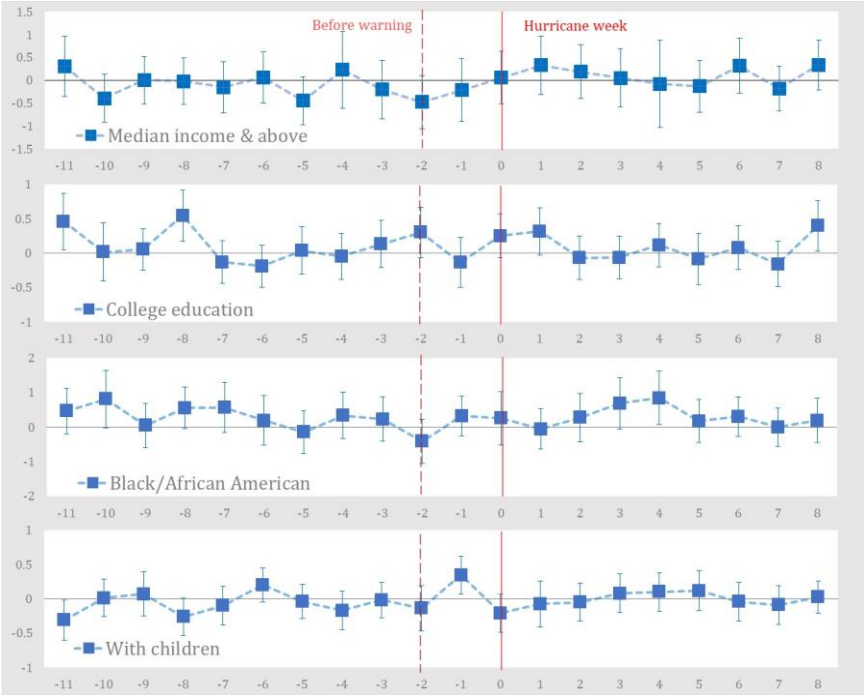


Figure B-12: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy 2012 in volume purchased per member of household samples split across binary characteristics for toilet paper

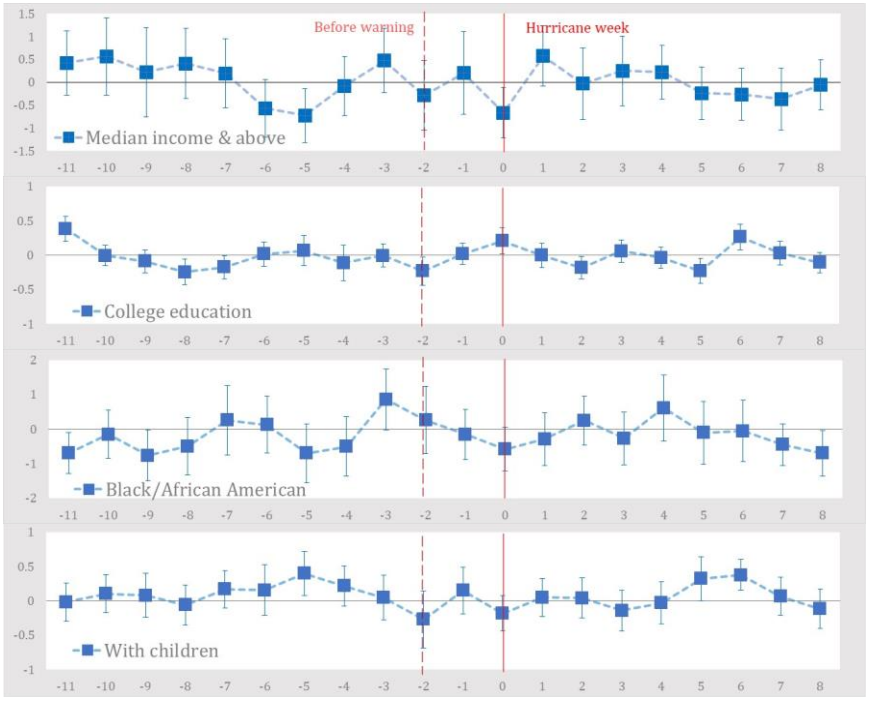


Figure B-13: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy 2012 in volume purchased per member of household samples split across binary characteristics for dry pasta

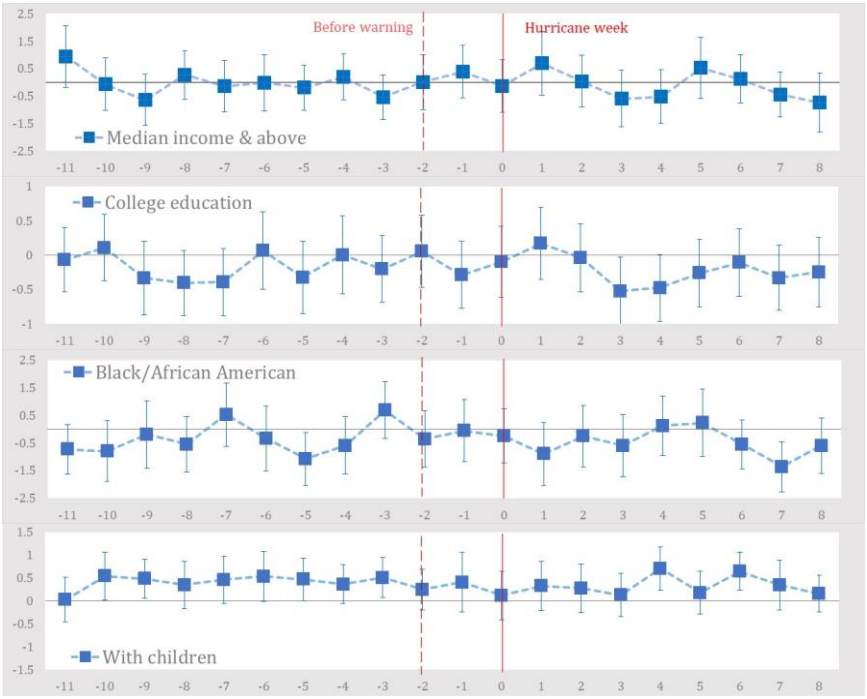


Figure B-14: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy 2012 in volume purchased per member of household samples split across binary characteristics for bread

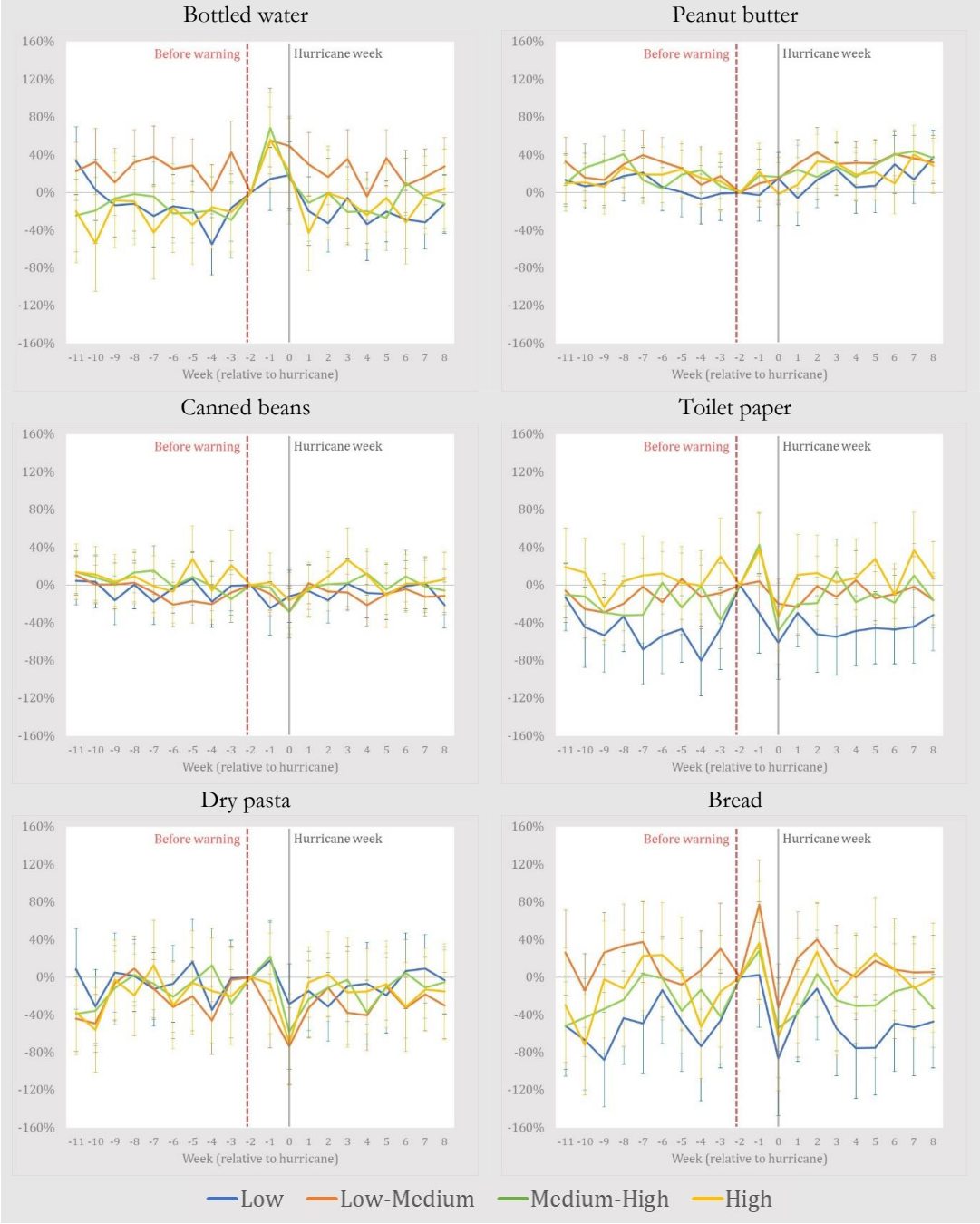


Figure B-15: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy 2012 in volume purchased per member for various product categories across household income

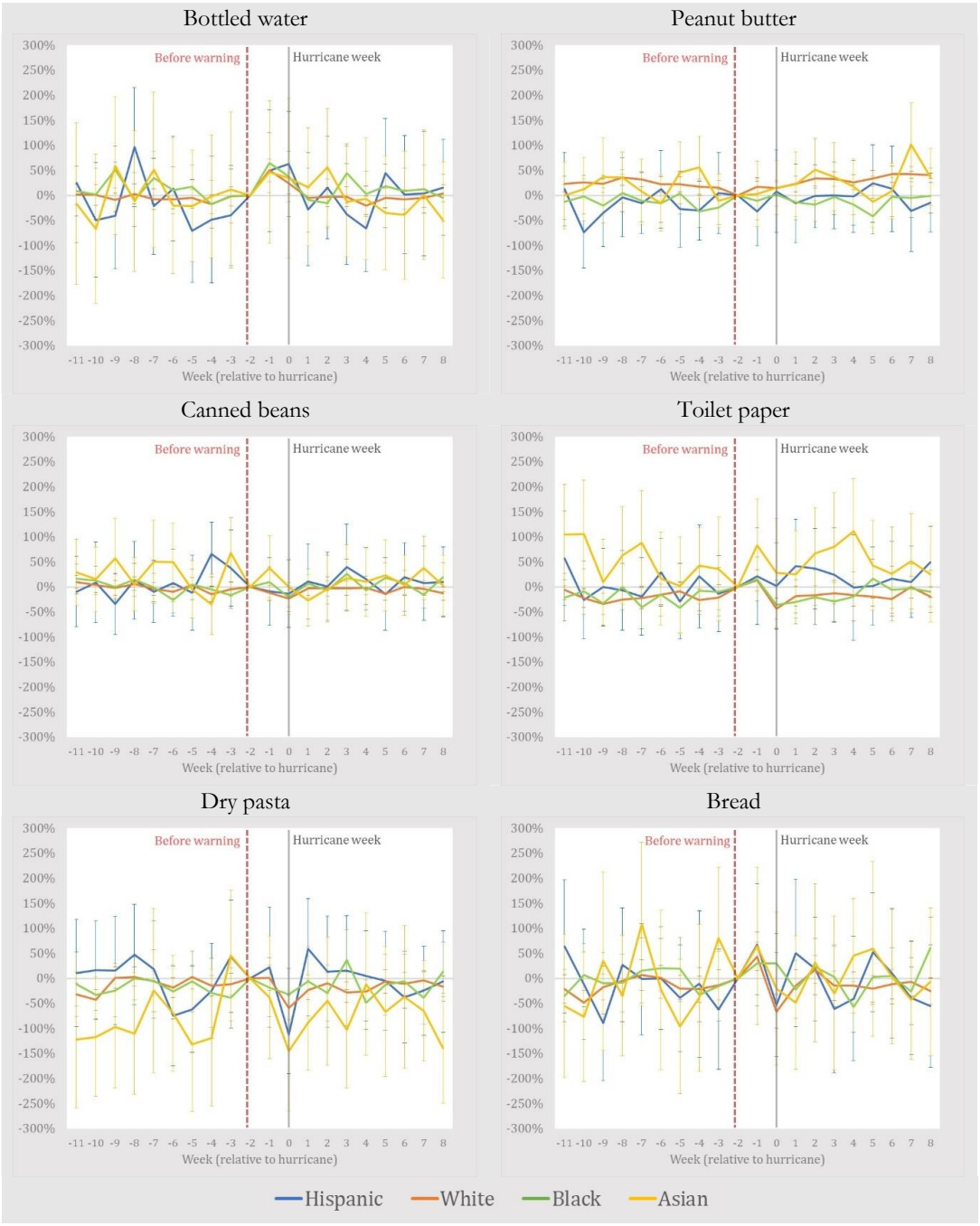


Figure B-16: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy 2012 in volume purchased per member for various product categories across household race

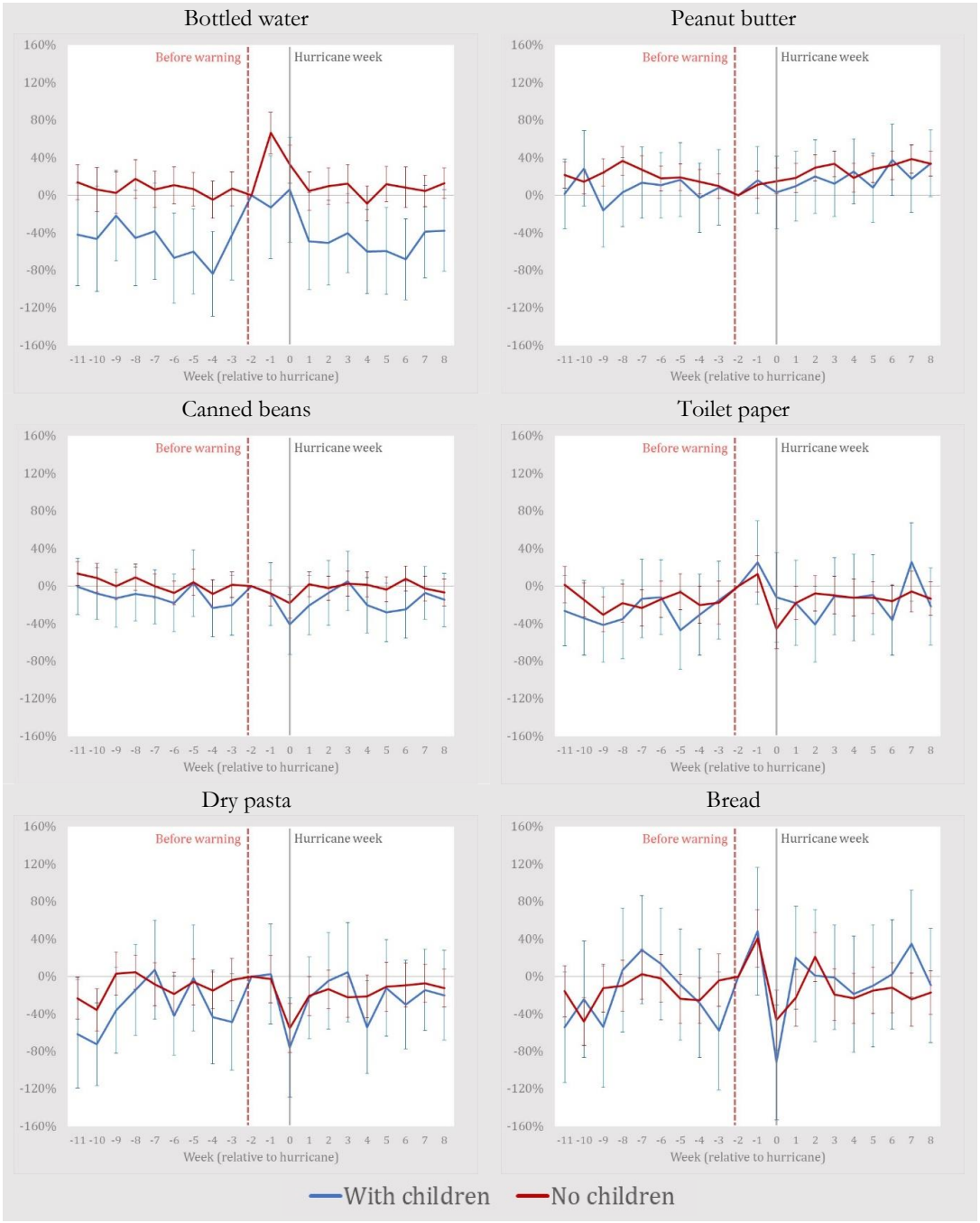


Figure B-17: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy 2012 in volume purchased per member for various product categories across presence of children under 18

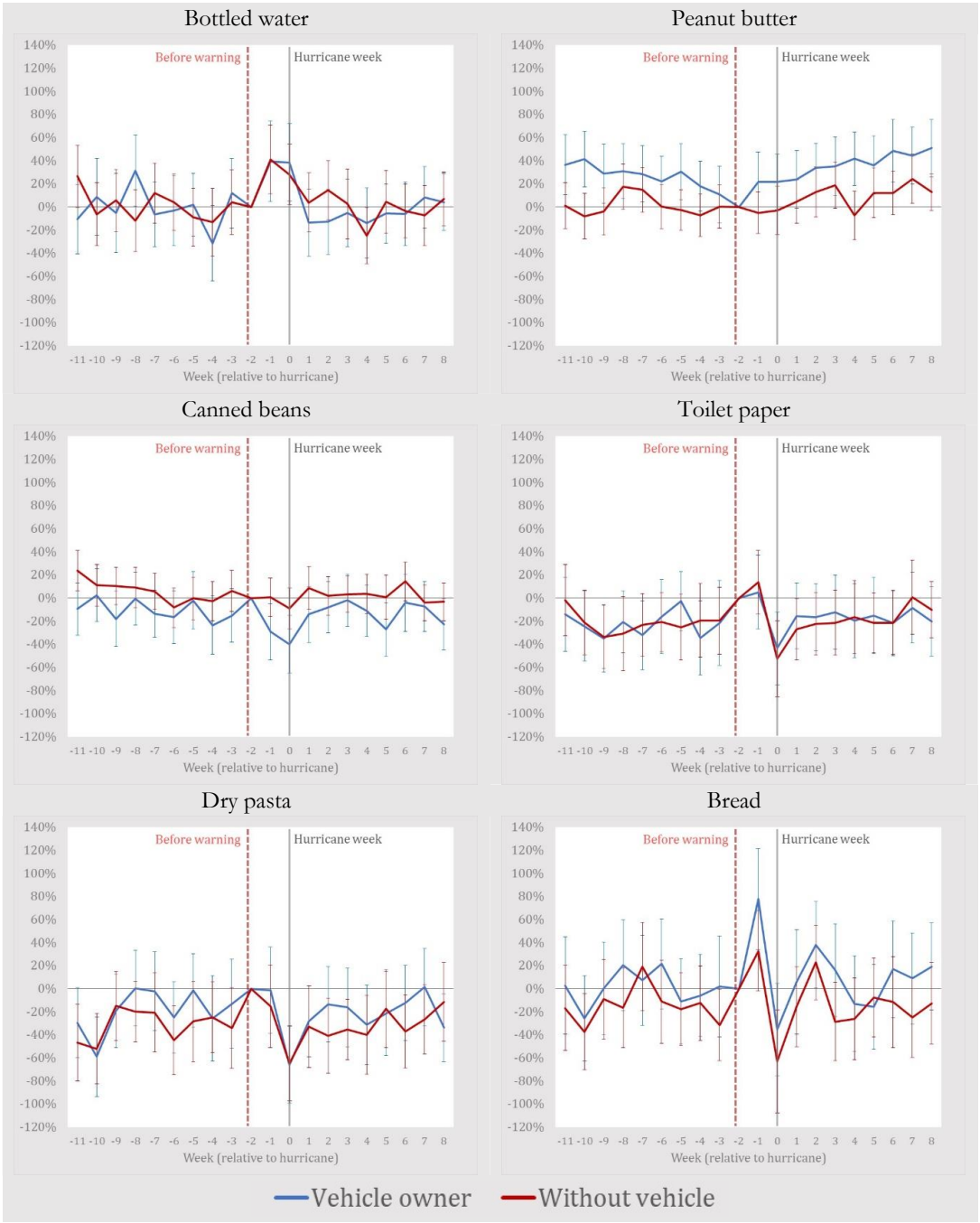


Figure B-18: Event-study plots reflecting heterogeneity of weekly average treatment effects of Sandy 2012 in volume purchased per member for various product categories across vehicle ownership

Table B-1: Product categories and their units of volume

Product category	Unit of volume	
	Store-week-year observations	Household-week-year observations
Food grocery		
Bottled water	oz	oz per member
Peanut butter	oz	oz per member
Canned beans	oz	oz per member
Dry pasta	oz	oz per member
Bread	oz	oz per member
Non-food grocery		
Toilet paper	roll count	roll count per member

Table B-2: Mapping of relative week labels and variable values

Relative week (t)	Variable *hweek* value
-11	1
-10	2
-9	3
-8	4
-7	5
-6	6
-5	7
-4	8
-3	9
-2	10
-1	11
0	12
1	13
2	14
3	15
4	16
5	17
6	18
7	19
8	20

Table B-3: Summary statistics of weekly store volume sold and unique UPC count sold of the pooled store sample (food grocers, mass merchandisers, drug stores)

Independent variable	Aggregated weekly store volume and unique UPC count sold									
	Control year (HurricaneYear=0)					*Hurricane year (HurricaneYear=1)*				
	Mean	Min	Max	SD	N	Mean	Min	Max	SD	N
Food grocery										
Bottled water										
Volume sold ('000 oz)	108.1	0.0	11047.7	248.6	545,886	117.3	0.0	9572.3	254.4	545,886
Unique UPC count sold (#)	48.0	1.0	202.0	39.2	545,886	49.0	1.0	207.0	40.9	545,886
Peanut butter										
Volume sold ('000 oz)	2.8	0.0	632.3	5.2	455,585	2.8	0.0	221.4	5.1	455,585
Unique UPC count sold (#)	17.1	1.0	89.0	20.5	455,585	18.5	1.0	96.0	22.2	455,585
Canned beans										
Volume sold ('000 oz)	3.2	0.0	111.0	4.0	228,908	3.4	0.0	148.0	4.2	228,908
Unique UPC count sold (#)	15.0	1.0	57.0	10.8	228,908	16.0	1.0	51.0	11.2	228,908
Dry pasta										
Volume sold ('000 oz)	6.2	0.0	403.3	11.2	402,035	6.4	0.0	409.4	11.6	402,035
Unique UPC count sold (#)	51.5	1.0	404.0	68.9	402,035	51.9	1.0	407.0	68.7	402,035
Bread										
Volume sold ('000 oz)	16.4	0.0	715.7	29.2	491,844	16.1	0.0	737.3	28.7	491,844
Unique UPC count sold (#)	50.9	1.0	354.0	76.5	491,844	51.3	1.0	372.0	77.4	491,844
Non-food grocery										
Toilet paper										
Volume sold ('000 roll count)	2.9	0.0	128.8	4.3	535,953	2.9	0.0	140.0	4.3	535,953
Unique UPC count sold (#)	25.4	1.0	81.0	14.4	535,953	25.9	1.0	75.0	14.9	535,953

SD = Standard deviation

N = Number of store-week-year observations

Table B-4: Regression results of retailer volume and UPC count sold around Sandy 2012 using pooled store sample for bottled water

Relative week (t)	Independent variable	Dependent variable (1) ln(Volume)	Dependent variable (2) ln(UPC count)	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0148	-0.0231***	
		(0.012)	(0.003)	
-10	1.threat#2.hweek#1.huryear	-0.131***	-0.0252***	
		(0.016)	(0.004)	
-9	1.threat#3.hweek#1.huryear	0.0126	0.0000237	
		(0.011)	(0.004)	
-8	1.threat#4.hweek#1.huryear	0.0190	0.00432	
		(0.014)	(0.003)	
-7	1.threat#5.hweek#1.huryear	0.00209	0.00481	
		(0.013)	(0.003)	
-6	1.threat#6.hweek#1.huryear	0.0448***	-0.00642*	
		(0.012)	(0.003)	
-5	1.threat#7.hweek#1.huryear	-0.0328**	-0.00686*	
		(0.013)	(0.003)	
-4	1.threat#8.hweek#1.huryear	-0.00928	-0.0202***	
		(0.013)	(0.003)	
-3	1.threat#9.hweek#1.huryear	-0.0668***	-0.0292***	
		(0.013)	(0.003)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.505***	0.0783***	
		(0.017)	(0.003)	
0	1.threat#12.hweek#1.huryear	0.388***	0.00103	Sandy week
		(0.010)	(0.003)	
1	1.threat#13.hweek#1.huryear	-0.224***	-0.0841***	
		(0.013)	(0.004)	
2	1.threat#14.hweek#1.huryear	-0.0898***	-0.0406***	
		(0.012)	(0.004)	
3	1.threat#15.hweek#1.huryear	-0.118***	-0.0307***	
		(0.026)	(0.005)	
4	1.threat#16.hweek#1.huryear	-0.0376	-0.0240***	
		(0.022)	(0.005)	
5	1.threat#17.hweek#1.huryear	0.0184	-0.00805**	
		(0.012)	(0.003)	
6	1.threat#18.hweek#1.huryear	0.106***	0.0000733	
		(0.012)	(0.004)	
7	1.threat#19.hweek#1.huryear	0.0274**	-0.0180**	
		(0.010)	(0.008)	
8	1.threat#20.hweek#1.huryear	-0.0498***	-0.0296***	
		(0.013)	(0.003)	
	1.threat#1.huryear	-0.0673***	0.00638	
		(0.016)	(0.004)	
	1.threat	0.250***	0.130**	
		(0.085)	(0.053)	
	1.huryear	0.124***	0.0257***	
		(0.025)	(0.005)	
	wk_thg	-0.0613	-0.00409	Thanksgiving week
		(0.057)	(0.005)	
	wk_eoy	-0.0175	0.00793**	End-of-year week
		(0.025)	(0.003)	
	irene	-0.119***	0.0394***	Irene 2011
		(0.023)	(0.004)	
	1.irene#34.wkcal	0.347***	0.00399	
		(0.024)	(0.004)	
	N	1035474	1035474	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-5: Regression results of retailer volume and UPC count sold around Sandy 2012 using pooled store sample for peanut butter

Relative week (t)	Independent variable	Dependent variable (1) ln(Volume)	Dependent variable (2) ln(UPC count)	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0627***	-0.0688***	
		(0.014)	(0.006)	
-10	1.threat#2.hweek#1.huryear	-0.252***	-0.127***	
		(0.013)	(0.006)	
-9	1.threat#3.hweek#1.huryear	-0.0931***	0.00526	
		(0.024)	(0.013)	
-8	1.threat#4.hweek#1.huryear	0.0964***	0.0287***	
		(0.016)	(0.007)	
-7	1.threat#5.hweek#1.huryear	0.0407**	0.00301	
		(0.017)	(0.010)	
-6	1.threat#6.hweek#1.huryear	0.0561**	-0.0348**	
		(0.022)	(0.013)	
-5	1.threat#7.hweek#1.huryear	-0.0354**	-0.0163*	
		(0.015)	(0.009)	
-4	1.threat#8.hweek#1.huryear	0.113***	-0.00528	
		(0.022)	(0.011)	
-3	1.threat#9.hweek#1.huryear	-0.00812	0.00273	
		(0.017)	(0.009)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.201***	0.0559***	
		(0.017)	(0.012)	
0	1.threat#12.hweek#1.huryear	0.505***	0.161***	Sandy week
		(0.026)	(0.015)	
1	1.threat#13.hweek#1.huryear	-0.0428**	-0.00774	
		(0.019)	(0.010)	
2	1.threat#14.hweek#1.huryear	-0.0361	-0.0928***	
		(0.035)	(0.017)	
3	1.threat#15.hweek#1.huryear	-0.00804	0.0417***	
		(0.031)	(0.011)	
4	1.threat#16.hweek#1.huryear	-0.0120	-0.0926***	
		(0.041)	(0.018)	
5	1.threat#17.hweek#1.huryear	-0.200***	-0.122***	
		(0.022)	(0.014)	
6	1.threat#18.hweek#1.huryear	0.00162	-0.0697***	
		(0.021)	(0.015)	
7	1.threat#19.hweek#1.huryear	-0.0393***	-0.0242**	
		(0.008)	(0.011)	
8	1.threat#20.hweek#1.huryear	-0.00928	-0.0457***	
		(0.016)	(0.008)	
	1.threat#1.huryear	0.0198	0.0747***	
		(0.020)	(0.012)	
	1.threat	0.130	-0.0441	
		(0.120)	(0.080)	
	1.huryear	-0.0158	0.0456***	
		(0.042)	(0.015)	
	wk_thg	-0.152*	-0.0457***	Thanksgiving week
		(0.078)	(0.010)	
	wk_eoy	0.178***	0.0588***	End-of-year week
		(0.040)	(0.012)	
	irene	0.137***	0.0723***	Irene 2011
		(0.032)	(0.014)	
	1.irene#34.wkcal	0.225***	0.182***	
		(0.036)	(0.021)	
	N	899098	899098	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-6: Regression results of retailer volume and UPC count sold around Sandy 2012 using pooled store sample for canned beans

Relative week (t)	Independent variable	Dependent variable (1) ln(Volume)	Dependent variable (2) ln(UPC count)	Remarks
-11	1.threat#1.hweek#1.huryear	0.114***	-0.0222***	
		(0.013)	(0.006)	
-10	1.threat#2.hweek#1.huryear	-0.103***	-0.122***	
		(0.014)	(0.009)	
-9	1.threat#3.hweek#1.huryear	0.105***	-0.0241*	
		(0.024)	(0.013)	
-8	1.threat#4.hweek#1.huryear	-0.00148	-0.0606***	
		(0.017)	(0.008)	
-7	1.threat#5.hweek#1.huryear	0.0348***	-0.0181***	
		(0.011)	(0.005)	
-6	1.threat#6.hweek#1.huryear	-0.0692***	-0.0468***	
		(0.013)	(0.006)	
-5	1.threat#7.hweek#1.huryear	-0.00621	-0.0427***	
		(0.012)	(0.006)	
-4	1.threat#8.hweek#1.huryear	-0.0679***	-0.0260***	
		(0.011)	(0.005)	
-3	1.threat#9.hweek#1.huryear	0.0177*	-0.0129**	
		(0.010)	(0.005)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0160	-0.0426***	
		(0.015)	(0.007)	
0	1.threat#12.hweek#1.huryear	0.128***	0.0147*	Sandy week
		(0.012)	(0.007)	
1	1.threat#13.hweek#1.huryear	-0.0417***	-0.0383***	
		(0.013)	(0.008)	
2	1.threat#14.hweek#1.huryear	-0.0726***	-0.0405***	
		(0.015)	(0.010)	
3	1.threat#15.hweek#1.huryear	-0.0826***	-0.0698***	
		(0.020)	(0.009)	
4	1.threat#16.hweek#1.huryear	0.0427**	0.0305***	
		(0.019)	(0.007)	
5	1.threat#17.hweek#1.huryear	-0.0822***	-0.0224***	
		(0.011)	(0.006)	
6	1.threat#18.hweek#1.huryear	-0.0335**	-0.00976	
		(0.013)	(0.008)	
7	1.threat#19.hweek#1.huryear	-0.0975***	-0.0317***	
		(0.020)	(0.007)	
8	1.threat#20.hweek#1.huryear	-0.0354*	-0.00322	
		(0.020)	(0.008)	
	1.threat#1.huryear	-0.0344***	0.00896*	
		(0.012)	(0.005)	
	1.threat	0.0453	-0.0429	
		(0.132)	(0.079)	
	1.huryear	0.0640***	0.0739***	
		(0.015)	(0.004)	
	wk_thg	0.0485***	0.0182***	Thanksgiving week
		(0.015)	(0.004)	
	wk_eoy	0.0259**	0.000468	End-of-year week
		(0.009)	(0.001)	
	irene	0.336***	0.104***	Irene 2011
		(0.007)	(0.004)	
	1.irene#34.wkcal	-0.456***	-0.0112	
		(0.027)	(0.017)	
	N	457816	457816	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-7: Regression results of retailer volume and UPC count sold around Sandy 2012 using pooled store sample for toilet paper

Relative week (t)	Independent variable	Dependent variable (1) ln(Volume)	Dependent variable (2) ln(UPC count)	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0258***	-0.0103***	
		(0.008)	(0.002)	
-10	1.threat#2.hweek#1.huryear	-0.0635***	-0.00605***	
		(0.008)	(0.002)	
-9	1.threat#3.hweek#1.huryear	-0.0734***	0.00475	
		(0.006)	(0.005)	
-8	1.threat#4.hweek#1.huryear	-0.00168	0.000227	
		(0.008)	(0.003)	
-7	1.threat#5.hweek#1.huryear	-0.0203**	0.00538	
		(0.008)	(0.003)	
-6	1.threat#6.hweek#1.huryear	-0.000917	-0.0151***	
		(0.007)	(0.004)	
-5	1.threat#7.hweek#1.huryear	-0.0444***	-0.00679**	
		(0.008)	(0.003)	
-4	1.threat#8.hweek#1.huryear	-0.0568***	0.0131***	
		(0.009)	(0.004)	
-3	1.threat#9.hweek#1.huryear	-0.0829***	0.00562**	
		(0.008)	(0.002)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.147***	0.0360***	
		(0.008)	(0.002)	
0	1.threat#12.hweek#1.huryear	-0.0362***	0.0101***	Sandy week
		(0.008)	(0.002)	
1	1.threat#13.hweek#1.huryear	-0.0461***	0.00294	
		(0.008)	(0.003)	
2	1.threat#14.hweek#1.huryear	-0.00112	0.0120***	
		(0.008)	(0.003)	
3	1.threat#15.hweek#1.huryear	0.0408***	0.00923*	
		(0.009)	(0.005)	
4	1.threat#16.hweek#1.huryear	-0.000898	0.0177***	
		(0.008)	(0.005)	
5	1.threat#17.hweek#1.huryear	-0.0358***	0.0237***	
		(0.007)	(0.003)	
6	1.threat#18.hweek#1.huryear	-0.0229**	-0.00490*	
		(0.008)	(0.002)	
7	1.threat#19.hweek#1.huryear	-0.0221**	0.0109***	
		(0.009)	(0.003)	
8	1.threat#20.hweek#1.huryear	-0.0391***	-0.00503**	
		(0.009)	(0.002)	
	1.threat#1.huryear	-0.00464	-0.0201***	
		(0.010)	(0.003)	
	1.threat	-0.165***	-0.0445*	
		(0.057)	(0.025)	
	1.huryear	-0.0339***	0.0186***	
		(0.010)	(0.006)	
	wk_thg	-0.0107***	-0.00862	Thanksgiving week
		(0.000)	(0.016)	
	wk_eoy	-0.0433***	0.0159***	End-of-year week
		(0.008)	(0.005)	
	irene	-0.361***	-0.0555***	Irene 2011
		(0.008)	(0.004)	
	1.irene#34.wkcal	0.141***	0.0912***	
		(0.011)	(0.007)	
	N	1033106	1033106	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-8: Regression results of retailer volume and UPC count sold around Sandy 2012 using pooled store sample for dry pasta

Relative week (t)	Independent variable	Dependent variable (1) ln(Volume)	(2) ln(UPC count)	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0191	0.0131*	
		(0.015)	(0.008)	
-10	1.threat#2.hweek#1.huryear	-0.111***	-0.0594***	
		(0.009)	(0.006)	
-9	1.threat#3.hweek#1.huryear	0.0380	0.0484**	
		(0.028)	(0.020)	
-8	1.threat#4.hweek#1.huryear	-0.0309**	0.00682	
		(0.013)	(0.005)	
-7	1.threat#5.hweek#1.huryear	-0.0807***	-0.0454***	
		(0.014)	(0.005)	
-6	1.threat#6.hweek#1.huryear	0.0345**	0.0296***	
		(0.013)	(0.006)	
-5	1.threat#7.hweek#1.huryear	0.139***	0.0639***	
		(0.012)	(0.005)	
-4	1.threat#8.hweek#1.huryear	-0.0354**	-0.0234***	
		(0.016)	(0.007)	
-3	1.threat#9.hweek#1.huryear	0.000609	0.0115*	
		(0.015)	(0.006)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.0126	-0.0199***	
		(0.011)	(0.005)	
0	1.threat#12.hweek#1.huryear	0.0131	-0.000591	Sandy week
		(0.033)	(0.012)	
1	1.threat#13.hweek#1.huryear	-0.0409***	0.00377	
		(0.011)	(0.004)	
2	1.threat#14.hweek#1.huryear	-0.0322**	0.00154	
		(0.013)	(0.005)	
3	1.threat#15.hweek#1.huryear	-0.0502***	-0.0114	
		(0.013)	(0.012)	
4	1.threat#16.hweek#1.huryear	-0.0638***	0.00922	
		(0.012)	(0.012)	
5	1.threat#17.hweek#1.huryear	-0.114***	-0.0367***	
		(0.011)	(0.004)	
6	1.threat#18.hweek#1.huryear	-0.0152	0.0177***	
		(0.011)	(0.005)	
7	1.threat#19.hweek#1.huryear	0.0410	0.0316**	
		(0.027)	(0.014)	
8	1.threat#20.hweek#1.huryear	0.0964***	0.0940***	
		(0.012)	(0.010)	
	1.threat#1.huryear	0.119***	-0.00773	
		(0.017)	(0.005)	
	1.threat	0.0978	0.0457	
		(0.170)	(0.123)	
	1.huryear	-0.174***	0.0142*	
		(0.015)	(0.007)	
	wk_thg	0.0487	0.000883	Thanksgiving week
		(0.056)	(0.019)	
	wk_eoy	-0.0912***	-0.0339***	End-of-year week
		(0.007)	(0.003)	
	irene	0.231***	0.122***	Irene 2011
		(0.023)	(0.017)	
	1.irene#34.wkcal	0.0169	0.107***	
		(0.045)	(0.036)	
	N	796632	796632	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-9: Regression results of retailer volume and UPC count sold around Sandy 2012 using pooled store sample for bread

Relative week (t)	Independent variable	Dependent variable (1) ln(Volume)	(2) ln(UPC count)	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0315***	0.00109	
		(0.010)	(0.006)	
-10	1.threat#2.hweek#1.huryear	-0.0535***	0.00957*	
		(0.009)	(0.005)	
-9	1.threat#3.hweek#1.huryear	0.0134	0.0387**	
		(0.022)	(0.017)	
-8	1.threat#4.hweek#1.huryear	0.00143	0.00460	
		(0.010)	(0.006)	
-7	1.threat#5.hweek#1.huryear	0.0106	0.00758	
		(0.010)	(0.006)	
-6	1.threat#6.hweek#1.huryear	0.0105	0.00220	
		(0.010)	(0.006)	
-5	1.threat#7.hweek#1.huryear	0.0171	0.00264	
		(0.011)	(0.006)	
-4	1.threat#8.hweek#1.huryear	0.0164	-0.00112	
		(0.010)	(0.006)	
-3	1.threat#9.hweek#1.huryear	0.0302***	0.0158**	
		(0.010)	(0.006)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.210***	0.0399***	
		(0.010)	(0.006)	
0	1.threat#12.hweek#1.huryear	0.0675***	0.00648	Sandy week
		(0.013)	(0.006)	
1	1.threat#13.hweek#1.huryear	0.0206	-0.000467	
		(0.015)	(0.006)	
2	1.threat#14.hweek#1.huryear	-0.0198*	-0.0166**	
		(0.011)	(0.006)	
3	1.threat#15.hweek#1.huryear	-0.0428**	-0.0507***	
		(0.015)	(0.008)	
4	1.threat#16.hweek#1.huryear	0.0281*	0.0216**	
		(0.015)	(0.009)	
5	1.threat#17.hweek#1.huryear	0.0640***	0.0154**	
		(0.011)	(0.007)	
6	1.threat#18.hweek#1.huryear	0.0964***	0.0194**	
		(0.011)	(0.007)	
7	1.threat#19.hweek#1.huryear	0.0888***	0.0327**	
		(0.017)	(0.013)	
8	1.threat#20.hweek#1.huryear	0.0382***	-0.00922	
		(0.011)	(0.007)	
	1.threat#1.huryear	-0.0176	0.0116*	
		(0.011)	(0.006)	
	1.threat	0.172	0.153	
		(0.136)	(0.104)	
	1.huryear	-0.0212*	-0.0187*	
		(0.012)	(0.010)	
	wk_thg	0.0378	0.0345	Thanksgiving week
		(0.065)	(0.031)	
	wk_eoy	-0.0854***	-0.0605***	End-of-year week
		(0.007)	(0.007)	
	irene	-0.0243	0.163***	Irene 2011
		(0.020)	(0.011)	
	1.irene#34.wkcal	0.260***	0.0373	
		(0.037)	(0.028)	
	N	936160	936160	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-10: Regression results of volume sold around Sandy 2012 across retail channels for bottled water

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	0.0403***	-0.0176	-0.101***	
		(0.009)	(0.011)	(0.019)	
-10	1.threat#2.hweek#1.huryear	-0.0619***	-0.163***	-0.164***	
		(0.014)	(0.016)	(0.023)	
-9	1.threat#3.hweek#1.huryear	0.0301**	-0.0119	0.0112	
		(0.012)	(0.011)	(0.013)	
-8	1.threat#4.hweek#1.huryear	0.0934***	0.120***	-0.137***	
		(0.010)	(0.014)	(0.021)	
-7	1.threat#5.hweek#1.huryear	0.0372***	-0.00392	-0.0188	
		(0.010)	(0.010)	(0.023)	
-6	1.threat#6.hweek#1.huryear	-0.0122	0.0220**	0.0364*	
		(0.011)	(0.010)	(0.020)	
-5	1.threat#7.hweek#1.huryear	-0.0538***	-0.0282**	-0.0236	
		(0.011)	(0.011)	(0.023)	
-4	1.threat#8.hweek#1.huryear	-0.0155	-0.00647	0.0190	
		(0.011)	(0.010)	(0.023)	
-3	1.threat#9.hweek#1.huryear	-0.0876***	-0.0772***	-0.0296	
		(0.011)	(0.010)	(0.023)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.606***	0.394***	0.453***	
		(0.023)	(0.014)	(0.025)	
0	1.threat#12.hweek#1.huryear	0.311***	0.532***	0.346***	Sandy week
		(0.011)	(0.016)	(0.025)	
1	1.threat#13.hweek#1.huryear	-0.0802***	-0.137***	-0.363***	
		(0.014)	(0.010)	(0.032)	
2	1.threat#14.hweek#1.huryear	-0.0655***	-0.0546***	-0.137***	
		(0.012)	(0.010)	(0.025)	
3	1.threat#15.hweek#1.huryear	-0.0636***	-0.0407***	-0.322***	
		(0.012)	(0.009)	(0.022)	
4	1.threat#16.hweek#1.huryear	-0.0257**	-0.0199*	0.00509	
		(0.011)	(0.011)	(0.022)	
5	1.threat#17.hweek#1.huryear	0.0348***	-0.0109	0.0233	
		(0.010)	(0.009)	(0.023)	
6	1.threat#18.hweek#1.huryear	0.00655	0.0544***	0.180***	
		(0.011)	(0.009)	(0.023)	
7	1.threat#19.hweek#1.huryear	0.0235**	0.0508***	0.0282*	
		(0.009)	(0.008)	(0.015)	
8	1.threat#20.hweek#1.huryear	-0.0246**	0.0831***	-0.196***	
		(0.011)	(0.009)	(0.022)	
	1.threat#1.huryear	-0.0425***	-0.0372***	-0.0767*	
		(0.013)	(0.011)	(0.038)	
	1.threat	0.495***	0.304***	0.0112	
		(0.086)	(0.056)	(0.119)	
	1.huryear	0.145***	0.0907***	0.124**	
		(0.017)	(0.019)	(0.059)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0419**	0.0306	-0.0315	End-of-year week
		(0.016)	(0.018)	(0.056)	
	irene	-0.217***	0.296***	-0.495***	Irene 2011
		(0.019)	(0.022)	(0.034)	
	1.irene#34.wkcal	0.508***	-0.647***	0.621***	
		(0.024)	(0.030)	(0.046)	
	N	343976	289266	402232	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-11: Regression results of volume sold around Sandy 2012 across retail channels for peanut butter

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	0.0412***	0.0286**	-0.0766*	
		(0.011)	(0.011)	(0.038)	
-10	1.threat#2.hweek#1.huryear	-0.0681***	-0.00134	-0.629***	
		(0.013)	(0.009)	(0.045)	
-9	1.threat#3.hweek#1.huryear	0.0532***	0.0969***	-0.826***	
		(0.015)	(0.011)	(0.051)	
-8	1.threat#4.hweek#1.huryear	0.104***	0.122***	0.0527	
		(0.010)	(0.009)	(0.059)	
-7	1.threat#5.hweek#1.huryear	0.0721***	0.0832***	0.00759	
		(0.011)	(0.009)	(0.060)	
-6	1.threat#6.hweek#1.huryear	0.0341**	0.0470***	0.297***	
		(0.013)	(0.010)	(0.033)	
-5	1.threat#7.hweek#1.huryear	-0.0485***	0.159***	-0.395***	
		(0.012)	(0.007)	(0.033)	
-4	1.threat#8.hweek#1.huryear	0.0296**	0.0442***	0.467***	
		(0.013)	(0.009)	(0.035)	
-3	1.threat#9.hweek#1.huryear	-0.00536	-0.0319***	0.0276	
		(0.012)	(0.009)	(0.069)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.378***	0.349***	-0.0535	
		(0.019)	(0.013)	(0.050)	
0	1.threat#12.hweek#1.huryear	0.399***	0.499***	0.632***	Sandy week
		(0.010)	(0.016)	(0.032)	
1	1.threat#13.hweek#1.huryear	0.0548***	0.0741***	-0.430***	
		(0.013)	(0.008)	(0.053)	
2	1.threat#14.hweek#1.huryear	0.0656***	0.116***	0.0352	
		(0.013)	(0.007)	(0.069)	
3	1.threat#15.hweek#1.huryear	0.0413***	0.116***	-0.718***	
		(0.013)	(0.008)	(0.032)	
4	1.threat#16.hweek#1.huryear	0.00692	0.117***	0.424***	
		(0.014)	(0.008)	(0.043)	
5	1.threat#17.hweek#1.huryear	0.0745***	0.0704***	-0.316***	
		(0.014)	(0.006)	(0.042)	
6	1.threat#18.hweek#1.huryear	0.143***	0.0963***	0.0368	
		(0.016)	(0.006)	(0.035)	
7	1.threat#19.hweek#1.huryear	0.0393**	0.112***	-0.284***	
		(0.017)	(0.007)	(0.065)	
8	1.threat#20.hweek#1.huryear	0.0418**	0.174***	-0.0537	
		(0.015)	(0.005)	(0.040)	
	1.threat#1.huryear	-0.136***	-0.112***	0.275**	
		(0.018)	(0.008)	(0.114)	
	1.threat	0.445***	0.151***	-0.0955	
		(0.068)	(0.051)	(0.100)	
	1.huryear	0.170***	0.00714	-0.284*	
		(0.021)	(0.021)	(0.143)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0433**	0.0898***	0.460***	End-of-year week
		(0.020)	(0.022)	(0.135)	
	irene	0.0646***	0.230***	-0.678***	Irene 2011
		(0.019)	(0.018)	(0.095)	
	1.irene#34.wkcal	0.126***	-0.630***	0.971***	
		(0.025)	(0.019)	(0.075)	
	N	324428	287670	287000	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-12: Regression results of volume sold around Sandy 2012 across retail channels for canned beans

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	0.0428**	0.212***	0.245***	
		(0.015)	(0.011)	(0.065)	
-10	1.threat#2.hweek#1.huryear	-0.0879***	0.103***	-0.00488	
		(0.015)	(0.012)	(0.057)	
-9	1.threat#3.hweek#1.huryear	0.0502**	0.164***	0.268***	
		(0.023)	(0.011)	(0.047)	
-8	1.threat#4.hweek#1.huryear	-0.0330**	0.0878***	0.168***	
		(0.016)	(0.012)	(0.039)	
-7	1.threat#5.hweek#1.huryear	0.0755***	0.0387***	0.106*	
		(0.016)	(0.012)	(0.052)	
-6	1.threat#6.hweek#1.huryear	0.00866	-0.00625	-0.123**	
		(0.015)	(0.012)	(0.050)	
-5	1.threat#7.hweek#1.huryear	-0.0108	0.0563***	-0.0340	
		(0.018)	(0.012)	(0.051)	
-4	1.threat#8.hweek#1.huryear	-0.0275*	-0.0935***	0.0618***	
		(0.015)	(0.013)	(0.019)	
-3	1.threat#9.hweek#1.huryear	0.0280*	0.0290**	-0.0276	
		(0.015)	(0.010)	(0.043)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0862***	0.0776***	0.192***	
		(0.018)	(0.013)	(0.067)	
0	1.threat#12.hweek#1.huryear	0.194***	0.110***	0.486***	Sandy week
		(0.017)	(0.010)	(0.081)	
1	1.threat#13.hweek#1.huryear	0.0298*	-0.0527***	0.206***	
		(0.014)	(0.011)	(0.043)	
2	1.threat#14.hweek#1.huryear	-0.00719	-0.0659***	0.0724***	
		(0.013)	(0.011)	(0.023)	
3	1.threat#15.hweek#1.huryear	0.0128	-0.0106	0.0141	
		(0.016)	(0.011)	(0.058)	
4	1.threat#16.hweek#1.huryear	-0.00214	-0.0509***	0.207***	
		(0.017)	(0.013)	(0.055)	
5	1.threat#17.hweek#1.huryear	-0.0868***	-0.0911***	0.0923**	
		(0.014)	(0.012)	(0.033)	
6	1.threat#18.hweek#1.huryear	0.0692***	-0.0708***	0.0669	
		(0.017)	(0.011)	(0.049)	
7	1.threat#19.hweek#1.huryear	0.00715	-0.107***	-0.0224	
		(0.015)	(0.011)	(0.044)	
8	1.threat#20.hweek#1.huryear	0.0143	-0.0930***	0.246***	
		(0.018)	(0.012)	(0.046)	
	1.threat#1.huryear	-0.110***	-0.0360*	-0.318***	
		(0.018)	(0.018)	(0.032)	
	1.threat	0.330***	-0.189***	-0.171	
		(0.095)	(0.056)	(0.120)	
	1.huryear	0.0459**	0.0643***	0.139***	
		(0.021)	(0.016)	(0.040)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0137	0.0470***	-0.104***	End-of-year week
		(0.014)	(0.014)	(0.013)	
	irene	0.138***	0.131***	0.0679**	Irene 2011
		(0.012)	(0.014)	(0.027)	
	1.irene#34.wkcal	-0.0558**	-0.696***	-0.186**	
		(0.026)	(0.022)	(0.088)	
	N	156040	287608	14168	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-13: Regression results of volume sold around Sandy 2012 across retail channels for toilet paper

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	0.0276***	0.00596	-0.0506***	
		(0.006)	(0.010)	(0.017)	
-10	1.threat#2.hweek#1.huryear	0.0274***	-0.0884***	-0.108***	
		(0.006)	(0.007)	(0.018)	
-9	1.threat#3.hweek#1.huryear	-0.00347	-0.0238**	-0.0882***	
		(0.005)	(0.009)	(0.016)	
-8	1.threat#4.hweek#1.huryear	0.0678***	0.0190**	-0.0219	
		(0.006)	(0.007)	(0.016)	
-7	1.threat#5.hweek#1.huryear	-0.00753	-0.0423***	-0.000683	
		(0.006)	(0.007)	(0.021)	
-6	1.threat#6.hweek#1.huryear	0.0239***	0.00689	-0.0105	
		(0.006)	(0.005)	(0.018)	
-5	1.threat#7.hweek#1.huryear	-0.0240***	-0.0214**	-0.0528**	
		(0.006)	(0.007)	(0.019)	
-4	1.threat#8.hweek#1.huryear	0.0159**	-0.0302***	-0.0828***	
		(0.006)	(0.008)	(0.017)	
-3	1.threat#9.hweek#1.huryear	0.0112*	-0.00922	-0.169***	
		(0.006)	(0.008)	(0.020)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0922***	0.127***	0.197***	
		(0.005)	(0.009)	(0.018)	
0	1.threat#12.hweek#1.huryear	-0.161***	0.0752***	0.0260	Sandy week
		(0.006)	(0.010)	(0.019)	
1	1.threat#13.hweek#1.huryear	0.00471	-0.0764***	-0.0343*	
		(0.006)	(0.007)	(0.017)	
2	1.threat#14.hweek#1.huryear	-0.0633***	-0.0164**	0.0853***	
		(0.006)	(0.006)	(0.022)	
3	1.threat#15.hweek#1.huryear	-0.0228***	0.0244***	0.0284	
		(0.006)	(0.005)	(0.021)	
4	1.threat#16.hweek#1.huryear	-0.0741***	-0.0401***	0.143***	
		(0.006)	(0.008)	(0.018)	
5	1.threat#17.hweek#1.huryear	0.0319***	-0.0310***	-0.0161	
		(0.006)	(0.007)	(0.017)	
6	1.threat#18.hweek#1.huryear	-0.0363***	-0.0189**	0.0344*	
		(0.006)	(0.008)	(0.018)	
7	1.threat#19.hweek#1.huryear	-0.0393***	0.0236***	0.0198	
		(0.004)	(0.007)	(0.018)	
8	1.threat#20.hweek#1.huryear	-0.140***	0.0213***	-0.00208	
		(0.006)	(0.007)	(0.018)	
	1.threat#1.huryear	-0.0225**	-0.0492***	0.0348	
		(0.008)	(0.007)	(0.021)	
	1.threat	0.143***	0.217***	-0.238*	
		(0.049)	(0.049)	(0.117)	
	1.huryear	0.00744	0.00479	-0.103***	
		(0.016)	(0.012)	(0.031)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0251	-0.0406***	-0.0690**	End-of-year week
		(0.015)	(0.011)	(0.025)	
	irene	-0.125***	0.00714	-0.585***	Irene 2011
		(0.007)	(0.008)	(0.033)	
	1.irene#34.wkcal	-0.0613***	-0.491***	0.288***	
		(0.009)	(0.019)	(0.035)	
	N	343740	287662	401704	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-14: Regression results of volume sold around Sandy 2012 across retail channels for dry pasta

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	0.0705***	-0.0297***	-0.303***	
		(0.010)	(0.010)	(0.012)	
-10	1.threat#2.hweek#1.huryear	0.0443***	-0.0976***	-0.166***	
		(0.010)	(0.010)	(0.039)	
-9	1.threat#3.hweek#1.huryear	0.0347***	0.0749***	-0.329***	
		(0.010)	(0.012)	(0.025)	
-8	1.threat#4.hweek#1.huryear	0.0719***	0.00414	-0.293***	
		(0.011)	(0.009)	(0.014)	
-7	1.threat#5.hweek#1.huryear	0.0756***	0.0390***	-0.364***	
		(0.010)	(0.010)	(0.014)	
-6	1.threat#6.hweek#1.huryear	0.0323**	-0.0210**	-0.0323	
		(0.012)	(0.009)	(0.021)	
-5	1.threat#7.hweek#1.huryear	0.0501***	0.0953***	0.0212***	
		(0.011)	(0.014)	(0.004)	
-4	1.threat#8.hweek#1.huryear	0.0372***	0.0306***	-0.188***	
		(0.011)	(0.009)	(0.026)	
-3	1.threat#9.hweek#1.huryear	0.0903***	-0.0132	-0.195***	
		(0.011)	(0.009)	(0.026)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.176***	0.120***	-0.267***	
		(0.014)	(0.013)	(0.030)	
0	1.threat#12.hweek#1.huryear	0.0600***	0.0651***	0.129	Sandy week
		(0.011)	(0.011)	(0.076)	
1	1.threat#13.hweek#1.huryear	0.125***	-0.106***	-0.224***	
		(0.011)	(0.009)	(0.028)	
2	1.threat#14.hweek#1.huryear	0.00159	-0.00547	-0.259***	
		(0.011)	(0.012)	(0.019)	
3	1.threat#15.hweek#1.huryear	0.0593***	-0.0447***	-0.151***	
		(0.013)	(0.010)	(0.029)	
4	1.threat#16.hweek#1.huryear	-0.0562***	-0.0982***	-0.277***	
		(0.009)	(0.010)	(0.016)	
5	1.threat#17.hweek#1.huryear	-0.00482	-0.104***	-0.314***	
		(0.010)	(0.008)	(0.027)	
6	1.threat#18.hweek#1.huryear	0.00937	-0.0458***	-0.259***	
		(0.012)	(0.008)	(0.023)	
7	1.threat#19.hweek#1.huryear	0.0558***	0.0298**	-0.155***	
		(0.010)	(0.013)	(0.022)	
8	1.threat#20.hweek#1.huryear	0.0772***	-0.000185	-0.446***	
		(0.012)	(0.009)	(0.048)	
	1.threat#1.huryear	0.0791***	-0.0287*	0.226***	
		(0.014)	(0.015)	(0.023)	
	1.threat	0.322***	0.471***	0.167*	
		(0.046)	(0.056)	(0.087)	
	1.huryear	-0.500***	0.0549***	0.118***	
		(0.017)	(0.016)	(0.037)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.110***	-0.137***	0.00640	End-of-year week
		(0.010)	(0.013)	(0.038)	
	irene	0.0709***	0.305***	0.0609*	Irene 2011
		(0.006)	(0.017)	(0.032)	
	1.irene#34.wkcal	-0.145***	-0.749***	-0.118***	
		(0.014)	(0.043)	(0.024)	
	N	337328	287678	171626	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-15: Regression results of volume sold around Sandy 2012 across retail channels for bread

Relative week (t)	Independent variable	Dependent variable: ln(Volume) (1) Mass merchandiser	(2) Food grocer	(3) Drug store	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0173**	-0.0523***	-0.0329**	
		(0.008)	(0.006)	(0.012)	
-10	1.threat#2.hweek#1.huryear	-0.0222**	-0.111***	-0.0967***	
		(0.010)	(0.006)	(0.014)	
-9	1.threat#3.hweek#1.huryear	0.0167	-0.0201***	-0.0602***	
		(0.011)	(0.005)	(0.020)	
-8	1.threat#4.hweek#1.huryear	0.0137*	-0.0267***	0.0158	
		(0.008)	(0.005)	(0.014)	
-7	1.threat#5.hweek#1.huryear	0.0279***	-0.00745	0.00180	
		(0.009)	(0.004)	(0.014)	
-6	1.threat#6.hweek#1.huryear	0.0191**	0.0205***	-0.00899	
		(0.008)	(0.005)	(0.014)	
-5	1.threat#7.hweek#1.huryear	0.00761	0.0138***	0.0253*	
		(0.009)	(0.004)	(0.013)	
-4	1.threat#8.hweek#1.huryear	0.0117	-0.0251***	0.0404***	
		(0.008)	(0.004)	(0.014)	
-3	1.threat#9.hweek#1.huryear	0.0179**	-0.0139***	0.0546***	
		(0.008)	(0.004)	(0.014)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.194***	0.171***	0.260***	
		(0.009)	(0.003)	(0.015)	
0	1.threat#12.hweek#1.huryear	-0.0905***	0.144***	0.0871***	Sandy week
		(0.016)	(0.006)	(0.022)	
1	1.threat#13.hweek#1.huryear	-0.0123	-0.0426***	0.0660***	
		(0.009)	(0.004)	(0.017)	
2	1.threat#14.hweek#1.huryear	-0.0209**	-0.0153***	-0.0307	
		(0.010)	(0.004)	(0.019)	
3	1.threat#15.hweek#1.huryear	-0.00995	0.0383***	-0.155***	
		(0.011)	(0.005)	(0.025)	
4	1.threat#16.hweek#1.huryear	-0.0169*	-0.00423	-0.0703**	
		(0.009)	(0.004)	(0.029)	
5	1.threat#17.hweek#1.huryear	0.0105	-0.0141***	0.0527**	
		(0.009)	(0.004)	(0.024)	
6	1.threat#18.hweek#1.huryear	0.0196**	-0.0122***	0.0961***	
		(0.008)	(0.004)	(0.021)	
7	1.threat#19.hweek#1.huryear	0.00966	0.00602	0.0877***	
		(0.010)	(0.004)	(0.019)	
8	1.threat#20.hweek#1.huryear	-0.0153	0.0529***	-0.120***	
		(0.010)	(0.004)	(0.020)	
	1.threat#1.huryear	-0.0736***	-0.0281***	0.118***	
		(0.013)	(0.004)	(0.021)	
	1.threat	0.470***	0.0983**	-0.198***	
		(0.075)	(0.038)	(0.069)	
	1.huryear	0.102***	-0.0244***	-0.163***	
		(0.008)	(0.008)	(0.030)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0263***	-0.0230***	-0.174***	End-of-year week
		(0.002)	(0.006)	(0.026)	
	irene	-0.0667***	0.0399***	-0.590***	Irene 2011
		(0.009)	(0.007)	(0.025)	
	1.irene#34.wkcal	0.182***	-0.433***	0.406***	
		(0.022)	(0.018)	(0.021)	
	N	324184	287684	324292	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-16: Regression results of unique UPC sold around Sandy 2012 across retail channels for bottled water

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	-0.0307***	-0.0247***	-0.0150***	
		(0.005)	(0.003)	(0.003)	
-10	1.threat#2.hweek#1.huryear	-0.0494***	-0.0447***	-0.0192***	
		(0.005)	(0.003)	(0.005)	
-9	1.threat#3.hweek#1.huryear	-0.0290***	-0.0160***	-0.00589	
		(0.008)	(0.004)	(0.005)	
-8	1.threat#4.hweek#1.huryear	-0.0207***	-0.00715**	0.0299***	
		(0.005)	(0.003)	(0.004)	
-7	1.threat#5.hweek#1.huryear	-0.0122**	-0.00870***	0.0263***	
		(0.005)	(0.003)	(0.003)	
-6	1.threat#6.hweek#1.huryear	-0.0202***	-0.00206	-0.00167	
		(0.005)	(0.003)	(0.004)	
-5	1.threat#7.hweek#1.huryear	-0.0108**	-0.00158	-0.00267	
		(0.005)	(0.003)	(0.004)	
-4	1.threat#8.hweek#1.huryear	-0.0256***	-0.00546	-0.0206***	
		(0.005)	(0.003)	(0.003)	
-3	1.threat#9.hweek#1.huryear	-0.0217***	-0.0127***	-0.0382***	
		(0.005)	(0.003)	(0.003)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0847***	0.0487***	0.0971***	
		(0.005)	(0.004)	(0.004)	
0	1.threat#12.hweek#1.huryear	0.000728	0.0607***	-0.0296***	Sandy week
		(0.005)	(0.004)	(0.006)	
1	1.threat#13.hweek#1.huryear	-0.0749***	-0.0533***	-0.106***	
		(0.005)	(0.004)	(0.007)	
2	1.threat#14.hweek#1.huryear	-0.0375***	-0.0178***	-0.0496***	
		(0.005)	(0.004)	(0.007)	
3	1.threat#15.hweek#1.huryear	-0.0248***	0.00481	-0.0532***	
		(0.005)	(0.005)	(0.004)	
4	1.threat#16.hweek#1.huryear	-0.0157***	0.0106**	-0.0386***	
		(0.005)	(0.004)	(0.004)	
5	1.threat#17.hweek#1.huryear	-0.00278	0.0109**	-0.0133***	
		(0.005)	(0.004)	(0.004)	
6	1.threat#18.hweek#1.huryear	0.00301	0.00794*	-0.00514	
		(0.005)	(0.004)	(0.003)	
7	1.threat#19.hweek#1.huryear	-0.0279***	0.00736	-0.0214**	
		(0.005)	(0.005)	(0.010)	
8	1.threat#20.hweek#1.huryear	-0.00888	0.0133***	-0.0740***	
		(0.006)	(0.004)	(0.003)	
	1.threat#1.huryear	-0.0177**	-0.00826*	0.0368***	
		(0.006)	(0.005)	(0.004)	
	1.threat	0.214***	0.0635**	-0.0333	
		(0.043)	(0.025)	(0.077)	
	1.huryear	0.0572***	0.0209***	-0.00497	
		(0.011)	(0.005)	(0.007)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0429***	0.0133***	-0.0220***	End-of-year week
		(0.009)	(0.003)	(0.004)	
	irene	0.0680***	0.0262***	-0.150***	Irene 2011
		(0.008)	(0.002)	(0.015)	
	1.irene#34.wkcal	-0.0902***	-0.160***	0.0901***	
		(0.012)	(0.011)	(0.016)	
	N	343976	289266	402232	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-17: Regression results of unique UPC sold around Sandy 2012 across retail channels for peanut butter

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	-0.0215***	0.0184***	-0.0893***	
		(0.007)	(0.003)	(0.017)	
-10	1.threat#2.hweek#1.huryear	-0.0414***	0.00627*	-0.320***	
		(0.007)	(0.003)	(0.021)	
-9	1.threat#3.hweek#1.huryear	0.0123	0.0178***	-0.232***	
		(0.009)	(0.004)	(0.014)	
-8	1.threat#4.hweek#1.huryear	0.0311***	0.0332***	0.0136	
		(0.007)	(0.003)	(0.029)	
-7	1.threat#5.hweek#1.huryear	0.0324***	0.0253***	-0.0252	
		(0.007)	(0.003)	(0.035)	
-6	1.threat#6.hweek#1.huryear	0.0146*	0.0318***	0.0269	
		(0.008)	(0.003)	(0.019)	
-5	1.threat#7.hweek#1.huryear	-0.00435	0.0293***	-0.166***	
		(0.007)	(0.003)	(0.023)	
-4	1.threat#8.hweek#1.huryear	0.00744	0.00861**	0.120***	
		(0.007)	(0.003)	(0.022)	
-3	1.threat#9.hweek#1.huryear	0.00695	-0.00159	0.0120	
		(0.008)	(0.004)	(0.036)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.117***	0.0534***	0.0306	
		(0.007)	(0.003)	(0.026)	
0	1.threat#12.hweek#1.huryear	0.150***	0.105***	0.267***	Sandy week
		(0.006)	(0.004)	(0.019)	
1	1.threat#13.hweek#1.huryear	0.0219**	0.0128***	-0.139***	
		(0.008)	(0.003)	(0.028)	
2	1.threat#14.hweek#1.huryear	0.0255***	0.0291***	-0.0950***	
		(0.007)	(0.003)	(0.029)	
3	1.threat#15.hweek#1.huryear	0.0317***	0.0420***	-0.172***	
		(0.007)	(0.004)	(0.022)	
4	1.threat#16.hweek#1.huryear	0.0118	0.0497***	0.0638**	
		(0.007)	(0.004)	(0.024)	
5	1.threat#17.hweek#1.huryear	0.0132*	0.0352***	-0.134***	
		(0.007)	(0.003)	(0.025)	
6	1.threat#18.hweek#1.huryear	0.0232***	0.0404***	-0.0524**	
		(0.008)	(0.003)	(0.019)	
7	1.threat#19.hweek#1.huryear	-0.00557	0.0248***	-0.103***	
		(0.006)	(0.004)	(0.022)	
8	1.threat#20.hweek#1.huryear	0.0507***	0.0486***	-0.0894***	
		(0.008)	(0.003)	(0.021)	
	1.threat#1.huryear	-0.0742***	-0.00348	0.252***	
		(0.008)	(0.004)	(0.042)	
	1.threat	0.185***	-0.0620**	-0.161**	
		(0.041)	(0.024)	(0.058)	
	1.huryear	0.162***	0.0456***	-0.108**	
		(0.009)	(0.006)	(0.048)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0401***	0.0300***	0.133***	End-of-year week
		(0.006)	(0.005)	(0.045)	
	irene	0.0352***	0.00385	-0.286***	Irene 2011
		(0.006)	(0.003)	(0.021)	
	1.irene#34.wkcal	0.0845***	-0.152***	0.397***	
		(0.012)	(0.006)	(0.016)	
	N	324428	287670	287000	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-18: Regression results of unique UPC sold around Sandy 2012 across retail channels for canned beans

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	-0.0178*	0.0232***	0.0555**	
		(0.010)	(0.003)	(0.022)	
-10	1.threat#2.hweek#1.huryear	-0.106***	-0.00210	-0.0203	
		(0.011)	(0.003)	(0.018)	
-9	1.threat#3.hweek#1.huryear	-0.0242**	-0.000430	0.0529***	
		(0.011)	(0.005)	(0.017)	
-8	1.threat#4.hweek#1.huryear	-0.102***	0.000282	0.0846***	
		(0.010)	(0.003)	(0.012)	
-7	1.threat#5.hweek#1.huryear	-0.0297***	0.00228	0.000460	
		(0.009)	(0.003)	(0.013)	
-6	1.threat#6.hweek#1.huryear	-0.0431***	0.00516	-0.00382	
		(0.011)	(0.003)	(0.019)	
-5	1.threat#7.hweek#1.huryear	-0.0931***	0.00907**	0.0365***	
		(0.010)	(0.004)	(0.010)	
-4	1.threat#8.hweek#1.huryear	-0.0620***	-0.00897**	0.0149	
		(0.009)	(0.003)	(0.013)	
-3	1.threat#9.hweek#1.huryear	-0.0408***	0.00487	0.0123	
		(0.012)	(0.003)	(0.015)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.0383***	0.0150***	0.0265**	
		(0.009)	(0.003)	(0.010)	
0	1.threat#12.hweek#1.huryear	0.00841	0.0452***	0.0552**	Sandy week
		(0.009)	(0.004)	(0.019)	
1	1.threat#13.hweek#1.huryear	-0.0466***	-0.0107***	0.0233**	
		(0.010)	(0.003)	(0.008)	
2	1.threat#14.hweek#1.huryear	-0.0369***	-0.0124***	-0.0107	
		(0.008)	(0.003)	(0.014)	
3	1.threat#15.hweek#1.huryear	-0.0548***	-0.00994***	0.0241	
		(0.011)	(0.003)	(0.015)	
4	1.threat#16.hweek#1.huryear	-0.0203**	-0.00284	0.0412**	
		(0.007)	(0.003)	(0.018)	
5	1.threat#17.hweek#1.huryear	-0.0520***	-0.00940***	0.00503	
		(0.006)	(0.003)	(0.014)	
6	1.threat#18.hweek#1.huryear	0.0109	-0.00825**	0.0302	
		(0.009)	(0.003)	(0.018)	
7	1.threat#19.hweek#1.huryear	-0.0190	-0.0109***	-0.0454**	
		(0.011)	(0.003)	(0.017)	
8	1.threat#20.hweek#1.huryear	-0.0242**	-0.00474	0.0625***	
		(0.011)	(0.003)	(0.017)	
	1.threat#1.huryear	0.00420	-0.00828**	-0.0695***	
		(0.010)	(0.004)	(0.014)	
	1.threat	0.181***	-0.224***	-0.129**	
		(0.059)	(0.023)	(0.058)	
	1.huryear	0.103***	0.0558***	-0.000202	
		(0.009)	(0.003)	(0.018)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.00813***	0.0114***	0.00490	End-of-year week
		(0.001)	(0.001)	(0.006)	
	irene	0.120***	-0.0902***	0.0270**	Irene 2011
		(0.007)	(0.001)	(0.011)	
	1.irene#34.wkcal	-0.0892***	-0.0413***	0.0109	
		(0.015)	(0.008)	(0.020)	
	N	156040	287608	14168	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-19: Regression results of unique UPC sold around Sandy 2012 across retail channels for toilet paper

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	-0.0133***	0.000767	-0.0113**	
		(0.003)	(0.002)	(0.005)	
-10	1.threat#2.hweek#1.huryear	-0.0174***	0.0120***	-0.0200***	
		(0.002)	(0.002)	(0.003)	
-9	1.threat#3.hweek#1.huryear	-0.0328***	0.0191***	0.0352***	
		(0.003)	(0.003)	(0.008)	
-8	1.threat#4.hweek#1.huryear	-0.0150***	0.00279	0.0154	
		(0.002)	(0.002)	(0.009)	
-7	1.threat#5.hweek#1.huryear	0.00179	0.00258	0.0134	
		(0.002)	(0.002)	(0.014)	
-6	1.threat#6.hweek#1.huryear	0.00653**	-0.0104***	-0.0249*	
		(0.003)	(0.002)	(0.014)	
-5	1.threat#7.hweek#1.huryear	-0.00267	-0.00371	-0.00981	
		(0.003)	(0.003)	(0.014)	
-4	1.threat#8.hweek#1.huryear	0.0104***	-0.00585**	0.0335	
		(0.002)	(0.003)	(0.019)	
-3	1.threat#9.hweek#1.huryear	0.00512*	-0.00818***	0.0164***	
		(0.003)	(0.003)	(0.005)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0329***	-0.0000658	0.0672***	
		(0.002)	(0.003)	(0.003)	
0	1.threat#12.hweek#1.huryear	-0.0130***	0.00515**	0.0361***	Sandy week
		(0.003)	(0.002)	(0.004)	
1	1.threat#13.hweek#1.huryear	0.0200***	-0.0357***	0.0256***	
		(0.002)	(0.003)	(0.006)	
2	1.threat#14.hweek#1.huryear	0.00958***	-0.0222***	0.0350***	
		(0.002)	(0.003)	(0.004)	
3	1.threat#15.hweek#1.huryear	0.0225***	-0.0305***	0.0131***	
		(0.003)	(0.003)	(0.004)	
4	1.threat#16.hweek#1.huryear	0.0187***	-0.0319***	0.0560***	
		(0.003)	(0.003)	(0.004)	
5	1.threat#17.hweek#1.huryear	0.0275***	-0.0284***	0.0586***	
		(0.003)	(0.003)	(0.003)	
6	1.threat#18.hweek#1.huryear	0.0134***	-0.0132***	-0.00847	
		(0.003)	(0.003)	(0.005)	
7	1.threat#19.hweek#1.huryear	0.00142	-0.0128***	0.0336***	
		(0.004)	(0.003)	(0.005)	
8	1.threat#20.hweek#1.huryear	0.0121***	-0.0222***	-0.0144***	
		(0.002)	(0.003)	(0.004)	
	1.threat#1.huryear	-0.0142*	-0.0298***	-0.0150***	
		(0.007)	(0.003)	(0.005)	
	1.threat	0.0396**	0.0837***	0.0147	
		(0.015)	(0.018)	(0.037)	
	1.huryear	0.0107	0.0523***	0.0000663	
		(0.012)	(0.004)	(0.010)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0441***	0.00527***	-0.00105	End-of-year week
		(0.011)	(0.001)	(0.008)	
	irene	-0.0241***	0.0587***	-0.0709***	Irene 2011
		(0.005)	(0.004)	(0.011)	
	1.irene#34.wkcal	-0.00894*	0.0162**	-0.0644***	
		(0.005)	(0.006)	(0.013)	
	N	343740	287662	401704	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-20: Regression results of unique UPC sold around Sandy 2012 across retail channels for dry pasta

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	0.0759***	-0.0323***	-0.151***	
		(0.005)	(0.003)	(0.008)	
-10	1.threat#2.hweek#1.huryear	0.0664***	-0.0535***	-0.107***	
		(0.005)	(0.003)	(0.027)	
-9	1.threat#3.hweek#1.huryear	0.0609***	-0.00557	-0.126***	
		(0.007)	(0.005)	(0.010)	
-8	1.threat#4.hweek#1.huryear	0.0675***	-0.00925***	-0.125***	
		(0.005)	(0.003)	(0.008)	
-7	1.threat#5.hweek#1.huryear	0.0577***	-0.0187***	-0.160***	
		(0.005)	(0.003)	(0.008)	
-6	1.threat#6.hweek#1.huryear	0.0338***	-0.00369	-0.0368***	
		(0.005)	(0.003)	(0.009)	
-5	1.threat#7.hweek#1.huryear	0.0458***	-0.000452	-0.0214***	
		(0.005)	(0.003)	(0.006)	
-4	1.threat#8.hweek#1.huryear	0.0149**	0.000840	-0.0992***	
		(0.005)	(0.003)	(0.010)	
-3	1.threat#9.hweek#1.huryear	0.0498***	-0.00931***	-0.0960***	
		(0.005)	(0.003)	(0.013)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0621***	0.0350***	-0.0940***	
		(0.005)	(0.002)	(0.013)	
0	1.threat#12.hweek#1.huryear	0.0355***	0.0226***	0.0756*	Sandy week
		(0.005)	(0.003)	(0.036)	
1	1.threat#13.hweek#1.huryear	0.0325***	-0.0206***	-0.0873***	
		(0.006)	(0.003)	(0.011)	
2	1.threat#14.hweek#1.huryear	-0.00780	-0.0141***	-0.106***	
		(0.006)	(0.003)	(0.009)	
3	1.threat#15.hweek#1.huryear	-0.0212***	-0.00152	-0.0756***	
		(0.005)	(0.003)	(0.013)	
4	1.threat#16.hweek#1.huryear	-0.00650	0.00142	-0.100***	
		(0.006)	(0.002)	(0.011)	
5	1.threat#17.hweek#1.huryear	-0.00940*	-0.0116***	-0.134***	
		(0.005)	(0.003)	(0.011)	
6	1.threat#18.hweek#1.huryear	0.0145**	-0.0107***	-0.115***	
		(0.006)	(0.003)	(0.007)	
7	1.threat#19.hweek#1.huryear	0.0332***	-0.00336	-0.0629***	
		(0.003)	(0.006)	(0.007)	
8	1.threat#20.hweek#1.huryear	0.0360***	0.00210	-0.216***	
		(0.006)	(0.003)	(0.018)	
	1.threat#1.huryear	-0.0440***	-0.0116***	0.131***	
		(0.007)	(0.003)	(0.011)	
	1.threat	0.199***	0.204***	0.106	
		(0.034)	(0.033)	(0.064)	
	1.huryear	0.0175	0.00789*	-0.00118	
		(0.012)	(0.004)	(0.019)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0610***	-0.00212	-0.00752	End-of-year week
		(0.010)	(0.002)	(0.013)	
	irene	-0.0146*	0.0671***	0.0734***	Irene 2011
		(0.007)	(0.007)	(0.018)	
	1.irene#34.wkcal	-0.0548***	-0.336***	-0.0947***	
		(0.011)	(0.021)	(0.016)	
	N	337328	287678	171626	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-21: Regression results of unique UPC sold around Sandy 2012 across retail channels for bread

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1)	(2)	(3)	
		Mass merchandiser	Food grocer	Drug store	
-11	1.threat#1.hweek#1.huryear	-0.00584	-0.00746*	0.00873	
		(0.006)	(0.004)	(0.006)	
-10	1.threat#2.hweek#1.huryear	0.0000645	-0.0423***	0.00533	
		(0.006)	(0.004)	(0.007)	
-9	1.threat#3.hweek#1.huryear	0.00687	0.0129***	0.00312	
		(0.012)	(0.003)	(0.012)	
-8	1.threat#4.hweek#1.huryear	-0.00631	0.00188	0.0202***	
		(0.006)	(0.004)	(0.005)	
-7	1.threat#5.hweek#1.huryear	0.00718	0.00389	0.00863**	
		(0.006)	(0.004)	(0.004)	
-6	1.threat#6.hweek#1.huryear	-0.00289	0.00668	0.000167	
		(0.006)	(0.004)	(0.004)	
-5	1.threat#7.hweek#1.huryear	0.000692	0.00143	-0.000898	
		(0.006)	(0.004)	(0.006)	
-4	1.threat#8.hweek#1.huryear	-0.00640	0.00224	-0.0104*	
		(0.006)	(0.004)	(0.006)	
-3	1.threat#9.hweek#1.huryear	0.00104	0.00103	0.0274***	
		(0.007)	(0.004)	(0.009)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0106*	0.0205***	0.0763***	
		(0.006)	(0.004)	(0.008)	
0	1.threat#12.hweek#1.huryear	-0.0426***	0.0287***	-0.00358	Sandy week
		(0.008)	(0.004)	(0.012)	
1	1.threat#13.hweek#1.huryear	-0.0128*	-0.0177***	0.00211	
		(0.007)	(0.005)	(0.010)	
2	1.threat#14.hweek#1.huryear	-0.0174**	-0.00422	-0.0333***	
		(0.007)	(0.004)	(0.009)	
3	1.threat#15.hweek#1.huryear	-0.0406***	-0.0133***	-0.0858***	
		(0.009)	(0.005)	(0.011)	
4	1.threat#16.hweek#1.huryear	-0.0331***	-0.0249***	-0.0301*	
		(0.008)	(0.005)	(0.015)	
5	1.threat#17.hweek#1.huryear	-0.0318***	-0.0334***	0.00838	
		(0.008)	(0.005)	(0.014)	
6	1.threat#18.hweek#1.huryear	-0.0440***	-0.0359***	0.00837	
		(0.008)	(0.005)	(0.013)	
7	1.threat#19.hweek#1.huryear	-0.0335***	0.00607*	0.0104	
		(0.009)	(0.003)	(0.013)	
8	1.threat#20.hweek#1.huryear	-0.0585***	-0.0298***	-0.0704***	
		(0.007)	(0.005)	(0.014)	
	1.threat#1.huryear	-0.00278	0.0460***	0.0343***	
		(0.008)	(0.005)	(0.011)	
	1.threat	0.204***	0.0835**	-0.0679	
		(0.066)	(0.030)	(0.054)	
	1.huryear	0.0155**	0.00388	-0.0869***	
		(0.006)	(0.010)	(0.017)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0237***	-0.0740***	-0.0637***	End-of-year week
		(0.002)	(0.009)	(0.010)	
	irene	0.0104	0.113***	-0.161***	Irene 2011
		(0.007)	(0.004)	(0.017)	
	1.irene#34.wkcal	0.0159	-0.480***	0.234***	
		(0.019)	(0.019)	(0.023)	
	N	324184	287684	324292	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-22: Regression results of volume sold around Sandy 2012 within food grocer channel across store sizes for bottled water

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	0.0342*	-0.0182	-0.0544***	
		(0.019)	(0.017)	(0.009)	
-10	1.threat#2.hweek#1.huryear	0.0137	-0.130***	-0.281***	
		(0.022)	(0.023)	(0.012)	
-9	1.threat#3.hweek#1.huryear	-0.0186	-0.0591***	0.0216*	
		(0.032)	(0.011)	(0.012)	
-8	1.threat#4.hweek#1.huryear	0.173***	0.148***	-0.00198	
		(0.020)	(0.019)	(0.013)	
-7	1.threat#5.hweek#1.huryear	0.0294*	0.00399	-0.0549***	
		(0.015)	(0.007)	(0.010)	
-6	1.threat#6.hweek#1.huryear	0.0795***	0.0162**	-0.0110	
		(0.018)	(0.006)	(0.011)	
-5	1.threat#7.hweek#1.huryear	-0.00490	-0.0371***	-0.0298**	
		(0.016)	(0.010)	(0.012)	
-4	1.threat#8.hweek#1.huryear	0.00279	-0.00119	-0.0437**	
		(0.013)	(0.007)	(0.017)	
-3	1.threat#9.hweek#1.huryear	-0.0661***	-0.0787***	-0.0699***	
		(0.014)	(0.009)	(0.009)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.185***	0.354***	0.591***	
		(0.009)	(0.030)	(0.008)	
0	1.threat#12.hweek#1.huryear	1.002***	0.592***	0.0649***	Sandy week
		(0.016)	(0.027)	(0.015)	
1	1.threat#13.hweek#1.huryear	-0.213***	-0.136***	-0.130***	
		(0.011)	(0.010)	(0.018)	
2	1.threat#14.hweek#1.huryear	-0.0636***	-0.0530***	-0.0678***	
		(0.017)	(0.012)	(0.012)	
3	1.threat#15.hweek#1.huryear	0.0269*	-0.0491***	-0.0573***	
		(0.013)	(0.009)	(0.013)	
4	1.threat#16.hweek#1.huryear	0.0453***	-0.0331**	-0.0550***	
		(0.013)	(0.012)	(0.012)	
5	1.threat#17.hweek#1.huryear	0.0335***	-0.0157	-0.0242**	
		(0.011)	(0.011)	(0.011)	
6	1.threat#18.hweek#1.huryear	0.0659***	0.0601***	0.0438***	
		(0.009)	(0.011)	(0.009)	
7	1.threat#19.hweek#1.huryear	0.0715***	0.0219	0.0922***	
		(0.011)	(0.013)	(0.011)	
8	1.threat#20.hweek#1.huryear	0.103***	0.0891***	0.0664***	
		(0.011)	(0.010)	(0.012)	
	1.threat#1.huryear	-0.0788***	-0.0229	-0.0217	
		(0.013)	(0.016)	(0.014)	
	1.threat	0.0815	0.0338	0.124*	
		(0.084)	(0.029)	(0.060)	
	1.huryear	0.148***	0.0753***	0.0553**	
		(0.013)	(0.019)	(0.023)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0401***	0.0231	0.0311	End-of-year week
		(0.010)	(0.019)	(0.024)	
	irene	0.404***	0.212***	-0.148***	Irene 2011
		(0.021)	(0.025)	(0.026)	
	1.irene#34.wkcal	-0.129**	-0.278***	0.826***	
		(0.057)	(0.022)	(0.056)	
	N	79558	158970	50726	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-23: Regression results of volume sold around Sandy 2012 within food grocer channel across store sizes for peanut butter

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	0.0371**	0.00321	0.0622***	
		(0.015)	(0.014)	(0.013)	
-10	1.threat#2.hweek#1.huryear	0.00414	-0.0169	0.0562***	
		(0.008)	(0.012)	(0.013)	
-9	1.threat#3.hweek#1.huryear	-0.0143	0.0416***	0.206***	
		(0.019)	(0.013)	(0.011)	
-8	1.threat#4.hweek#1.huryear	0.0587***	0.114***	0.121***	
		(0.014)	(0.014)	(0.014)	
-7	1.threat#5.hweek#1.huryear	0.0596***	0.0724***	0.0884***	
		(0.011)	(0.011)	(0.015)	
-6	1.threat#6.hweek#1.huryear	0.0155	0.0431***	0.0673***	
		(0.013)	(0.014)	(0.012)	
-5	1.threat#7.hweek#1.huryear	0.175***	0.154***	0.0963***	
		(0.012)	(0.009)	(0.010)	
-4	1.threat#8.hweek#1.huryear	0.0621***	0.0219*	0.0628***	
		(0.011)	(0.011)	(0.011)	
-3	1.threat#9.hweek#1.huryear	-0.0634***	-0.0314**	-0.00635	
		(0.011)	(0.012)	(0.011)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.175***	0.311***	0.498***	
		(0.016)	(0.017)	(0.014)	
0	1.threat#12.hweek#1.huryear	0.706***	0.507***	0.290***	Sandy week
		(0.032)	(0.024)	(0.023)	
1	1.threat#13.hweek#1.huryear	0.0497***	0.0649***	0.0863***	
		(0.011)	(0.009)	(0.013)	
2	1.threat#14.hweek#1.huryear	0.0294***	0.0969***	0.189***	
		(0.010)	(0.009)	(0.011)	
3	1.threat#15.hweek#1.huryear	0.117***	0.137***	0.0885***	
		(0.013)	(0.008)	(0.011)	
4	1.threat#16.hweek#1.huryear	0.126***	0.0831***	0.101***	
		(0.010)	(0.010)	(0.011)	
5	1.threat#17.hweek#1.huryear	0.0519***	0.0643***	0.0908***	
		(0.011)	(0.008)	(0.010)	
6	1.threat#18.hweek#1.huryear	0.0879***	0.0864***	0.123***	
		(0.014)	(0.008)	(0.011)	
7	1.threat#19.hweek#1.huryear	0.0874***	0.0994***	0.163***	
		(0.016)	(0.006)	(0.025)	
8	1.threat#20.hweek#1.huryear	0.186***	0.200***	0.166***	
		(0.018)	(0.006)	(0.010)	
	1.threat#1.huryear	-0.0955***	-0.115***	-0.131***	
		(0.011)	(0.009)	(0.012)	
	1.threat	-0.0160	-0.0450	0.0915	
		(0.049)	(0.059)	(0.099)	
	1.huryear	0.000833	0.00723	0.0333	
		(0.026)	(0.020)	(0.022)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.119***	0.0735***	0.0829***	End-of-year week
		(0.025)	(0.019)	(0.020)	
	irene	0.382***	0.128***	-0.0159	Irene 2011
		(0.020)	(0.020)	(0.022)	
	1.irene#34.wkcal	-0.378***	-0.307***	0.279***	
		(0.011)	(0.017)	(0.037)	
	N	78036	158896	50726	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-24: Regression results of volume sold around Sandy 2012 within food grocer channel across store sizes for canned beans

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	0.243***	0.194***	0.162***	
		(0.015)	(0.013)	(0.012)	
-10	1.threat#2.hweek#1.huryear	0.185***	0.0866***	0.107***	
		(0.013)	(0.014)	(0.022)	
-9	1.threat#3.hweek#1.huryear	0.131***	0.0861***	0.181***	
		(0.023)	(0.018)	(0.023)	
-8	1.threat#4.hweek#1.huryear	0.0823***	0.0839***	0.0403**	
		(0.018)	(0.014)	(0.016)	
-7	1.threat#5.hweek#1.huryear	0.0567***	-0.00430	0.0565***	
		(0.016)	(0.013)	(0.018)	
-6	1.threat#6.hweek#1.huryear	-0.00142	-0.0487***	0.0611***	
		(0.016)	(0.014)	(0.017)	
-5	1.threat#7.hweek#1.huryear	0.0697***	0.0165	0.0704***	
		(0.015)	(0.013)	(0.017)	
-4	1.threat#8.hweek#1.huryear	-0.102***	-0.129***	-0.0112	
		(0.016)	(0.015)	(0.014)	
-3	1.threat#9.hweek#1.huryear	0.0163	0.0451***	0.0362***	
		(0.016)	(0.012)	(0.012)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.0904***	0.0689***	0.210***	
		(0.015)	(0.015)	(0.010)	
0	1.threat#12.hweek#1.huryear	0.176***	0.161***	0.0104	Sandy week
		(0.018)	(0.013)	(0.010)	
1	1.threat#13.hweek#1.huryear	-0.130***	-0.0386***	0.00102	
		(0.018)	(0.013)	(0.012)	
2	1.threat#14.hweek#1.huryear	-0.148***	-0.0561***	0.0203	
		(0.017)	(0.013)	(0.012)	
3	1.threat#15.hweek#1.huryear	-0.0297*	0.0103	0.0658***	
		(0.016)	(0.012)	(0.012)	
4	1.threat#16.hweek#1.huryear	-0.0782***	-0.0504***	-0.0270**	
		(0.015)	(0.016)	(0.011)	
5	1.threat#17.hweek#1.huryear	-0.132***	-0.0933***	-0.00787	
		(0.013)	(0.014)	(0.012)	
6	1.threat#18.hweek#1.huryear	-0.0880***	-0.0659***	-0.00501	
		(0.013)	(0.013)	(0.012)	
7	1.threat#19.hweek#1.huryear	-0.119***	-0.119***	-0.0165	
		(0.014)	(0.014)	(0.013)	
8	1.threat#20.hweek#1.huryear	-0.142***	-0.0810***	-0.0343***	
		(0.017)	(0.014)	(0.010)	
	1.threat#1.huryear	-0.0416*	-0.0271	-0.0618***	
		(0.023)	(0.018)	(0.017)	
	1.threat	-0.382***	-0.394***	-0.233***	
		(0.062)	(0.062)	(0.062)	
	1.huryear	0.102***	0.0453***	0.0740***	
		(0.018)	(0.016)	(0.014)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0392**	0.0486***	0.0363***	End-of-year week
		(0.016)	(0.012)	(0.010)	
	irene	0.190***	-0.0343*	-0.0520**	Irene 2011
		(0.010)	(0.018)	(0.024)	
	1.irene#34.wkcal	-0.339***	-0.229***	0.0265	
		(0.017)	(0.031)	(0.042)	
	N	78028	158898	50670	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-25: Regression results of volume sold around Sandy 2012 within food grocer channel across store sizes for toilet paper

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	0.0589***	0.0125	-0.0444***	
		(0.009)	(0.010)	(0.010)	
-10	1.threat#2.hweek#1.huryear	0.00137	-0.0755***	-0.119***	
		(0.009)	(0.006)	(0.008)	
-9	1.threat#3.hweek#1.huryear	0.0360***	-0.0659***	-0.0109	
		(0.012)	(0.008)	(0.013)	
-8	1.threat#4.hweek#1.huryear	0.0847***	0.00607	-0.0415**	
		(0.011)	(0.008)	(0.015)	
-7	1.threat#5.hweek#1.huryear	-0.0190*	-0.0460***	-0.0805***	
		(0.010)	(0.005)	(0.007)	
-6	1.threat#6.hweek#1.huryear	0.0470***	0.0276***	-0.0965***	
		(0.009)	(0.005)	(0.010)	
-5	1.threat#7.hweek#1.huryear	-0.00762	-0.0338***	-0.0221*	
		(0.010)	(0.007)	(0.011)	
-4	1.threat#8.hweek#1.huryear	-0.00775	-0.0385***	-0.0692***	
		(0.010)	(0.009)	(0.013)	
-3	1.threat#9.hweek#1.huryear	0.0457***	-0.0334***	-0.00538	
		(0.010)	(0.008)	(0.010)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.134***	0.112***	0.124***	
		(0.011)	(0.009)	(0.011)	
0	1.threat#12.hweek#1.huryear	0.328***	0.102***	-0.169***	Sandy week
		(0.012)	(0.008)	(0.017)	
1	1.threat#13.hweek#1.huryear	-0.0882***	-0.0857***	-0.0728***	
		(0.009)	(0.007)	(0.009)	
2	1.threat#14.hweek#1.huryear	0.0297***	-0.00715	-0.0671***	
		(0.010)	(0.006)	(0.009)	
3	1.threat#15.hweek#1.huryear	0.0881***	0.0167**	-0.0204**	
		(0.010)	(0.006)	(0.009)	
4	1.threat#16.hweek#1.huryear	-0.00187	-0.0871***	-0.0163	
		(0.014)	(0.014)	(0.012)	
5	1.threat#17.hweek#1.huryear	0.0466***	-0.0273***	-0.0364***	
		(0.011)	(0.008)	(0.011)	
6	1.threat#18.hweek#1.huryear	0.128***	-0.0474***	-0.0773***	
		(0.010)	(0.008)	(0.009)	
7	1.threat#19.hweek#1.huryear	0.0302***	0.00540	0.00172	
		(0.009)	(0.013)	(0.014)	
8	1.threat#20.hweek#1.huryear	0.00759	0.0248***	-0.0300**	
		(0.009)	(0.008)	(0.011)	
	1.threat#1.huryear	-0.0951***	-0.0462***	-0.0266**	
		(0.015)	(0.007)	(0.010)	
	1.threat	-0.0151	-0.0129	0.191**	
		(0.049)	(0.049)	(0.070)	
	1.huryear	0.0215	-0.000759	0.00946	
		(0.021)	(0.013)	(0.010)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.123***	-0.0150	0.00626	End-of-year week
		(0.019)	(0.013)	(0.007)	
	irene	0.133***	-0.179***	-0.0739***	Irene 2011
		(0.015)	(0.014)	(0.010)	
	1.irene#34.wkcal	-0.137***	-0.141***	0.839***	
		(0.010)	(0.021)	(0.026)	
	N	78020	158904	50726	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-26: Regression results of volume sold around Sandy 2012 within food grocer channel across store sizes for dry pasta

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.0766***	-0.0219*	-0.0657***	
		(0.015)	(0.011)	(0.013)	
-10	1.threat#2.hweek#1.huryear	-0.0668***	-0.0774***	-0.115***	
		(0.014)	(0.012)	(0.015)	
-9	1.threat#3.hweek#1.huryear	-0.0582**	0.0799***	0.0250*	
		(0.022)	(0.015)	(0.014)	
-8	1.threat#4.hweek#1.huryear	-0.0634***	0.0261**	-0.0200	
		(0.013)	(0.010)	(0.012)	
-7	1.threat#5.hweek#1.huryear	-0.0924***	0.0482***	0.0647***	
		(0.013)	(0.008)	(0.013)	
-6	1.threat#6.hweek#1.huryear	-0.0436***	-0.0311**	-0.0194	
		(0.014)	(0.013)	(0.013)	
-5	1.threat#7.hweek#1.huryear	0.0518***	0.0999***	0.0130	
		(0.017)	(0.018)	(0.014)	
-4	1.threat#8.hweek#1.huryear	-0.00878	-0.0182*	0.0908***	
		(0.011)	(0.009)	(0.013)	
-3	1.threat#9.hweek#1.huryear	-0.111***	-0.0305***	0.0339**	
		(0.009)	(0.009)	(0.013)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.00375	0.0976***	0.167***	
		(0.016)	(0.012)	(0.012)	
0	1.threat#12.hweek#1.huryear	0.170***	0.0774***	-0.111***	Sandy week
		(0.014)	(0.015)	(0.013)	
1	1.threat#13.hweek#1.huryear	-0.166***	-0.115***	-0.105***	
		(0.012)	(0.010)	(0.015)	
2	1.threat#14.hweek#1.huryear	-0.136***	-0.00105	0.0442***	
		(0.010)	(0.008)	(0.013)	
3	1.threat#15.hweek#1.huryear	-0.148***	-0.0124	0.0325*	
		(0.012)	(0.010)	(0.016)	
4	1.threat#16.hweek#1.huryear	-0.0680***	-0.103***	-0.119***	
		(0.017)	(0.014)	(0.011)	
5	1.threat#17.hweek#1.huryear	-0.113***	-0.122***	-0.0753***	
		(0.011)	(0.009)	(0.010)	
6	1.threat#18.hweek#1.huryear	-0.182***	-0.0487***	0.0466***	
		(0.008)	(0.008)	(0.012)	
7	1.threat#19.hweek#1.huryear	-0.0854***	0.0228**	0.0954***	
		(0.007)	(0.008)	(0.018)	
8	1.threat#20.hweek#1.huryear	-0.127***	0.0581***	0.00406	
		(0.013)	(0.010)	(0.015)	
	1.threat#1.huryear	0.0647***	-0.0328**	-0.0717***	
		(0.012)	(0.015)	(0.017)	
	1.threat	0.226***	0.303***	0.342***	
		(0.043)	(0.047)	(0.086)	
	1.huryear	0.0634***	0.0516**	0.0649**	
		(0.015)	(0.020)	(0.025)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.178***	-0.119***	-0.140***	End-of-year week
		(0.016)	(0.018)	(0.020)	
	irene	0.289***	0.166***	0.214***	Irene 2011
		(0.007)	(0.011)	(0.022)	
	1.irene#34.wkcal	-0.293***	-0.399***	-0.556***	
		(0.010)	(0.023)	(0.059)	
	N	78032	158908	50726	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-27: Regression results of volume sold around Sandy 2012 within food grocer channel across store sizes for bread

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.0477***	-0.0428***	-0.0652***	
		(0.009)	(0.006)	(0.006)	
-10	1.threat#2.hweek#1.huryear	-0.0475***	-0.0809***	-0.153***	
		(0.009)	(0.005)	(0.008)	
-9	1.threat#3.hweek#1.huryear	-0.0507***	-0.0334***	-0.0249***	
		(0.012)	(0.007)	(0.008)	
-8	1.threat#4.hweek#1.huryear	-0.0308***	-0.0247***	-0.0427***	
		(0.008)	(0.006)	(0.007)	
-7	1.threat#5.hweek#1.huryear	-0.0198**	-0.00325	-0.0101	
		(0.009)	(0.005)	(0.006)	
-6	1.threat#6.hweek#1.huryear	0.0222**	0.0255***	-0.00308	
		(0.009)	(0.006)	(0.006)	
-5	1.threat#7.hweek#1.huryear	0.00508	0.00924**	0.00750	
		(0.007)	(0.004)	(0.006)	
-4	1.threat#8.hweek#1.huryear	-0.0333***	-0.0274***	-0.0322***	
		(0.007)	(0.005)	(0.007)	
-3	1.threat#9.hweek#1.huryear	-0.0300***	-0.00983**	-0.0173**	
		(0.007)	(0.005)	(0.006)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0496***	0.151***	0.270***	
		(0.005)	(0.005)	(0.006)	
0	1.threat#12.hweek#1.huryear	0.272***	0.162***	0.0143*	Sandy week
		(0.011)	(0.009)	(0.008)	
1	1.threat#13.hweek#1.huryear	-0.0679***	-0.0447***	-0.0461***	
		(0.006)	(0.005)	(0.008)	
2	1.threat#14.hweek#1.huryear	-0.0335***	-0.0180***	-0.0136*	
		(0.007)	(0.005)	(0.007)	
3	1.threat#15.hweek#1.huryear	0.0667***	0.0471***	-0.00180	
		(0.008)	(0.007)	(0.009)	
4	1.threat#16.hweek#1.huryear	0.0387***	-0.0186***	-0.0125**	
		(0.005)	(0.005)	(0.006)	
5	1.threat#17.hweek#1.huryear	-0.00493	-0.0214***	-0.00444	
		(0.005)	(0.005)	(0.008)	
6	1.threat#18.hweek#1.huryear	-0.00289	-0.0127**	-0.00812	
		(0.005)	(0.005)	(0.007)	
7	1.threat#19.hweek#1.huryear	0.00401	-0.00630	0.0146*	
		(0.006)	(0.007)	(0.007)	
8	1.threat#20.hweek#1.huryear	0.0211***	0.0640***	0.0495***	
		(0.007)	(0.005)	(0.006)	
	1.threat#1.huryear	-0.0404***	-0.0328***	-0.0147*	
		(0.007)	(0.005)	(0.007)	
	1.threat	-0.0517	-0.0517	-0.0428	
		(0.037)	(0.043)	(0.044)	
	1.huryear	-0.0120**	-0.0291***	-0.0200*	
		(0.006)	(0.007)	(0.011)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0159***	-0.0333***	-0.0520***	End-of-year week
		(0.003)	(0.003)	(0.005)	
	irene	0.0968***	-0.0246**	-0.182***	Irene 2011
		(0.006)	(0.011)	(0.019)	
	1.irene#34.wkcal	-0.110***	-0.174***	-0.656***	
		(0.005)	(0.018)	(0.045)	
	N	78032	158914	50726	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-28: Regression results of unique UPC count sold around Sandy 2012 within food grocer channel across store sizes for bottled water

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.0307***	-0.0247***	-0.0150***	
		(0.005)	(0.003)	(0.003)	
-10	1.threat#2.hweek#1.huryear	-0.0494***	-0.0447***	-0.0192***	
		(0.005)	(0.003)	(0.005)	
-9	1.threat#3.hweek#1.huryear	-0.0290***	-0.0160***	-0.00589	
		(0.008)	(0.004)	(0.005)	
-8	1.threat#4.hweek#1.huryear	-0.0207***	-0.00715**	0.0299***	
		(0.005)	(0.003)	(0.004)	
-7	1.threat#5.hweek#1.huryear	-0.0122**	-0.00870***	0.0263***	
		(0.005)	(0.003)	(0.003)	
-6	1.threat#6.hweek#1.huryear	-0.0202***	-0.00206	-0.00167	
		(0.005)	(0.003)	(0.004)	
-5	1.threat#7.hweek#1.huryear	-0.0108**	-0.00158	-0.00267	
		(0.005)	(0.003)	(0.004)	
-4	1.threat#8.hweek#1.huryear	-0.0256***	-0.00546	-0.0206***	
		(0.005)	(0.003)	(0.003)	
-3	1.threat#9.hweek#1.huryear	-0.0217***	-0.0127***	-0.0382***	
		(0.005)	(0.003)	(0.003)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0847***	0.0487***	0.0971***	
		(0.005)	(0.004)	(0.004)	
0	1.threat#12.hweek#1.huryear	0.000728	0.0607***	-0.0296***	Sandy week
		(0.005)	(0.004)	(0.006)	
1	1.threat#13.hweek#1.huryear	-0.0749***	-0.0533***	-0.106***	
		(0.005)	(0.004)	(0.007)	
2	1.threat#14.hweek#1.huryear	-0.0375***	-0.0178***	-0.0496***	
		(0.005)	(0.004)	(0.007)	
3	1.threat#15.hweek#1.huryear	-0.0248***	0.00481	-0.0532***	
		(0.005)	(0.005)	(0.004)	
4	1.threat#16.hweek#1.huryear	-0.0157***	0.0106**	-0.0386***	
		(0.005)	(0.004)	(0.004)	
5	1.threat#17.hweek#1.huryear	-0.00278	0.0109**	-0.0133***	
		(0.005)	(0.004)	(0.004)	
6	1.threat#18.hweek#1.huryear	0.00301	0.00794*	-0.00514	
		(0.005)	(0.004)	(0.003)	
7	1.threat#19.hweek#1.huryear	-0.0279***	0.00736	-0.0214**	
		(0.005)	(0.005)	(0.010)	
8	1.threat#20.hweek#1.huryear	-0.00888	0.0133***	-0.0740***	
		(0.006)	(0.004)	(0.003)	
	1.threat#1.huryear	-0.0177**	-0.00826*	0.0368***	
		(0.006)	(0.005)	(0.004)	
	1.threat	0.214***	0.0635**	-0.0333	
		(0.043)	(0.025)	(0.077)	
	1.huryear	0.0572***	0.0209***	-0.00497	
		(0.011)	(0.005)	(0.007)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0429***	0.0133***	-0.0220***	End-of-year week
		(0.009)	(0.003)	(0.004)	
	irene	0.0680***	0.0262***	-0.150***	Irene 2011
		(0.008)	(0.002)	(0.015)	
	1.irene#34.wkcal	-0.0902***	-0.160***	0.0901***	
		(0.012)	(0.011)	(0.016)	
	N	343976	289266	402232	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-29: Regression results of unique UPC count sold around Sandy 2012 within food grocer channel across store sizes for peanut butter

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.0215***	0.0184***	-0.0893***	
		(0.007)	(0.003)	(0.017)	
-10	1.threat#2.hweek#1.huryear	-0.0414***	0.00627*	-0.320***	
		(0.007)	(0.003)	(0.021)	
-9	1.threat#3.hweek#1.huryear	0.0123	0.0178***	-0.232***	
		(0.009)	(0.004)	(0.014)	
-8	1.threat#4.hweek#1.huryear	0.0311***	0.0332***	0.0136	
		(0.007)	(0.003)	(0.029)	
-7	1.threat#5.hweek#1.huryear	0.0324***	0.0253***	-0.0252	
		(0.007)	(0.003)	(0.035)	
-6	1.threat#6.hweek#1.huryear	0.0146*	0.0318***	0.0269	
		(0.008)	(0.003)	(0.019)	
-5	1.threat#7.hweek#1.huryear	-0.00435	0.0293***	-0.166***	
		(0.007)	(0.003)	(0.023)	
-4	1.threat#8.hweek#1.huryear	0.00744	0.00861**	0.120***	
		(0.007)	(0.003)	(0.022)	
-3	1.threat#9.hweek#1.huryear	0.00695	-0.00159	0.0120	
		(0.008)	(0.004)	(0.036)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.117***	0.0534***	0.0306	
		(0.007)	(0.003)	(0.026)	
0	1.threat#12.hweek#1.huryear	0.150***	0.105***	0.267***	Sandy week
		(0.006)	(0.004)	(0.019)	
1	1.threat#13.hweek#1.huryear	0.0219**	0.0128***	-0.139***	
		(0.008)	(0.003)	(0.028)	
2	1.threat#14.hweek#1.huryear	0.0255***	0.0291***	-0.0950***	
		(0.007)	(0.003)	(0.029)	
3	1.threat#15.hweek#1.huryear	0.0317***	0.0420***	-0.172***	
		(0.007)	(0.004)	(0.022)	
4	1.threat#16.hweek#1.huryear	0.0118	0.0497***	0.0638**	
		(0.007)	(0.004)	(0.024)	
5	1.threat#17.hweek#1.huryear	0.0132*	0.0352***	-0.134***	
		(0.007)	(0.003)	(0.025)	
6	1.threat#18.hweek#1.huryear	0.0232***	0.0404***	-0.0524**	
		(0.008)	(0.003)	(0.019)	
7	1.threat#19.hweek#1.huryear	-0.00557	0.0248***	-0.103***	
		(0.006)	(0.004)	(0.022)	
8	1.threat#20.hweek#1.huryear	0.0507***	0.0486***	-0.0894***	
		(0.008)	(0.003)	(0.021)	
	1.threat#1.huryear	-0.0742***	-0.00348	0.252***	
		(0.008)	(0.004)	(0.042)	
	1.threat	0.185***	-0.0620**	-0.161**	
		(0.041)	(0.024)	(0.058)	
	1.huryear	0.162***	0.0456***	-0.108**	
		(0.009)	(0.006)	(0.048)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0401***	0.0300***	0.133***	End-of-year week
		(0.006)	(0.005)	(0.045)	
	irene	0.0352***	0.00385	-0.286***	Irene 2011
		(0.006)	(0.003)	(0.021)	
	1.irene#34.wkcal	0.0845***	-0.152***	0.397***	
		(0.012)	(0.006)	(0.016)	
	N	324428	287670	287000	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-30: Regression results of unique UPC count sold around Sandy 2012 within food grocer channel across store sizes for canned beans

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.0178*	0.0232***	0.0555**	
		(0.010)	(0.003)	(0.022)	
-10	1.threat#2.hweek#1.huryear	-0.106***	-0.00210	-0.0203	
		(0.011)	(0.003)	(0.018)	
-9	1.threat#3.hweek#1.huryear	-0.0242**	-0.000430	0.0529***	
		(0.011)	(0.005)	(0.017)	
-8	1.threat#4.hweek#1.huryear	-0.102***	0.000282	0.0846***	
		(0.010)	(0.003)	(0.012)	
-7	1.threat#5.hweek#1.huryear	-0.0297***	0.00228	0.000460	
		(0.009)	(0.003)	(0.013)	
-6	1.threat#6.hweek#1.huryear	-0.0431***	0.00516	-0.00382	
		(0.011)	(0.003)	(0.019)	
-5	1.threat#7.hweek#1.huryear	-0.0931***	0.00907**	0.0365***	
		(0.010)	(0.004)	(0.010)	
-4	1.threat#8.hweek#1.huryear	-0.0620***	-0.00897**	0.0149	
		(0.009)	(0.003)	(0.013)	
-3	1.threat#9.hweek#1.huryear	-0.0408***	0.00487	0.0123	
		(0.012)	(0.003)	(0.015)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.0383***	0.0150***	0.0265**	
		(0.009)	(0.003)	(0.010)	
0	1.threat#12.hweek#1.huryear	0.00841	0.0452***	0.0552**	Sandy week
		(0.009)	(0.004)	(0.019)	
1	1.threat#13.hweek#1.huryear	-0.0466***	-0.0107***	0.0233**	
		(0.010)	(0.003)	(0.008)	
2	1.threat#14.hweek#1.huryear	-0.0369***	-0.0124***	-0.0107	
		(0.008)	(0.003)	(0.014)	
3	1.threat#15.hweek#1.huryear	-0.0548***	-0.00994***	0.0241	
		(0.011)	(0.003)	(0.015)	
4	1.threat#16.hweek#1.huryear	-0.0203**	-0.00284	0.0412**	
		(0.007)	(0.003)	(0.018)	
5	1.threat#17.hweek#1.huryear	-0.0520***	-0.00940***	0.00503	
		(0.006)	(0.003)	(0.014)	
6	1.threat#18.hweek#1.huryear	0.0109	-0.00825**	0.0302	
		(0.009)	(0.003)	(0.018)	
7	1.threat#19.hweek#1.huryear	-0.0190	-0.0109***	-0.0454**	
		(0.011)	(0.003)	(0.017)	
8	1.threat#20.hweek#1.huryear	-0.0242**	-0.00474	0.0625***	
		(0.011)	(0.003)	(0.017)	
	1.threat#1.huryear	0.00420	-0.00828**	-0.0695***	
		(0.010)	(0.004)	(0.014)	
	1.threat	0.181***	-0.224***	-0.129**	
		(0.059)	(0.023)	(0.058)	
	1.huryear	0.103***	0.0558***	-0.000202	
		(0.009)	(0.003)	(0.018)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.00813***	0.0114***	0.00490	End-of-year week
		(0.001)	(0.001)	(0.006)	
	irene	0.120***	-0.0902***	0.0270**	Irene 2011
		(0.007)	(0.001)	(0.011)	
	1.irene#34.wkcal	-0.0892***	-0.0413***	0.0109	
		(0.015)	(0.008)	(0.020)	
	N	156040	287608	14168	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-31: Regression results of unique UPC count sold around Sandy 2012 within food grocer channel across store sizes for toilet paper

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.0133***	0.000767	-0.0113**	
		(0.003)	(0.002)	(0.005)	
-10	1.threat#2.hweek#1.huryear	-0.0174***	0.0120***	-0.0200***	
		(0.002)	(0.002)	(0.003)	
-9	1.threat#3.hweek#1.huryear	-0.0328***	0.0191***	0.0352***	
		(0.003)	(0.003)	(0.008)	
-8	1.threat#4.hweek#1.huryear	-0.0150***	0.00279	0.0154	
		(0.002)	(0.002)	(0.009)	
-7	1.threat#5.hweek#1.huryear	0.00179	0.00258	0.0134	
		(0.002)	(0.002)	(0.014)	
-6	1.threat#6.hweek#1.huryear	0.00653**	-0.0104***	-0.0249*	
		(0.003)	(0.002)	(0.014)	
-5	1.threat#7.hweek#1.huryear	-0.00267	-0.00371	-0.00981	
		(0.003)	(0.003)	(0.014)	
-4	1.threat#8.hweek#1.huryear	0.0104***	-0.00585**	0.0335	
		(0.002)	(0.003)	(0.019)	
-3	1.threat#9.hweek#1.huryear	0.00512*	-0.00818***	0.0164***	
		(0.003)	(0.003)	(0.005)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0329***	-0.0000658	0.0672***	
		(0.002)	(0.003)	(0.003)	
0	1.threat#12.hweek#1.huryear	-0.0130***	0.00515**	0.0361***	Sandy week
		(0.003)	(0.002)	(0.004)	
1	1.threat#13.hweek#1.huryear	0.0200***	-0.0357***	0.0256***	
		(0.002)	(0.003)	(0.006)	
2	1.threat#14.hweek#1.huryear	0.00958***	-0.0222***	0.0350***	
		(0.002)	(0.003)	(0.004)	
3	1.threat#15.hweek#1.huryear	0.0225***	-0.0305***	0.0131***	
		(0.003)	(0.003)	(0.004)	
4	1.threat#16.hweek#1.huryear	0.0187***	-0.0319***	0.0560***	
		(0.003)	(0.003)	(0.004)	
5	1.threat#17.hweek#1.huryear	0.0275***	-0.0284***	0.0586***	
		(0.003)	(0.003)	(0.003)	
6	1.threat#18.hweek#1.huryear	0.0134***	-0.0132***	-0.00847	
		(0.003)	(0.003)	(0.005)	
7	1.threat#19.hweek#1.huryear	0.00142	-0.0128***	0.0336***	
		(0.004)	(0.003)	(0.005)	
8	1.threat#20.hweek#1.huryear	0.0121***	-0.0222***	-0.0144***	
		(0.002)	(0.003)	(0.004)	
	1.threat#1.huryear	-0.0142*	-0.0298***	-0.0150***	
		(0.007)	(0.003)	(0.005)	
	1.threat	0.0396**	0.0837***	0.0147	
		(0.015)	(0.018)	(0.037)	
	1.huryear	0.0107	0.0523***	0.0000663	
		(0.012)	(0.004)	(0.010)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0441***	0.00527***	-0.00105	End-of-year week
		(0.011)	(0.001)	(0.008)	
	irene	-0.0241***	0.0587***	-0.0709***	Irene 2011
		(0.005)	(0.004)	(0.011)	
	1.irene#34.wkcal	-0.00894*	0.0162**	-0.0644***	
		(0.005)	(0.006)	(0.013)	
	N	343740	287662	401704	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-32: Regression results of unique UPC count sold around Sandy 2012 within food grocer channel across store sizes for dry pasta

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	0.0759***	-0.0323***	-0.151***	
		(0.005)	(0.003)	(0.008)	
-10	1.threat#2.hweek#1.huryear	0.0664***	-0.0535***	-0.107***	
		(0.005)	(0.003)	(0.027)	
-9	1.threat#3.hweek#1.huryear	0.0609***	-0.00557	-0.126***	
		(0.007)	(0.005)	(0.010)	
-8	1.threat#4.hweek#1.huryear	0.0675***	-0.00925***	-0.125***	
		(0.005)	(0.003)	(0.008)	
-7	1.threat#5.hweek#1.huryear	0.0577***	-0.0187***	-0.160***	
		(0.005)	(0.003)	(0.008)	
-6	1.threat#6.hweek#1.huryear	0.0338***	-0.00369	-0.0368***	
		(0.005)	(0.003)	(0.009)	
-5	1.threat#7.hweek#1.huryear	0.0458***	-0.000452	-0.0214***	
		(0.005)	(0.003)	(0.006)	
-4	1.threat#8.hweek#1.huryear	0.0149**	0.000840	-0.0992***	
		(0.005)	(0.003)	(0.010)	
-3	1.threat#9.hweek#1.huryear	0.0498***	-0.00931***	-0.0960***	
		(0.005)	(0.003)	(0.013)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0621***	0.0350***	-0.0940***	
		(0.005)	(0.002)	(0.013)	
0	1.threat#12.hweek#1.huryear	0.0355***	0.0226***	0.0756*	Sandy week
		(0.005)	(0.003)	(0.036)	
1	1.threat#13.hweek#1.huryear	0.0325***	-0.0206***	-0.0873***	
		(0.006)	(0.003)	(0.011)	
2	1.threat#14.hweek#1.huryear	-0.00780	-0.0141***	-0.106***	
		(0.006)	(0.003)	(0.009)	
3	1.threat#15.hweek#1.huryear	-0.0212***	-0.00152	-0.0756***	
		(0.005)	(0.003)	(0.013)	
4	1.threat#16.hweek#1.huryear	-0.00650	0.00142	-0.100***	
		(0.006)	(0.002)	(0.011)	
5	1.threat#17.hweek#1.huryear	-0.00940*	-0.0116***	-0.134***	
		(0.005)	(0.003)	(0.011)	
6	1.threat#18.hweek#1.huryear	0.0145**	-0.0107***	-0.115***	
		(0.006)	(0.003)	(0.007)	
7	1.threat#19.hweek#1.huryear	0.0332***	-0.00336	-0.0629***	
		(0.003)	(0.006)	(0.007)	
8	1.threat#20.hweek#1.huryear	0.0360***	0.00210	-0.216***	
		(0.006)	(0.003)	(0.018)	
	1.threat#1.huryear	-0.0440***	-0.0116***	0.131***	
		(0.007)	(0.003)	(0.011)	
	1.threat	0.199***	0.204***	0.106	
		(0.034)	(0.033)	(0.064)	
	1.huryear	0.0175	0.00789*	-0.00118	
		(0.012)	(0.004)	(0.019)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0610***	-0.00212	-0.00752	End-of-year week
		(0.010)	(0.002)	(0.013)	
	irene	-0.0146*	0.0671***	0.0734***	Irene 2011
		(0.007)	(0.007)	(0.018)	
	1.irene#34.wkcal	-0.0548***	-0.336***	-0.0947***	
		(0.011)	(0.021)	(0.016)	
	N	337328	287678	171626	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-33: Regression results of unique UPC count sold around Sandy 2012 within food grocer channel across store sizes for bread

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.00476	-0.00936**	-0.00602	
		(0.008)	(0.004)	(0.005)	
-10	1.threat#2.hweek#1.huryear	-0.0211**	-0.0296***	-0.0311***	
		(0.009)	(0.003)	(0.006)	
-9	1.threat#3.hweek#1.huryear	0.00880	0.0115***	-0.0246**	
		(0.013)	(0.003)	(0.009)	
-8	1.threat#4.hweek#1.huryear	0.00291	-0.00227	0.00534	
		(0.009)	(0.004)	(0.005)	
-7	1.threat#5.hweek#1.huryear	-0.00815	0.000948	0.0109**	
		(0.011)	(0.003)	(0.005)	
-6	1.threat#6.hweek#1.huryear	-0.00747	0.00615*	0.00978*	
		(0.011)	(0.003)	(0.005)	
-5	1.threat#7.hweek#1.huryear	-0.0160	-0.000836	0.00985**	
		(0.011)	(0.003)	(0.005)	
-4	1.threat#8.hweek#1.huryear	-0.0159	0.000266	0.00889*	
		(0.011)	(0.003)	(0.004)	
-3	1.threat#9.hweek#1.huryear	-0.00820	0.000161	0.00521	
		(0.007)	(0.004)	(0.004)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.00487	0.0204***	0.0219***	
		(0.007)	(0.004)	(0.005)	
0	1.threat#12.hweek#1.huryear	0.0476***	0.0330***	-0.000834	Sandy week
		(0.006)	(0.004)	(0.004)	
1	1.threat#13.hweek#1.huryear	-0.0532***	-0.0122**	-0.0187***	
		(0.007)	(0.004)	(0.006)	
2	1.threat#14.hweek#1.huryear	-0.0352***	-0.000902	-0.00269	
		(0.007)	(0.004)	(0.006)	
3	1.threat#15.hweek#1.huryear	-0.0324***	-0.0111**	-0.00919	
		(0.005)	(0.004)	(0.006)	
4	1.threat#16.hweek#1.huryear	-0.0431***	-0.0321***	-0.00855	
		(0.005)	(0.005)	(0.007)	
5	1.threat#17.hweek#1.huryear	-0.0485***	-0.0361***	-0.0349***	
		(0.005)	(0.005)	(0.006)	
6	1.threat#18.hweek#1.huryear	-0.0485***	-0.0415***	-0.0318***	
		(0.005)	(0.005)	(0.006)	
7	1.threat#19.hweek#1.huryear	-0.00385	-0.00270	0.00901	
		(0.004)	(0.005)	(0.008)	
8	1.threat#20.hweek#1.huryear	-0.0476***	-0.0309***	-0.0281***	
		(0.006)	(0.005)	(0.006)	
	1.threat#1.huryear	0.00861	0.0345***	0.0764***	
		(0.009)	(0.005)	(0.008)	
	1.threat	0.218***	0.00757	-0.208***	
		(0.036)	(0.036)	(0.059)	
	1.huryear	-0.00384	0.00117	0.0346***	
		(0.011)	(0.008)	(0.010)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0852***	-0.0665***	-0.0800***	End-of-year week
		(0.010)	(0.007)	(0.006)	
	irene	0.159***	0.120***	-0.111***	Irene 2011
		(0.003)	(0.008)	(0.009)	
	1.irene#34.wkcal	-0.242***	-0.387***	-1.336***	
		(0.011)	(0.018)	(0.050)	
	N	78032	158914	50726	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-34: Regression results of volume sold around Sandy 2012 within mass merchandiser channel across store sizes for bottled water

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.00211	0.185***	-0.00257	
		(0.008)	(0.019)	(0.007)	
-10	1.threat#2.hweek#1.huryear	-0.0956***	0.0461*	-0.189***	
		(0.015)	(0.025)	(0.008)	
-9	1.threat#3.hweek#1.huryear	-0.0413***	0.184***	0.0302**	
		(0.008)	(0.013)	(0.011)	
-8	1.threat#4.hweek#1.huryear	0.0975***	0.167***	0.120***	
		(0.009)	(0.017)	(0.009)	
-7	1.threat#5.hweek#1.huryear	0.0427***	0.107***	0.0806***	
		(0.009)	(0.015)	(0.011)	
-6	1.threat#6.hweek#1.huryear	-0.0223**	0.0684***	0.0485***	
		(0.008)	(0.015)	(0.011)	
-5	1.threat#7.hweek#1.huryear	-0.0736***	0.0262	-0.00555	
		(0.009)	(0.017)	(0.011)	
-4	1.threat#8.hweek#1.huryear	-0.0152	0.0583***	0.0250**	
		(0.009)	(0.015)	(0.010)	
-3	1.threat#9.hweek#1.huryear	-0.0930***	-0.0520***	-0.0177	
		(0.010)	(0.015)	(0.014)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.521***	0.768***	0.701***	
		(0.009)	(0.022)	(0.011)	
0	1.threat#12.hweek#1.huryear	0.364***	0.383***	-0.0371***	Sandy week
		(0.007)	(0.020)	(0.012)	
1	1.threat#13.hweek#1.huryear	-0.0870***	0.0189	-0.0784***	
		(0.013)	(0.016)	(0.010)	
2	1.threat#14.hweek#1.huryear	-0.0671***	-0.00658	-0.108***	
		(0.012)	(0.015)	(0.008)	
3	1.threat#15.hweek#1.huryear	-0.0538***	-0.0208	-0.0989***	
		(0.012)	(0.016)	(0.010)	
4	1.threat#16.hweek#1.huryear	-0.0266**	0.0277	-0.0582***	
		(0.010)	(0.016)	(0.012)	
5	1.threat#17.hweek#1.huryear	0.0400***	0.0484***	0.0334***	
		(0.008)	(0.016)	(0.011)	
6	1.threat#18.hweek#1.huryear	0.00901	-0.000763	-0.0453***	
		(0.010)	(0.017)	(0.011)	
7	1.threat#19.hweek#1.huryear	0.00452	0.0855***	-0.0386**	
		(0.008)	(0.013)	(0.015)	
8	1.threat#20.hweek#1.huryear	-0.0284**	0.00699	-0.0522***	
		(0.012)	(0.017)	(0.011)	
	1.threat#1.huryear	-0.00862	-0.135***	-0.0254	
		(0.012)	(0.020)	(0.018)	
	1.threat	0.124**	-0.0133	0.0431	
		(0.057)	(0.061)	(0.049)	
	1.huryear	0.168***	0.0666**	0.0949***	
		(0.018)	(0.028)	(0.020)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0130	-0.147***	-0.0176	End-of-year week
		(0.018)	(0.025)	(0.021)	
	irene	-0.386***	-0.495***	-0.409***	Irene 2011
		(0.016)	(0.022)	(0.022)	
	1.irene#34.wkcal	0.716***	0.884***	0.738***	
		(0.007)	(0.018)	(0.023)	
	N	251150	64916	27800	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-35: Regression results of volume sold around Sandy 2012 within mass merchandiser channel across store sizes for peanut butter

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	0.0437***	0.00958	0.0301	
		(0.012)	(0.013)	(0.022)	
-10	1.threat#2.hweek#1.huryear	-0.0264**	-0.268***	-0.0726***	
		(0.011)	(0.022)	(0.015)	
-9	1.threat#3.hweek#1.huryear	0.0498***	-0.00466	0.126***	
		(0.010)	(0.020)	(0.017)	
-8	1.threat#4.hweek#1.huryear	0.0763***	0.131***	0.282***	
		(0.011)	(0.013)	(0.016)	
-7	1.threat#5.hweek#1.huryear	0.0556***	0.0953***	0.185***	
		(0.011)	(0.019)	(0.018)	
-6	1.threat#6.hweek#1.huryear	0.0328***	0.0179	0.156***	
		(0.011)	(0.019)	(0.018)	
-5	1.threat#7.hweek#1.huryear	-0.0805***	0.00291	0.109***	
		(0.013)	(0.020)	(0.016)	
-4	1.threat#8.hweek#1.huryear	0.0109	0.112***	0.158***	
		(0.016)	(0.017)	(0.017)	
-3	1.threat#9.hweek#1.huryear	-0.00428	0.00551	0.0331*	
		(0.016)	(0.019)	(0.019)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.353***	0.263***	0.636***	
		(0.017)	(0.030)	(0.017)	
0	1.threat#12.hweek#1.huryear	0.381***	0.510***	0.369***	Sandy week
		(0.011)	(0.029)	(0.021)	
1	1.threat#13.hweek#1.huryear	0.0328*	0.163***	0.0988***	
		(0.017)	(0.022)	(0.023)	
2	1.threat#14.hweek#1.huryear	0.0321**	0.117***	0.157***	
		(0.012)	(0.023)	(0.018)	
3	1.threat#15.hweek#1.huryear	-0.00161	0.139***	0.141***	
		(0.012)	(0.021)	(0.012)	
4	1.threat#16.hweek#1.huryear	-0.0366***	0.0791**	0.0662***	
		(0.012)	(0.030)	(0.015)	
5	1.threat#17.hweek#1.huryear	0.0701***	0.0483*	0.160***	
		(0.013)	(0.027)	(0.017)	
6	1.threat#18.hweek#1.huryear	0.184***	0.0891***	0.0833***	
		(0.017)	(0.031)	(0.016)	
7	1.threat#19.hweek#1.huryear	0.0294	-0.00358	0.0343***	
		(0.020)	(0.027)	(0.012)	
8	1.threat#20.hweek#1.huryear	0.0315**	0.0120	0.117***	
		(0.012)	(0.031)	(0.014)	
	1.threat#1.huryear	-0.124***	-0.145***	-0.159***	
		(0.020)	(0.029)	(0.021)	
	1.threat	0.297***	-0.204*	-0.133	
		(0.041)	(0.111)	(0.104)	
	1.huryear	0.191***	0.117**	0.0774**	
		(0.022)	(0.053)	(0.032)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0112	0.151***	0.131***	End-of-year week
		(0.021)	(0.049)	(0.024)	
	irene	-0.0377**	-0.235***	-0.264***	Irene 2011
		(0.018)	(0.037)	(0.015)	
	1.irene#34.wkcal	0.340***	0.201***	0.154***	
		(0.015)	(0.039)	(0.030)	
	N	235256	61318	27752	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-36: Regression results of volume sold around Sandy 2012 within mass merchandiser channel across store sizes for canned beans

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	0.0709**	0.162***	-0.0334	
		(0.029)	(0.036)	(0.027)	
-10	1.threat#2.hweek#1.huryear	0.0523**	0.0645*	-0.103***	
		(0.019)	(0.032)	(0.023)	
-9	1.threat#3.hweek#1.huryear	0.115***	0.0775**	0.00321	
		(0.033)	(0.028)	(0.025)	
-8	1.threat#4.hweek#1.huryear	0.0717***	-0.0230	0.0544**	
		(0.022)	(0.036)	(0.020)	
-7	1.threat#5.hweek#1.huryear	0.0882***	0.207***	0.0102	
		(0.028)	(0.041)	(0.026)	
-6	1.threat#6.hweek#1.huryear	0.103***	0.102***	0.0520**	
		(0.030)	(0.032)	(0.023)	
-5	1.threat#7.hweek#1.huryear	0.108***	-0.0226	0.113***	
		(0.023)	(0.026)	(0.020)	
-4	1.threat#8.hweek#1.huryear	0.0834***	-0.0826**	0.0190	
		(0.026)	(0.030)	(0.024)	
-3	1.threat#9.hweek#1.huryear	0.165***	-0.134***	0.0386	
		(0.017)	(0.031)	(0.025)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0367	0.000656	0.307***	
		(0.023)	(0.026)	(0.023)	
0	1.threat#12.hweek#1.huryear	0.153***	0.325***	0.230***	Sandy week
		(0.017)	(0.034)	(0.020)	
1	1.threat#13.hweek#1.huryear	0.0478**	0.0313**	0.0623**	
		(0.017)	(0.014)	(0.024)	
2	1.threat#14.hweek#1.huryear	-0.0395**	0.0918***	0.0493**	
		(0.016)	(0.025)	(0.020)	
3	1.threat#15.hweek#1.huryear	0.0127	0.183***	0.0603***	
		(0.024)	(0.020)	(0.014)	
4	1.threat#16.hweek#1.huryear	-0.0646**	0.0676*	-0.0169	
		(0.025)	(0.037)	(0.022)	
5	1.threat#17.hweek#1.huryear	-0.0418**	-0.114***	0.0119	
		(0.020)	(0.027)	(0.024)	
6	1.threat#18.hweek#1.huryear	0.0254	0.137**	0.0318	
		(0.020)	(0.050)	(0.020)	
7	1.threat#19.hweek#1.huryear	0.0594**	0.0127	-0.0610***	
		(0.026)	(0.039)	(0.016)	
8	1.threat#20.hweek#1.huryear	-0.0846*	0.168***	-0.0208	
		(0.041)	(0.026)	(0.017)	
	1.threat#1.huryear	-0.0260	-0.381***	-0.166***	
		(0.024)	(0.064)	(0.030)	
	1.threat	-0.0307	-0.180	-0.258**	
		(0.026)	(0.125)	(0.103)	
	1.huryear	0.0153	0.00611	0.208***	
		(0.025)	(0.046)	(0.028)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0246	0.0732***	0.0782***	End-of-year week
		(0.023)	(0.021)	(0.008)	
	irene	-0.101***	-0.147***	-0.359***	Irene 2011
		(0.018)	(0.021)	(0.012)	
	1.irene#34.wkcal	0.136***	0.457***	0.572***	
		(0.019)	(0.010)	(0.042)	
	N	90090	38354	27560	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-37: Regression results of volume sold around Sandy 2012 within mass merchandiser channel across store sizes for toilet paper

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	0.0151**	-0.0710***	0.0471***	
		(0.006)	(0.008)	(0.007)	
-10	1.threat#2.hweek#1.huryear	0.0121**	0.00383	-0.00509	
		(0.006)	(0.007)	(0.007)	
-9	1.threat#3.hweek#1.huryear	-0.00898	0.0574***	0.0113*	
		(0.005)	(0.006)	(0.006)	
-8	1.threat#4.hweek#1.huryear	0.0307***	0.0839***	0.0753***	
		(0.007)	(0.006)	(0.006)	
-7	1.threat#5.hweek#1.huryear	0.0191***	-0.0876***	0.00839	
		(0.006)	(0.010)	(0.007)	
-6	1.threat#6.hweek#1.huryear	-0.0115*	0.0883***	0.0156**	
		(0.006)	(0.008)	(0.006)	
-5	1.threat#7.hweek#1.huryear	-0.0758***	0.0766***	-0.0158**	
		(0.006)	(0.009)	(0.006)	
-4	1.threat#8.hweek#1.huryear	0.0840***	-0.110***	0.0186***	
		(0.006)	(0.011)	(0.006)	
-3	1.threat#9.hweek#1.huryear	0.0142**	-0.0213*	-0.00653	
		(0.006)	(0.012)	(0.007)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0525***	0.0419***	0.188***	
		(0.005)	(0.010)	(0.007)	
0	1.threat#12.hweek#1.huryear	-0.138***	-0.154***	-0.150***	Sandy week
		(0.008)	(0.011)	(0.007)	
1	1.threat#13.hweek#1.huryear	-0.00821	0.0231**	-0.0607***	
		(0.007)	(0.011)	(0.008)	
2	1.threat#14.hweek#1.huryear	-0.0545***	-0.0765***	-0.0476***	
		(0.006)	(0.013)	(0.007)	
3	1.threat#15.hweek#1.huryear	-0.00763	-0.0116	0.0377***	
		(0.006)	(0.014)	(0.006)	
4	1.threat#16.hweek#1.huryear	-0.126***	0.00906	0.00852	
		(0.006)	(0.008)	(0.006)	
5	1.threat#17.hweek#1.huryear	0.0833***	-0.0586***	-0.000770	
		(0.005)	(0.013)	(0.008)	
6	1.threat#18.hweek#1.huryear	-0.0485***	-0.0148	-0.0189**	
		(0.006)	(0.011)	(0.007)	
7	1.threat#19.hweek#1.huryear	-0.0348***	-0.0662***	-0.0354***	
		(0.004)	(0.009)	(0.008)	
8	1.threat#20.hweek#1.huryear	-0.140***	-0.176***	-0.111***	
		(0.006)	(0.012)	(0.008)	
	1.threat#1.huryear	-0.00373	-0.0223	-0.0273***	
		(0.009)	(0.013)	(0.008)	
	1.threat	0.0218	-0.142**	-0.0642	
		(0.059)	(0.053)	(0.057)	
	1.huryear	0.0262	-0.0731***	0.00689	
		(0.021)	(0.021)	(0.014)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0187	-0.0913***	0.0764***	End-of-year week
		(0.020)	(0.018)	(0.012)	
	irene	-0.158***	-0.285***	-0.209***	Irene 2011
		(0.013)	(0.014)	(0.013)	
	1.irene#34.wkcal	0.00195	0.0397**	-0.0238**	
		(0.014)	(0.018)	(0.011)	
	N	251030	64796	27800	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-38: Regression results of volume sold around Sandy 2012 within mass merchandiser channel across store sizes for dry pasta

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	0.129***	-0.0152	-0.103***	
		(0.012)	(0.012)	(0.017)	
-10	1.threat#2.hweek#1.huryear	0.0800***	-0.0120	-0.0999***	
		(0.009)	(0.021)	(0.018)	
-9	1.threat#3.hweek#1.huryear	0.0443***	0.0610***	-0.0604***	
		(0.012)	(0.014)	(0.015)	
-8	1.threat#4.hweek#1.huryear	0.115***	0.0187	-0.0709***	
		(0.013)	(0.017)	(0.017)	
-7	1.threat#5.hweek#1.huryear	0.0926***	0.103***	-0.0304**	
		(0.010)	(0.013)	(0.014)	
-6	1.threat#6.hweek#1.huryear	0.0211	0.0947***	-0.0489***	
		(0.012)	(0.026)	(0.016)	
-5	1.threat#7.hweek#1.huryear	-0.0137	0.232***	-0.0300*	
		(0.008)	(0.035)	(0.016)	
-4	1.threat#8.hweek#1.huryear	0.0259**	0.0848***	0.0110	
		(0.011)	(0.028)	(0.016)	
-3	1.threat#9.hweek#1.huryear	0.0666***	0.173***	0.0155	
		(0.012)	(0.026)	(0.017)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.141***	0.204***	0.228***	
		(0.012)	(0.025)	(0.025)	
0	1.threat#12.hweek#1.huryear	0.0647***	0.105***	0.0819***	Sandy week
		(0.015)	(0.013)	(0.027)	
1	1.threat#13.hweek#1.huryear	0.204***	0.0646***	0.000550	
		(0.013)	(0.022)	(0.020)	
2	1.threat#14.hweek#1.huryear	0.0717***	-0.145***	-0.0583***	
		(0.015)	(0.019)	(0.018)	
3	1.threat#15.hweek#1.huryear	0.146***	-0.0517***	-0.0443**	
		(0.021)	(0.009)	(0.016)	
4	1.threat#16.hweek#1.huryear	-0.0185***	-0.107***	-0.0866***	
		(0.005)	(0.020)	(0.021)	
5	1.threat#17.hweek#1.huryear	0.0497***	-0.108***	-0.0709***	
		(0.009)	(0.017)	(0.019)	
6	1.threat#18.hweek#1.huryear	0.0479***	-0.0602**	-0.0912***	
		(0.014)	(0.028)	(0.020)	
7	1.threat#19.hweek#1.huryear	0.0731***	0.00410	-0.0541***	
		(0.012)	(0.026)	(0.017)	
8	1.threat#20.hweek#1.huryear	0.0634***	0.163***	-0.0258	
		(0.021)	(0.031)	(0.019)	
	1.threat#1.huryear	0.0394**	-0.182***	-0.0662**	
		(0.019)	(0.031)	(0.023)	
	1.threat	0.251***	0.0975	-0.0134	
		(0.028)	(0.086)	(0.092)	
	1.huryear	-0.695***	0.0575	0.112***	
		(0.021)	(0.044)	(0.028)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0944***	-0.168***	-0.0715***	End-of-year week
		(0.015)	(0.036)	(0.009)	
	irene	0.0251**	0.0271	-0.302***	Irene 2011
		(0.010)	(0.022)	(0.013)	
	1.irene#34.wkcal	-0.0920***	-0.220***	0.161***	
		(0.005)	(0.023)	(0.023)	
	N	245808	63630	27788	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-39: Regression results of volume sold around Sandy 2012 within mass merchandiser channel across store sizes for bread

Relative week (t)	Independent variable	Dependent variable: ln(Volume)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.0150*	-0.0185	-0.0679***	
		(0.008)	(0.012)	(0.019)	
-10	1.threat#2.hweek#1.huryear	-0.00184	-0.0425***	-0.151***	
		(0.010)	(0.013)	(0.021)	
-9	1.threat#3.hweek#1.huryear	0.000390	0.0352**	-0.0399*	
		(0.004)	(0.016)	(0.019)	
-8	1.threat#4.hweek#1.huryear	-0.00357	0.0292**	0.0489***	
		(0.009)	(0.013)	(0.016)	
-7	1.threat#5.hweek#1.huryear	0.0280***	0.0263**	0.0385*	
		(0.009)	(0.012)	(0.021)	
-6	1.threat#6.hweek#1.huryear	-0.00105	0.0593***	0.0482***	
		(0.009)	(0.013)	(0.017)	
-5	1.threat#7.hweek#1.huryear	0.00628	0.0426***	0.0166	
		(0.010)	(0.014)	(0.016)	
-4	1.threat#8.hweek#1.huryear	0.0121	0.0252	0.0121	
		(0.009)	(0.015)	(0.018)	
-3	1.threat#9.hweek#1.huryear	0.0184*	0.0144	0.0102	
		(0.010)	(0.014)	(0.019)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.128***	0.264***	0.335***	
		(0.007)	(0.017)	(0.014)	
0	1.threat#12.hweek#1.huryear	-0.102***	-0.0990***	-0.0138	Sandy week
		(0.020)	(0.018)	(0.011)	
1	1.threat#13.hweek#1.huryear	-0.0420***	0.0299**	-0.0108	
		(0.013)	(0.012)	(0.021)	
2	1.threat#14.hweek#1.huryear	-0.00872	-0.0679***	-0.0159	
		(0.012)	(0.013)	(0.013)	
3	1.threat#15.hweek#1.huryear	-0.00633	-0.0209	-0.0254	
		(0.014)	(0.013)	(0.021)	
4	1.threat#16.hweek#1.huryear	-0.0288**	-0.0399***	0.0705**	
		(0.012)	(0.012)	(0.027)	
5	1.threat#17.hweek#1.huryear	-0.00185	-0.0524***	0.0914***	
		(0.012)	(0.014)	(0.027)	
6	1.threat#18.hweek#1.huryear	-0.00806	-0.00523	0.0742**	
		(0.010)	(0.012)	(0.027)	
7	1.threat#19.hweek#1.huryear	-0.0292**	-0.00985	0.0906***	
		(0.014)	(0.014)	(0.024)	
8	1.threat#20.hweek#1.huryear	-0.0586***	0.0373***	0.114***	
		(0.014)	(0.012)	(0.030)	
	1.threat#1.huryear	-0.0340*	-0.145***	-0.0796***	
		(0.018)	(0.016)	(0.014)	
	1.threat	0.336***	-0.135	0.0436	
		(0.072)	(0.091)	(0.082)	
	1.huryear	0.111***	0.0826***	0.0467***	
		(0.009)	(0.016)	(0.015)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0157***	-0.0484***	-0.0299***	End-of-year week
		(0.001)	(0.004)	(0.006)	
	irene	-0.143***	-0.399***	-0.389***	Irene 2011
		(0.009)	(0.016)	(0.016)	
	1.irene#34.wkcal	0.365***	0.273***	0.181***	
		(0.015)	(0.034)	(0.013)	
	N	234882	61524	27684	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-40: Regression results of unique UPC count sold around Sandy 2012 within mass merchandiser channel across store sizes for bottled water

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.0554***	-0.0488***	0.000885	
		(0.005)	(0.009)	(0.004)	
-10	1.threat#2.hweek#1.huryear	-0.0751***	-0.0328***	-0.0343***	
		(0.004)	(0.009)	(0.005)	
-9	1.threat#3.hweek#1.huryear	-0.0755***	-0.0255**	0.00141	
		(0.005)	(0.011)	(0.005)	
-8	1.threat#4.hweek#1.huryear	-0.0499***	0.0228***	0.00168	
		(0.004)	(0.007)	(0.005)	
-7	1.threat#5.hweek#1.huryear	-0.0484***	0.0377***	0.0114***	
		(0.004)	(0.006)	(0.004)	
-6	1.threat#6.hweek#1.huryear	-0.0354***	-0.00439	-0.0175***	
		(0.004)	(0.006)	(0.005)	
-5	1.threat#7.hweek#1.huryear	-0.0374***	0.0142**	0.000873	
		(0.005)	(0.006)	(0.005)	
-4	1.threat#8.hweek#1.huryear	-0.0145**	-0.0632***	-0.0113***	
		(0.006)	(0.007)	(0.004)	
-3	1.threat#9.hweek#1.huryear	-0.0267***	-0.0257***	-0.00471	
		(0.007)	(0.006)	(0.004)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0617***	0.130***	0.0746***	
		(0.008)	(0.008)	(0.006)	
0	1.threat#12.hweek#1.huryear	-0.0181***	0.0447***	-0.0203***	Sandy week
		(0.005)	(0.006)	(0.005)	
1	1.threat#13.hweek#1.huryear	-0.103***	-0.0411***	-0.0139**	
		(0.007)	(0.006)	(0.005)	
2	1.threat#14.hweek#1.huryear	-0.0532***	-0.0318***	-0.0149***	
		(0.006)	(0.006)	(0.004)	
3	1.threat#15.hweek#1.huryear	-0.0535***	-0.0170**	0.0161***	
		(0.005)	(0.007)	(0.005)	
4	1.threat#16.hweek#1.huryear	-0.0435***	0.0149**	0.00533	
		(0.005)	(0.007)	(0.004)	
5	1.threat#17.hweek#1.huryear	-0.0280***	-0.00904	0.0297***	
		(0.004)	(0.008)	(0.004)	
6	1.threat#18.hweek#1.huryear	-0.0328***	0.0238**	0.0456***	
		(0.005)	(0.008)	(0.003)	
7	1.threat#19.hweek#1.huryear	-0.0641***	-0.0312*	-0.00804*	
		(0.005)	(0.017)	(0.005)	
8	1.threat#20.hweek#1.huryear	-0.0515***	0.00361	0.0411***	
		(0.007)	(0.008)	(0.003)	
	1.threat#1.huryear	0.00353	-0.00890	-0.0284***	
		(0.008)	(0.007)	(0.008)	
	1.threat	-0.0256	-0.192**	-0.00983	
		(0.026)	(0.089)	(0.013)	
	1.huryear	0.0764***	-0.0341**	0.0718***	
		(0.011)	(0.013)	(0.011)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0368***	0.0627***	0.0852***	End-of-year week
		(0.010)	(0.009)	(0.009)	
	irene	-0.0800***	-0.0666***	-0.0260***	Irene 2011
		(0.008)	(0.022)	(0.005)	
	1.irene#34.wkcal	0.108***	0.00836	0.0422***	
		(0.007)	(0.022)	(0.004)	
	N	251150	64916	27800	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-41: Regression results of unique UPC count sold around Sandy 2012 within mass merchandiser channel across store sizes for peanut butter

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.0145*	-0.0322***	-0.0297**	
		(0.008)	(0.011)	(0.013)	
-10	1.threat#2.hweek#1.huryear	-0.0182**	-0.137***	0.000978	
		(0.008)	(0.013)	(0.012)	
-9	1.threat#3.hweek#1.huryear	0.0195***	-0.0582***	0.0374**	
		(0.006)	(0.015)	(0.014)	
-8	1.threat#4.hweek#1.huryear	0.0296***	0.0144	0.0912***	
		(0.008)	(0.012)	(0.011)	
-7	1.threat#5.hweek#1.huryear	0.0339***	0.0176	0.0700***	
		(0.009)	(0.016)	(0.011)	
-6	1.threat#6.hweek#1.huryear	0.0262**	-0.0313*	0.0553***	
		(0.009)	(0.016)	(0.012)	
-5	1.threat#7.hweek#1.huryear	-0.00476	-0.0297*	0.0289**	
		(0.007)	(0.016)	(0.014)	
-4	1.threat#8.hweek#1.huryear	0.00761	0.0164	0.0274*	
		(0.009)	(0.015)	(0.013)	
-3	1.threat#9.hweek#1.huryear	0.0152*	-0.0149	0.0324**	
		(0.008)	(0.014)	(0.013)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.114***	0.127***	0.108***	
		(0.006)	(0.018)	(0.013)	
0	1.threat#12.hweek#1.huryear	0.156***	0.191***	0.0990***	Sandy week
		(0.003)	(0.016)	(0.013)	
1	1.threat#13.hweek#1.huryear	0.0101	0.0805***	0.0114	
		(0.010)	(0.018)	(0.016)	
2	1.threat#14.hweek#1.huryear	0.0251***	0.0266*	0.0500***	
		(0.008)	(0.015)	(0.013)	
3	1.threat#15.hweek#1.huryear	0.0341***	0.0176	0.0502***	
		(0.008)	(0.012)	(0.010)	
4	1.threat#16.hweek#1.huryear	-0.00425	0.0408**	0.0202	
		(0.009)	(0.017)	(0.014)	
5	1.threat#17.hweek#1.huryear	0.0291***	-0.0298*	0.0702***	
		(0.009)	(0.015)	(0.014)	
6	1.threat#18.hweek#1.huryear	0.0295***	0.0190	0.0494***	
		(0.008)	(0.017)	(0.013)	
7	1.threat#19.hweek#1.huryear	-0.0205**	-0.00480	0.0469***	
		(0.008)	(0.015)	(0.012)	
8	1.threat#20.hweek#1.huryear	0.0475***	-0.0330	0.0819***	
		(0.008)	(0.020)	(0.010)	
	1.threat#1.huryear	-0.0986***	-0.0844***	-0.0354**	
		(0.010)	(0.019)	(0.016)	
	1.threat	0.106***	-0.249***	-0.211***	
		(0.019)	(0.078)	(0.064)	
	1.huryear	0.147***	0.197***	0.220***	
		(0.010)	(0.020)	(0.017)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0367***	0.0648***	0.0316***	End-of-year week
		(0.007)	(0.008)	(0.003)	
	irene	-0.0507***	-0.0988***	-0.199***	Irene 2011
		(0.005)	(0.009)	(0.004)	
	1.irene#34.wkcal	0.238***	0.00413	0.215***	
		(0.006)	(0.017)	(0.026)	
	N	235256	61318	27752	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-42: Regression results of unique UPC count sold around Sandy 2012 within mass merchandiser channel across store sizes for canned beans

Relative week (t)	Independent variable	Dependent variable: ln(UPC count) (1) Small	(2) Medium	(3) Large	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0179	0.0266	-0.0418**	
		(0.016)	(0.020)	(0.015)	
-10	1.threat#2.hweek#1.huryear	-0.0586***	-0.0244	-0.0567***	
		(0.020)	(0.020)	(0.012)	
-9	1.threat#3.hweek#1.huryear	0.0335*	-0.0427**	-0.0579***	
		(0.016)	(0.018)	(0.014)	
-8	1.threat#4.hweek#1.huryear	-0.0702***	-0.0482**	-0.0670***	
		(0.014)	(0.018)	(0.016)	
-7	1.threat#5.hweek#1.huryear	-0.00843	-0.0255	-0.0284*	
		(0.011)	(0.020)	(0.014)	
-6	1.threat#6.hweek#1.huryear	0.0200	-0.0125	-0.0178	
		(0.012)	(0.020)	(0.012)	
-5	1.threat#7.hweek#1.huryear	-0.0485***	-0.0936***	0.0149	
		(0.009)	(0.020)	(0.014)	
-4	1.threat#8.hweek#1.huryear	-0.0365**	-0.0689***	0.000516	
		(0.013)	(0.021)	(0.015)	
-3	1.threat#9.hweek#1.huryear	-0.0155	-0.0686***	-0.00894	
		(0.016)	(0.021)	(0.018)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.0487***	-0.0290	0.0131	
		(0.016)	(0.019)	(0.015)	
0	1.threat#12.hweek#1.huryear	0.0134	0.0172	0.0640***	Sandy week
		(0.012)	(0.025)	(0.013)	
1	1.threat#13.hweek#1.huryear	-0.0275***	-0.0864***	-0.0217	
		(0.007)	(0.018)	(0.019)	
2	1.threat#14.hweek#1.huryear	-0.0294***	-0.0555**	0.0132	
		(0.010)	(0.022)	(0.017)	
3	1.threat#15.hweek#1.huryear	-0.0776***	-0.0276	0.00489	
		(0.010)	(0.019)	(0.014)	
4	1.threat#16.hweek#1.huryear	-0.0674***	-0.00449	-0.0155	
		(0.015)	(0.021)	(0.019)	
5	1.threat#17.hweek#1.huryear	-0.0422**	-0.0860***	0.00971	
		(0.016)	(0.020)	(0.015)	
6	1.threat#18.hweek#1.huryear	-0.00940	-0.0186	0.0341**	
		(0.011)	(0.024)	(0.014)	
7	1.threat#19.hweek#1.huryear	-0.0493***	0.0144	-0.00590	
		(0.013)	(0.025)	(0.014)	
8	1.threat#20.hweek#1.huryear	-0.0793***	-0.0354*	-0.00273	
		(0.016)	(0.020)	(0.014)	
	1.threat#1.huryear	0.0350***	-0.205***	-0.0262	
		(0.011)	(0.029)	(0.027)	
	1.threat	0.00918	-0.117	-0.193**	
		(0.010)	(0.069)	(0.075)	
	1.huryear	0.0181**	0.207***	0.261***	
		(0.007)	(0.028)	(0.024)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.00876**	-0.0184***	0.00548***	End-of-year week
		(0.003)	(0.001)	(0.002)	
	irene	-0.00834	-0.0575***	-0.141***	Irene 2011
		(0.006)	(0.012)	(0.006)	
	1.irene#34.wkcal	-0.000502	0.236***	0.257***	
		(0.006)	(0.015)	(0.010)	
	N	90090	38354	27560	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-43: Regression results of unique UPC count sold around Sandy 2012 within mass merchandiser channel across store sizes for toilet paper

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	-0.0341***	-0.00163	0.0177***	
		(0.003)	(0.004)	(0.003)	
-10	1.threat#2.hweek#1.huryear	-0.0310***	-0.0271***	0.00812**	
		(0.003)	(0.005)	(0.003)	
-9	1.threat#3.hweek#1.huryear	-0.0547***	-0.0117**	0.0202***	
		(0.003)	(0.004)	(0.003)	
-8	1.threat#4.hweek#1.huryear	-0.0255***	-0.0136***	0.0276***	
		(0.003)	(0.003)	(0.003)	
-7	1.threat#5.hweek#1.huryear	-0.00829***	0.0125***	0.00386	
		(0.003)	(0.003)	(0.004)	
-6	1.threat#6.hweek#1.huryear	-0.0108***	0.0132***	0.0266***	
		(0.003)	(0.004)	(0.003)	
-5	1.threat#7.hweek#1.huryear	-0.0240***	0.00486	0.0460***	
		(0.003)	(0.006)	(0.004)	
-4	1.threat#8.hweek#1.huryear	0.00269	0.0180***	0.0453***	
		(0.003)	(0.005)	(0.004)	
-3	1.threat#9.hweek#1.huryear	-0.00191	-0.00186	0.0228***	
		(0.003)	(0.006)	(0.003)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0270***	0.0573***	0.0117**	
		(0.003)	(0.004)	(0.004)	
0	1.threat#12.hweek#1.huryear	-0.00923***	0.00573	-0.0167***	Sandy week
		(0.003)	(0.004)	(0.004)	
1	1.threat#13.hweek#1.huryear	0.0156***	0.0372***	0.00241	
		(0.003)	(0.005)	(0.004)	
2	1.threat#14.hweek#1.huryear	0.0102***	0.00813*	0.0125***	
		(0.002)	(0.004)	(0.003)	
3	1.threat#15.hweek#1.huryear	0.0187***	0.0205***	0.0157***	
		(0.003)	(0.005)	(0.003)	
4	1.threat#16.hweek#1.huryear	0.0138***	0.0307***	0.0208***	
		(0.003)	(0.004)	(0.003)	
5	1.threat#17.hweek#1.huryear	0.0289***	0.0261***	0.0148***	
		(0.003)	(0.004)	(0.003)	
6	1.threat#18.hweek#1.huryear	0.00722***	0.00568	0.00330	
		(0.003)	(0.004)	(0.003)	
7	1.threat#19.hweek#1.huryear	-0.0211***	0.0292***	0.0218***	
		(0.006)	(0.006)	(0.004)	
8	1.threat#20.hweek#1.huryear	-0.00722***	0.0299***	0.0218***	
		(0.002)	(0.003)	(0.002)	
	1.threat#1.huryear	-0.00881	-0.0408***	-0.0248***	
		(0.009)	(0.005)	(0.005)	
	1.threat	-0.0243	-0.0790***	-0.00158	
		(0.016)	(0.027)	(0.008)	
	1.huryear	-0.000750	0.0347***	0.0668***	
		(0.015)	(0.007)	(0.007)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	0.0615***	0.00816	-0.0234***	End-of-year week
		(0.014)	(0.006)	(0.006)	
	irene	-0.0705***	-0.0457***	-0.0128***	Irene 2011
		(0.007)	(0.004)	(0.004)	
	1.irene#34.wkcal	0.0442***	0.0299***	-0.00439***	
		(0.004)	(0.004)	(0.001)	
	N	251030	64796	27800	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-44: Regression results of unique UPC count sold around Sandy 2012 within mass merchandiser channel across store sizes for dry pasta

Relative week (t)	Independent variable	Dependent variable: ln(UPC count)			Remarks
		(1) Small	(2) Medium	(3) Large	
-11	1.threat#1.hweek#1.huryear	0.0835***	0.0404***	0.0265**	
		(0.006)	(0.008)	(0.012)	
-10	1.threat#2.hweek#1.huryear	0.0712***	0.0291**	0.0308**	
		(0.006)	(0.011)	(0.011)	
-9	1.threat#3.hweek#1.huryear	0.0534***	0.0510***	-0.00940	
		(0.006)	(0.010)	(0.013)	
-8	1.threat#4.hweek#1.huryear	0.0671***	0.0755***	0.0280**	
		(0.005)	(0.013)	(0.012)	
-7	1.threat#5.hweek#1.huryear	0.0693***	0.0407***	-0.00299	
		(0.004)	(0.012)	(0.012)	
-6	1.threat#6.hweek#1.huryear	0.0311***	0.0499***	-0.0324**	
		(0.006)	(0.010)	(0.012)	
-5	1.threat#7.hweek#1.huryear	0.0239***	0.107***	-0.0113	
		(0.004)	(0.012)	(0.012)	
-4	1.threat#8.hweek#1.huryear	0.0304***	-0.00623	-0.00416	
		(0.007)	(0.012)	(0.012)	
-3	1.threat#9.hweek#1.huryear	0.0587***	0.0486***	0.0147	
		(0.006)	(0.010)	(0.011)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0369***	0.118***	0.0319**	
		(0.004)	(0.013)	(0.015)	
0	1.threat#12.hweek#1.huryear	0.0275***	0.0834***	0.00440	Sandy week
		(0.006)	(0.012)	(0.012)	
1	1.threat#13.hweek#1.huryear	0.0256***	0.0827***	-0.0313**	
		(0.006)	(0.018)	(0.013)	
2	1.threat#14.hweek#1.huryear	0.000398	-0.0311**	-0.000510	
		(0.007)	(0.012)	(0.014)	
3	1.threat#15.hweek#1.huryear	-0.0291***	-0.0196*	0.00708	
		(0.005)	(0.011)	(0.013)	
4	1.threat#16.hweek#1.huryear	0.00532	-0.0313**	-0.00345	
		(0.006)	(0.013)	(0.011)	
5	1.threat#17.hweek#1.huryear	0.00255	-0.0393***	-0.0146	
		(0.004)	(0.012)	(0.013)	
6	1.threat#18.hweek#1.huryear	0.0135	0.0127	-0.00983	
		(0.009)	(0.013)	(0.013)	
7	1.threat#19.hweek#1.huryear	0.0334***	0.00335	0.00621	
		(0.006)	(0.011)	(0.013)	
8	1.threat#20.hweek#1.huryear	0.00824	0.106***	-0.00671	
		(0.008)	(0.013)	(0.014)	
	1.threat#1.huryear	-0.0201**	-0.106***	-0.103***	
		(0.009)	(0.015)	(0.017)	
	1.threat	0.120***	-0.0618	-0.272***	
		(0.018)	(0.060)	(0.069)	
	1.huryear	-0.000956	0.0650***	0.0801***	
		(0.013)	(0.022)	(0.019)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.0738***	-0.0210*	-0.0152***	End-of-year week
		(0.012)	(0.011)	(0.001)	
	irene	-0.110***	-0.0673***	-0.229***	Irene 2011
		(0.007)	(0.010)	(0.007)	
	1.irene#34.wkcal	0.0507***	-0.0753***	0.213***	
		(0.007)	(0.013)	(0.020)	
	N	245808	63630	27788	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-45: Regression results of unique UPC count sold around Sandy 2012 within mass merchandiser channel across store sizes for bread

Relative week (t)	Independent variable	Dependent variable: ln(UPC count) (1) Small	(2) Medium	(3) Large	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0145*	0.0153	0.0242*	
		(0.007)	(0.014)	(0.012)	
-10	1.threat#2.hweek#1.huryear	0.00238	0.00191	0.0149	
		(0.008)	(0.014)	(0.012)	
-9	1.threat#3.hweek#1.huryear	-0.0186*	0.0196	-0.0183	
		(0.010)	(0.017)	(0.014)	
-8	1.threat#4.hweek#1.huryear	-0.0135*	0.0141	0.0132	
		(0.007)	(0.012)	(0.013)	
-7	1.threat#5.hweek#1.huryear	0.000665	0.0253**	0.0158	
		(0.008)	(0.012)	(0.013)	
-6	1.threat#6.hweek#1.huryear	-0.0115	0.0176	0.00310	
		(0.008)	(0.012)	(0.013)	
-5	1.threat#7.hweek#1.huryear	-0.00948	0.00568	0.0366***	
		(0.007)	(0.014)	(0.013)	
-4	1.threat#8.hweek#1.huryear	-0.0139*	-0.00439	0.0182	
		(0.008)	(0.013)	(0.012)	
-3	1.threat#9.hweek#1.huryear	0.00398	-0.00615	0.00391	
		(0.007)	(0.014)	(0.013)	
-2	1.threat#10.hweek#1.huryear		(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.00615	0.0226*	0.0162	
		(0.007)	(0.013)	(0.010)	
0	1.threat#12.hweek#1.huryear	-0.0421***	-0.0558***	-0.00875	Sandy week
		(0.010)	(0.014)	(0.009)	
1	1.threat#13.hweek#1.huryear	-0.00963	-0.0174	-0.0301**	
		(0.008)	(0.013)	(0.011)	
2	1.threat#14.hweek#1.huryear	-0.00614	-0.0364**	-0.0452***	
		(0.009)	(0.014)	(0.010)	
3	1.threat#15.hweek#1.huryear	-0.0210*	-0.0428**	-0.106***	
		(0.011)	(0.017)	(0.014)	
4	1.threat#16.hweek#1.huryear	-0.0141	-0.0594***	-0.0482*	
		(0.010)	(0.017)	(0.028)	
5	1.threat#17.hweek#1.huryear	-0.0103	-0.0678***	-0.0364	
		(0.011)	(0.019)	(0.028)	
6	1.threat#18.hweek#1.huryear	-0.0291***	-0.0685***	-0.0503	
		(0.009)	(0.017)	(0.029)	
7	1.threat#19.hweek#1.huryear	-0.0316***	-0.0286	0.0179	
		(0.009)	(0.021)	(0.030)	
8	1.threat#20.hweek#1.huryear	-0.0514***	-0.0413**	-0.0520*	
		(0.009)	(0.017)	(0.030)	
	1.threat#1.huryear	0.0239*	-0.0880***	-0.0255**	
		(0.012)	(0.016)	(0.011)	
	1.threat	0.0635	-0.446***	-0.174***	
		(0.044)	(0.122)	(0.055)	
	1.huryear	0.00770	0.0428**	0.0160	
		(0.005)	(0.017)	(0.019)	
	wk_thg	0	0	0	Thanksgiving week
		(0.000)	(0.000)	(0.000)	
	wk_eoy	-0.00226***	-0.0659***	-0.109***	End-of-year week
		(0.000)	(0.006)	(0.012)	
	irene	-0.139***	-0.190***	-0.229***	Irene 2011
		(0.005)	(0.010)	(0.012)	
	1.irene#34.wkcal	0.259***	-0.0225	0.155***	
		(0.010)	(0.022)	(0.022)	
	N	234882	61524	27684	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-46: Regression results of household volume per member purchased around Sandy 2012 for pooled household sample across product categories

Relative week (t)	Independent variable	Dependent variable: ln(volume per member)						Remarks
		(1) Bottled water	(2) Peanut butter	(3) Canned beans	(4) Toilet paper	(5) Dry pasta	(6) Bread	
-11	1.threat#1.hweek#1.huryear	0.0333	0.180***	0.107*	-0.0381	-0.306***	-0.234*	
		(0.094)	(0.068)	(0.061)	(0.089)	(0.115)	(0.123)	
-10	1.threat#2.hweek#1.huryear	-0.0364	0.171**	0.0557	-0.182**	-0.427***	-0.438***	
		(0.095)	(0.068)	(0.069)	(0.081)	(0.105)	(0.112)	
-9	1.threat#3.hweek#1.huryear	-0.0169	0.169**	-0.0261	-0.325***	-0.0453	-0.205*	
		(0.105)	(0.071)	(0.067)	(0.092)	(0.110)	(0.116)	
-8	1.threat#4.hweek#1.huryear	0.0564	0.304***	0.0612	-0.213**	0.0100	-0.0667	
		(0.098)	(0.070)	(0.062)	(0.090)	(0.092)	(0.126)	
-7	1.threat#5.hweek#1.huryear	-0.0208	0.248***	-0.0196	-0.216**	-0.0540	0.0714	
		(0.091)	(0.068)	(0.057)	(0.092)	(0.107)	(0.121)	
-6	1.threat#6.hweek#1.huryear	-0.0414	0.165**	-0.0911	-0.136	-0.228**	0.00923	
		(0.086)	(0.070)	(0.063)	(0.086)	(0.102)	(0.117)	
-5	1.threat#7.hweek#1.huryear	-0.0623	0.187***	0.0378	-0.138	-0.0493	-0.211*	
		(0.085)	(0.071)	(0.069)	(0.085)	(0.123)	(0.110)	
-4	1.threat#8.hweek#1.huryear	-0.198**	0.113*	-0.112*	-0.219**	-0.204**	-0.262**	
		(0.090)	(0.063)	(0.064)	(0.097)	(0.101)	(0.109)	
-3	1.threat#9.hweek#1.huryear	-0.0248	0.0945	-0.0255	-0.172	-0.121	-0.146	
		(0.088)	(0.068)	(0.062)	(0.106)	(0.111)	(0.126)	
-2	1.threat#10.hweek#1.huryear	(omitted)						Base week
-1	1.threat#11.hweek#1.huryear	0.512***	0.120*	-0.0772	0.153*	-0.0194	0.419***	
		(0.098)	(0.068)	(0.066)	(0.087)	(0.132)	(0.134)	
0	1.threat#12.hweek#1.huryear	0.278***	0.127*	-0.225***	-0.393***	-0.592***	-0.554***	Sandy week
		(0.100)	(0.066)	(0.077)	(0.100)	(0.125)	(0.161)	
1	1.threat#13.hweek#1.huryear	-0.0565	0.168**	-0.0221	-0.181**	-0.212**	-0.149	
		(0.099)	(0.072)	(0.066)	(0.087)	(0.099)	(0.134)	
2	1.threat#14.hweek#1.huryear	-0.0187	0.275***	-0.0318	-0.141*	-0.119	0.170	
		(0.091)	(0.070)	(0.065)	(0.085)	(0.103)	(0.119)	
3	1.threat#15.hweek#1.huryear	0.0198	0.293***	0.0299	-0.101	-0.172	-0.164	
		(0.099)	(0.067)	(0.064)	(0.092)	(0.107)	(0.121)	
4	1.threat#16.hweek#1.huryear	-0.187**	0.198***	-0.0244	-0.122	-0.275**	-0.228*	
		(0.086)	(0.070)	(0.060)	(0.093)	(0.114)	(0.121)	
5	1.threat#17.hweek#1.huryear	-0.0184	0.240***	-0.0803	-0.119	-0.115	-0.142	
		(0.081)	(0.072)	(0.064)	(0.078)	(0.123)	(0.118)	
6	1.threat#18.hweek#1.huryear	-0.0629	0.331***	0.0170	-0.197**	-0.132	-0.0979	
		(0.089)	(0.077)	(0.065)	(0.079)	(0.112)	(0.133)	
7	1.threat#19.hweek#1.huryear	-0.0382	0.348***	-0.0353	-0.000179	-0.0904	-0.140	
		(0.083)	(0.074)	(0.060)	(0.091)	(0.097)	(0.115)	
8	1.threat#20.hweek#1.huryear	0.0276	0.336***	-0.0846	-0.150*	-0.143	-0.168	
		(0.077)	(0.065)	(0.063)	(0.081)	(0.106)	(0.109)	
	1.threat#1.huryear	0.0405	-0.162***	0.0157	0.129**	0.158*	0.0760	
		(0.072)	(0.049)	(0.049)	(0.064)	(0.087)	(0.086)	
	1.threat	-0.0359	-0.0839***	-0.195***	-0.227***	0.317***	-0.000482	
		(0.054)	(0.030)	(0.027)	(0.037)	(0.041)	(0.091)	
	1.huryear	0.0275**	-0.0634***	-0.00218	-0.0779***	-0.0367***	-0.188***	
		(0.012)	(0.007)	(0.007)	(0.008)	(0.009)	(0.015)	
	0.irene#34.wkcal	-0.482***	-0.197***	-0.144**	-0.0933	-0.158**	0.303**	
		(0.140)	(0.073)	(0.068)	(0.076)	(0.067)	(0.147)	Irene 2011
	0.irene#35.wkcal	-0.261***	0.0142	0.0594	0.321***	-0.137**	0.188**	
		(0.075)	(0.051)	(0.039)	(0.062)	(0.059)	(0.094)	
	N	1658040	1658040	1658040	1658040	1658040	1658040	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Calendar-week fixed effects are included. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-47: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across binary characteristics for bottled water

Relative week (t)	Regressor	Dependent variable: ln(volume per member)								Remarks
		Median income & above		Black/African American		College education		With children		
		b	se	b	se	b	se	b	se	
-11	1.threat#1.hweek#1.huryear#1.demog	0.321	(0.459)	0.0454	(0.429)	0.730***	(0.228)	-0.00629	(0.169)	
-10	1.threat#2.hweek#1.huryear#1.demog	-0.511	(0.357)	-0.329	(0.440)	0.0664	(0.215)	0.142	(0.180)	
-9	1.threat#3.hweek#1.huryear#1.demog	-0.449	(0.362)	0.777	(0.516)	-0.278	(0.192)	0.399**	(0.175)	
-8	1.threat#4.hweek#1.huryear#1.demog	0.953**	(0.429)	0.0869	(0.416)	-0.0410	(0.195)	0.245	(0.182)	
-7	1.threat#5.hweek#1.huryear#1.demog	-0.158	(0.326)	1.022*	(0.547)	0.00746	(0.205)	-0.0403	(0.188)	
-6	1.threat#6.hweek#1.huryear#1.demog	0.0800	(0.340)	0.183	(0.464)	-0.0162	(0.200)	0.180	(0.183)	
-5	1.threat#7.hweek#1.huryear#1.demog	-0.501	(0.310)	0.0403	(0.381)	-0.137	(0.164)	0.254	(0.183)	
-4	1.threat#8.hweek#1.huryear#1.demog	-0.0618	(0.457)	0.299	(0.439)	-0.0738	(0.176)	0.120	(0.191)	
-3	1.threat#9.hweek#1.huryear#1.demog	-0.232	(0.334)	0.0758	(0.485)	0.0516	(0.178)	-0.0899	(0.193)	
-2	1.threat#10.hweek#1.huryear#1.demog	0.0939	(0.440)	0.460	(0.546)	0.160	(0.160)	0.141	(0.131)	Base week
-1	1.threat#11.hweek#1.huryear#1.demog	0.0560	(0.385)	-0.0195	(0.391)	-0.318*	(0.190)	0.379*	(0.215)	
0	1.threat#12.hweek#1.huryear#1.demog	0.302	(0.373)	0.269	(0.543)	-0.216	(0.182)	0.110	(0.157)	Sandy week
1	1.threat#13.hweek#1.huryear#1.demog	-0.207	(0.414)	0.491	(0.468)	0.0384	(0.173)	0.428**	(0.179)	
2	1.threat#14.hweek#1.huryear#1.demog	0.335	(0.395)	0.766*	(0.434)	-0.310*	(0.175)	0.183	(0.152)	
3	1.threat#15.hweek#1.huryear#1.demog	-0.384	(0.305)	-0.0658	(0.373)	-0.0703	(0.171)	0.144	(0.173)	
4	1.threat#16.hweek#1.huryear#1.demog	-0.455*	(0.265)	0.0698	(0.424)	0.109	(0.195)	0.261*	(0.138)	
5	1.threat#17.hweek#1.huryear#1.demog	0.313	(0.324)	-0.253	(0.386)	-0.145	(0.158)	0.132	(0.171)	
6	1.threat#18.hweek#1.huryear#1.demog	0.0761	(0.345)	-0.00752	(0.336)	-0.0713	(0.178)	-0.0325	(0.166)	
7	1.threat#19.hweek#1.huryear#1.demog	0.101	(0.400)	0.258	(0.417)	-0.102	(0.167)	0.0755	(0.164)	
8	1.threat#20.hweek#1.huryear#1.demog	0.0263	(0.339)	-0.309	(0.327)	-0.0744	(0.170)	0.0309	(0.161)	
-11	1.threat#1.hweek#1.huryear	0.0246	(0.094)	0.0441	(0.095)	-0.0510	(0.103)	0.140	(0.146)	
-10	1.threat#2.hweek#1.huryear	-0.0135	(0.099)	-0.0160	(0.099)	-0.0226	(0.103)	-0.0423	(0.168)	
-9	1.threat#3.hweek#1.huryear	0.00388	(0.104)	-0.0249	(0.108)	0.0478	(0.119)	-0.219	(0.178)	
-8	1.threat#4.hweek#1.huryear	0.0235	(0.101)	0.0661	(0.098)	0.0862	(0.108)	-0.0266	(0.173)	
-7	1.threat#5.hweek#1.huryear	-0.0112	(0.092)	-0.0355	(0.097)	0.00177	(0.104)	0.112	(0.170)	
-6	1.threat#6.hweek#1.huryear	-0.0408	(0.090)	-0.0341	(0.088)	-0.0153	(0.093)	-0.0759	(0.166)	
-5	1.threat#7.hweek#1.huryear	-0.0396	(0.083)	-0.0514	(0.085)	-0.0183	(0.091)	-0.152	(0.165)	
-4	1.threat#8.hweek#1.huryear	-0.192**	(0.090)	-0.194**	(0.091)	-0.163	(0.100)	-0.186	(0.179)	
-3	1.threat#9.hweek#1.huryear	-0.0124	(0.090)	-0.0148	(0.089)	-0.00874	(0.095)	0.145	(0.193)	
-2	1.threat#10.hweek#1.huryear					(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	0.514***	(0.097)	0.525***	(0.102)	0.583***	(0.109)	0.328*	(0.174)	
0	1.threat#12.hweek#1.huryear	0.270**	(0.105)	0.283***	(0.099)	0.333***	(0.105)	0.296*	(0.163)	Sandy week
1	1.threat#13.hweek#1.huryear	-0.0450	(0.097)	-0.0573	(0.101)	-0.0385	(0.108)	-0.278	(0.183)	
2	1.threat#14.hweek#1.huryear	-0.0279	(0.093)	-0.0266	(0.093)	0.0510	(0.100)	-0.0550	(0.144)	
3	1.threat#15.hweek#1.huryear	0.0381	(0.096)	0.0335	(0.099)	0.0539	(0.108)	0.0125	(0.178)	
4	1.threat#16.hweek#1.huryear	-0.166*	(0.086)	-0.176**	(0.088)	-0.179**	(0.088)	-0.282**	(0.135)	
5	1.threat#17.hweek#1.huryear	-0.0268	(0.084)	0.000188	(0.082)	0.0269	(0.086)	-0.0166	(0.152)	
6	1.threat#18.hweek#1.huryear	-0.0622	(0.086)	-0.0507	(0.092)	-0.0286	(0.100)	0.0636	(0.179)	
7	1.threat#19.hweek#1.huryear	-0.0385	(0.081)	-0.0330	(0.083)	0.000522	(0.089)	0.00662	(0.163)	
8	1.threat#20.hweek#1.huryear	0.0302	(0.080)	0.0476	(0.080)	0.0623	(0.085)	0.106	(0.136)	
	1.threat#1.huryear	0.0370	(0.072)	0.0286	(0.074)	0.0168	(0.078)	-0.0617	(0.115)	
	1.threat	-0.0353	(0.054)	-0.0325	(0.055)	-0.0365	(0.054)	-0.0573	(0.055)	
	1.huryear	0.0275**	(0.012)	0.0275**	(0.012)	0.0275**	(0.012)	0.0273**	(0.012)	
	1.select	0.222***	(0.078)	-0.382***	(0.087)	-0.0253	(0.034)	-0.325***	(0.041)	
	1.irene#34.wkcal	-0.478***	(0.138)	-0.480***	(0.140)	-0.481***	(0.140)	-0.471***	(0.137)	
	1.irene#35.wkcal	-0.261***	(0.075)	-0.263***	(0.075)	-0.260***	(0.075)	-0.244***	(0.074)	
	N	1658040		1658040		1658040		1658040		

Significance level: ***0.01; ** 0.05; *0.1. Standard errors are clustered at county level.

Table B-48: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across binary characteristics for peanut butter

Relative week (t)	Regressor	Dependent variable: ln(volume per member)								Remarks
		Median income & above		Black/African American		College education		With children		
		b	se	b	se	b	se	b	se	
-11	1.threat#1.hweek#1.huryear#1.demog	0.418*	(0.254)	-0.194	(0.228)	0.0566	(0.137)	0.0623	(0.120)	
-10	1.threat#2.hweek#1.huryear#1.demog	-0.331*	(0.201)	-0.0343	(0.236)	-0.153	(0.122)	0.159	(0.114)	
-9	1.threat#3.hweek#1.huryear#1.demog	-0.0862	(0.226)	0.215	(0.315)	-0.0267	(0.125)	0.136	(0.095)	
-8	1.threat#4.hweek#1.huryear#1.demog	0.256	(0.308)	0.0788	(0.250)	0.0425	(0.132)	-0.0515	(0.150)	
-7	1.threat#5.hweek#1.huryear#1.demog	0.103	(0.218)	0.0375	(0.245)	0.0940	(0.133)	-0.0236	(0.119)	
-6	1.threat#6.hweek#1.huryear#1.demog	0.434*	(0.260)	-0.257	(0.189)	0.0664	(0.115)	-0.00526	(0.101)	
-5	1.threat#7.hweek#1.huryear#1.demog	0.105	(0.190)	0.174	(0.249)	-0.0624	(0.123)	0.0542	(0.096)	
-4	1.threat#8.hweek#1.huryear#1.demog	0.200	(0.227)	0.397	(0.248)	0.0232	(0.114)	0.0510	(0.100)	
-3	1.threat#9.hweek#1.huryear#1.demog	0.434*	(0.257)	-0.151	(0.206)	0.0601	(0.131)	-0.122	(0.097)	
-2	1.threat#10.hweek#1.huryear#1.demog	0.461	(0.285)	-0.243	(0.160)	0.0374	(0.116)	-0.0856	(0.090)	Base week
-1	1.threat#11.hweek#1.huryear#1.demog	0.102	(0.214)	-0.284	(0.250)	-0.00671	(0.132)	0.00648	(0.100)	
0	1.threat#12.hweek#1.huryear#1.demog	0.447	(0.272)	-0.167	(0.214)	0.116	(0.133)	0.0923	(0.100)	Sandy week
1	1.threat#13.hweek#1.huryear#1.demog	0.0659	(0.222)	0.0126	(0.240)	-0.0891	(0.117)	0.0298	(0.121)	
2	1.threat#14.hweek#1.huryear#1.demog	0.0742	(0.218)	0.206	(0.236)	0.0640	(0.140)	-0.131	(0.111)	
3	1.threat#15.hweek#1.huryear#1.demog	0.225	(0.240)	0.167	(0.259)	0.0450	(0.122)	-0.108	(0.120)	
4	1.threat#16.hweek#1.huryear#1.demog	0.283	(0.230)	-0.174	(0.178)	-0.104	(0.114)	0.104	(0.107)	
5	1.threat#17.hweek#1.huryear#1.demog	0.401	(0.266)	-0.369**	(0.177)	-0.0208	(0.133)	-0.00239	(0.117)	
6	1.threat#18.hweek#1.huryear#1.demog	0.329	(0.355)	-0.485***	(0.188)	0.156	(0.153)	0.251*	(0.129)	
7	1.threat#19.hweek#1.huryear#1.demog	-0.168	(0.214)	0.418	(0.332)	-0.245**	(0.119)	0.0785	(0.115)	
8	1.threat#20.hweek#1.huryear#1.demog	0.0395	(0.195)	-0.0345	(0.214)	0.270**	(0.135)	-0.124	(0.133)	
-11	1.threat#1.hweek#1.huryear	0.181***	(0.069)	0.178**	(0.070)	0.177**	(0.072)	0.230*	(0.137)	
-10	1.threat#2.hweek#1.huryear	0.202***	(0.070)	0.166**	(0.070)	0.199***	(0.074)	0.148	(0.108)	
-9	1.threat#3.hweek#1.huryear	0.190***	(0.073)	0.157**	(0.073)	0.179**	(0.077)	0.163	(0.104)	
-8	1.threat#4.hweek#1.huryear	0.312***	(0.068)	0.295***	(0.071)	0.303***	(0.074)	0.440***	(0.161)	
-7	1.threat#5.hweek#1.huryear	0.262***	(0.072)	0.241***	(0.071)	0.240***	(0.073)	0.363***	(0.124)	
-6	1.threat#6.hweek#1.huryear	0.166**	(0.071)	0.165**	(0.071)	0.161**	(0.076)	0.266**	(0.107)	
-5	1.threat#7.hweek#1.huryear	0.200***	(0.070)	0.176**	(0.071)	0.202***	(0.075)	0.243**	(0.113)	
-4	1.threat#8.hweek#1.huryear	0.123*	(0.066)	0.0963	(0.065)	0.115*	(0.067)	0.172*	(0.093)	
-3	1.threat#9.hweek#1.huryear	0.0956	(0.068)	0.0921	(0.069)	0.0912	(0.075)	0.284**	(0.117)	
-2	1.threat#10.hweek#1.huryear					(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	0.134*	(0.069)	0.121*	(0.071)	0.127*	(0.075)	0.212**	(0.106)	
0	1.threat#12.hweek#1.huryear	0.127*	(0.068)	0.125*	(0.068)	0.115	(0.070)	0.154	(0.098)	Sandy week
1	1.threat#13.hweek#1.huryear	0.183**	(0.072)	0.161**	(0.074)	0.187**	(0.075)	0.243**	(0.121)	
2	1.threat#14.hweek#1.huryear	0.290***	(0.071)	0.263***	(0.072)	0.271***	(0.078)	0.471***	(0.104)	
3	1.threat#15.hweek#1.huryear	0.302***	(0.067)	0.282***	(0.068)	0.292***	(0.072)	0.472***	(0.124)	
4	1.threat#16.hweek#1.huryear	0.205***	(0.071)	0.196***	(0.072)	0.219***	(0.075)	0.216*	(0.128)	
5	1.threat#17.hweek#1.huryear	0.243***	(0.072)	0.244***	(0.075)	0.249***	(0.078)	0.339***	(0.119)	
6	1.threat#18.hweek#1.huryear	0.336***	(0.077)	0.337***	(0.078)	0.314***	(0.079)	0.239**	(0.117)	
7	1.threat#19.hweek#1.huryear	0.372***	(0.072)	0.331***	(0.075)	0.390***	(0.080)	0.386***	(0.120)	
8	1.threat#20.hweek#1.huryear	0.352***	(0.067)	0.331***	(0.068)	0.302***	(0.071)	0.527***	(0.130)	
	1.threat#1.huryear	-0.179***	(0.049)	-0.155***	(0.050)	-0.167***	(0.052)	-0.259***	(0.075)	
	1.threat	-0.0853***	(0.029)	-0.0784***	(0.030)	-0.0796***	(0.030)	-0.0906***	(0.032)	
	1.huryear	-0.0634***	(0.007)	-0.0634***	(0.007)	-0.0634***	(0.007)	-0.0635***	(0.007)	
	1.select	-0.445***	(0.032)	-0.609***	(0.037)	0.203***	(0.016)	-0.101***	(0.018)	
	1.irene#34.wkcal	-0.204***	(0.072)	-0.194***	(0.073)	-0.197***	(0.073)	-0.194***	(0.074)	
	1.irene#35.wkcal	0.0152	(0.051)	0.0105	(0.051)	0.0103	(0.050)	0.0195	(0.051)	
	N	1658040		1658040		1658040		1658040		

Significance level: ***0.01; ** 0.05; *0.1. Standard errors are clustered at county level.

Table B-49: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across binary characteristics for canned beans

Relative week (t)	Regressor	Dependent variable: ln(volume per member)								Remarks
		Median income & above		Black/African American		College education		With children		
		b	se	b	se	b	se	b	se	
-11	1.threat#1.hweek#1.huryear#1.demog	0.321	(0.459)	0.0454	(0.429)	0.730***	(0.228)	-0.00629	(0.169)	
-10	1.threat#2.hweek#1.huryear#1.demog	-0.511	(0.357)	-0.329	(0.440)	0.0664	(0.215)	0.142	(0.180)	
-9	1.threat#3.hweek#1.huryear#1.demog	-0.449	(0.362)	0.777	(0.516)	-0.278	(0.192)	0.399**	(0.175)	
-8	1.threat#4.hweek#1.huryear#1.demog	0.953**	(0.429)	0.0869	(0.416)	-0.0410	(0.195)	0.245	(0.182)	
-7	1.threat#5.hweek#1.huryear#1.demog	-0.158	(0.326)	1.022*	(0.547)	0.00746	(0.205)	-0.0403	(0.188)	
-6	1.threat#6.hweek#1.huryear#1.demog	0.0800	(0.340)	0.183	(0.464)	-0.0162	(0.200)	0.180	(0.183)	
-5	1.threat#7.hweek#1.huryear#1.demog	-0.501	(0.310)	0.0403	(0.381)	-0.137	(0.164)	0.254	(0.183)	
-4	1.threat#8.hweek#1.huryear#1.demog	-0.0618	(0.457)	0.299	(0.439)	-0.0738	(0.176)	0.120	(0.191)	
-3	1.threat#9.hweek#1.huryear#1.demog	-0.232	(0.334)	0.0758	(0.485)	0.0516	(0.178)	-0.0899	(0.193)	
-2	1.threat#10.hweek#1.huryear#1.demog	0.0939	(0.440)	0.460	(0.546)	0.160	(0.160)	0.141	(0.131)	Base week
-1	1.threat#11.hweek#1.huryear#1.demog	0.0560	(0.385)	-0.0195	(0.391)	-0.318*	(0.190)	0.379*	(0.215)	
0	1.threat#12.hweek#1.huryear#1.demog	0.302	(0.373)	0.269	(0.543)	-0.216	(0.182)	0.110	(0.157)	Sandy week
1	1.threat#13.hweek#1.huryear#1.demog	-0.207	(0.414)	0.491	(0.468)	0.0384	(0.173)	0.428**	(0.179)	
2	1.threat#14.hweek#1.huryear#1.demog	0.335	(0.395)	0.766*	(0.434)	-0.310*	(0.175)	0.183	(0.152)	
3	1.threat#15.hweek#1.huryear#1.demog	-0.384	(0.305)	-0.0658	(0.373)	-0.0703	(0.171)	0.144	(0.173)	
4	1.threat#16.hweek#1.huryear#1.demog	-0.455*	(0.265)	0.0698	(0.424)	0.109	(0.195)	0.261*	(0.138)	
5	1.threat#17.hweek#1.huryear#1.demog	0.313	(0.324)	-0.253	(0.386)	-0.145	(0.158)	0.132	(0.171)	
6	1.threat#18.hweek#1.huryear#1.demog	0.0761	(0.345)	-0.00752	(0.336)	-0.0713	(0.178)	-0.0325	(0.166)	
7	1.threat#19.hweek#1.huryear#1.demog	0.101	(0.400)	0.258	(0.417)	-0.102	(0.167)	0.0755	(0.164)	
8	1.threat#20.hweek#1.huryear#1.demog	0.0263	(0.339)	-0.309	(0.327)	-0.0744	(0.170)	0.0309	(0.161)	
-11	1.threat#1.hweek#1.huryear	0.0246	(0.094)	0.0441	(0.095)	-0.0510	(0.103)	0.140	(0.146)	
-10	1.threat#2.hweek#1.huryear	-0.0135	(0.099)	-0.0160	(0.099)	-0.0226	(0.103)	-0.0423	(0.168)	
-9	1.threat#3.hweek#1.huryear	0.00388	(0.104)	-0.0249	(0.108)	0.0478	(0.119)	-0.219	(0.178)	
-8	1.threat#4.hweek#1.huryear	0.0235	(0.101)	0.0661	(0.098)	0.0862	(0.108)	-0.0266	(0.173)	
-7	1.threat#5.hweek#1.huryear	-0.0112	(0.092)	-0.0355	(0.097)	0.00177	(0.104)	0.112	(0.170)	
-6	1.threat#6.hweek#1.huryear	-0.0408	(0.090)	-0.0341	(0.088)	-0.0153	(0.093)	-0.0759	(0.166)	
-5	1.threat#7.hweek#1.huryear	-0.0396	(0.083)	-0.0514	(0.085)	-0.0183	(0.091)	-0.152	(0.165)	
-4	1.threat#8.hweek#1.huryear	-0.192**	(0.090)	-0.194**	(0.091)	-0.163	(0.100)	-0.186	(0.179)	
-3	1.threat#9.hweek#1.huryear	-0.0124	(0.090)	-0.0148	(0.089)	-0.00874	(0.095)	0.145	(0.193)	
-2	1.threat#10.hweek#1.huryear					(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	0.514***	(0.097)	0.525***	(0.102)	0.583***	(0.109)	0.328*	(0.174)	
0	1.threat#12.hweek#1.huryear	0.270**	(0.105)	0.283***	(0.099)	0.333***	(0.105)	0.296*	(0.163)	Sandy week
1	1.threat#13.hweek#1.huryear	-0.0450	(0.097)	-0.0573	(0.101)	-0.0385	(0.108)	-0.278	(0.183)	
2	1.threat#14.hweek#1.huryear	-0.0279	(0.093)	-0.0266	(0.093)	0.0510	(0.100)	-0.0550	(0.144)	
3	1.threat#15.hweek#1.huryear	0.0381	(0.096)	0.0335	(0.099)	0.0539	(0.108)	0.0125	(0.178)	
4	1.threat#16.hweek#1.huryear	-0.166*	(0.086)	-0.176**	(0.088)	-0.179**	(0.088)	-0.282**	(0.135)	
5	1.threat#17.hweek#1.huryear	-0.0268	(0.084)	0.000188	(0.082)	0.0269	(0.086)	-0.0166	(0.152)	
6	1.threat#18.hweek#1.huryear	-0.0622	(0.086)	-0.0507	(0.092)	-0.0286	(0.100)	0.0636	(0.179)	
7	1.threat#19.hweek#1.huryear	-0.0385	(0.081)	-0.0330	(0.083)	0.000522	(0.089)	0.00662	(0.163)	
8	1.threat#20.hweek#1.huryear	0.0302	(0.080)	0.0476	(0.080)	0.0623	(0.085)	0.106	(0.136)	
	1.threat#1.huryear	0.0370	(0.072)	0.0286	(0.074)	0.0168	(0.078)	-0.0617	(0.115)	
	1.threat	-0.0353	(0.054)	-0.0325	(0.055)	-0.0365	(0.054)	-0.0573	(0.055)	
	1.huryear	0.0275**	(0.012)	0.0275**	(0.012)	0.0275**	(0.012)	0.0273**	(0.012)	
	1.select	0.222***	(0.078)	-0.382***	(0.087)	-0.0253	(0.034)	-0.325***	(0.041)	
	1.irene#34.wkcal	-0.478***	(0.138)	-0.480***	(0.140)	-0.481***	(0.140)	-0.471***	(0.137)	
	1.irene#35.wkcal	-0.261***	(0.075)	-0.263***	(0.075)	-0.260***	(0.075)	-0.244***	(0.074)	
	N	1658040		1658040		1658040		1658040		

Significance level: ***0.01; ** 0.05; *0.1. Standard errors are clustered at county level.

Table B-50: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across binary characteristics for toilet paper

Relative week (t)	Regressor	Dependent variable: ln(volume per member)								Remarks
		Median income & above		Black/African American		College education		With children		
		b	se	b	se	b	se	b	se	
-11	1.threat#1.hweek#1.huryear#1.demog	0.321	(0.459)	0.0454	(0.429)	0.730***	(0.228)	-0.00629	(0.169)	
-10	1.threat#2.hweek#1.huryear#1.demog	-0.511	(0.357)	-0.329	(0.440)	0.0664	(0.215)	0.142	(0.180)	
-9	1.threat#3.hweek#1.huryear#1.demog	-0.449	(0.362)	0.777	(0.516)	-0.278	(0.192)	0.399**	(0.175)	
-8	1.threat#4.hweek#1.huryear#1.demog	0.953**	(0.429)	0.0869	(0.416)	-0.0410	(0.195)	0.245	(0.182)	
-7	1.threat#5.hweek#1.huryear#1.demog	-0.158	(0.326)	1.022*	(0.547)	0.00746	(0.205)	-0.0403	(0.188)	
-6	1.threat#6.hweek#1.huryear#1.demog	0.0800	(0.340)	0.183	(0.464)	-0.0162	(0.200)	0.180	(0.183)	
-5	1.threat#7.hweek#1.huryear#1.demog	-0.501	(0.310)	0.0403	(0.381)	-0.137	(0.164)	0.254	(0.183)	
-4	1.threat#8.hweek#1.huryear#1.demog	-0.0618	(0.457)	0.299	(0.439)	-0.0738	(0.176)	0.120	(0.191)	
-3	1.threat#9.hweek#1.huryear#1.demog	-0.232	(0.334)	0.0758	(0.485)	0.0516	(0.178)	-0.0899	(0.193)	
-2	1.threat#10.hweek#1.huryear#1.demog	0.0939	(0.440)	0.460	(0.546)	0.160	(0.160)	0.141	(0.131)	Base week
-1	1.threat#11.hweek#1.huryear#1.demog	0.0560	(0.385)	-0.0195	(0.391)	-0.318*	(0.190)	0.379*	(0.215)	
0	1.threat#12.hweek#1.huryear#1.demog	0.302	(0.373)	0.269	(0.543)	-0.216	(0.182)	0.110	(0.157)	Sandy week
1	1.threat#13.hweek#1.huryear#1.demog	-0.207	(0.414)	0.491	(0.468)	0.0384	(0.173)	0.428**	(0.179)	
2	1.threat#14.hweek#1.huryear#1.demog	0.335	(0.395)	0.766*	(0.434)	-0.310*	(0.175)	0.183	(0.152)	
3	1.threat#15.hweek#1.huryear#1.demog	-0.384	(0.305)	-0.0658	(0.373)	-0.0703	(0.171)	0.144	(0.173)	
4	1.threat#16.hweek#1.huryear#1.demog	-0.455*	(0.265)	0.0698	(0.424)	0.109	(0.195)	0.261*	(0.138)	
5	1.threat#17.hweek#1.huryear#1.demog	0.313	(0.324)	-0.253	(0.386)	-0.145	(0.158)	0.132	(0.171)	
6	1.threat#18.hweek#1.huryear#1.demog	0.0761	(0.345)	-0.00752	(0.336)	-0.0713	(0.178)	-0.0325	(0.166)	
7	1.threat#19.hweek#1.huryear#1.demog	0.101	(0.400)	0.258	(0.417)	-0.102	(0.167)	0.0755	(0.164)	
8	1.threat#20.hweek#1.huryear#1.demog	0.0263	(0.339)	-0.309	(0.327)	-0.0744	(0.170)	0.0309	(0.161)	
-11	1.threat#1.hweek#1.huryear	0.0246	(0.094)	0.0441	(0.095)	-0.0510	(0.103)	0.140	(0.146)	
-10	1.threat#2.hweek#1.huryear	-0.0135	(0.099)	-0.0160	(0.099)	-0.0226	(0.103)	-0.0423	(0.168)	
-9	1.threat#3.hweek#1.huryear	0.00388	(0.104)	-0.0249	(0.108)	0.0478	(0.119)	-0.219	(0.178)	
-8	1.threat#4.hweek#1.huryear	0.0235	(0.101)	0.0661	(0.098)	0.0862	(0.108)	-0.0266	(0.173)	
-7	1.threat#5.hweek#1.huryear	-0.0112	(0.092)	-0.0355	(0.097)	0.00177	(0.104)	0.112	(0.170)	
-6	1.threat#6.hweek#1.huryear	-0.0408	(0.090)	-0.0341	(0.088)	-0.0153	(0.093)	-0.0759	(0.166)	
-5	1.threat#7.hweek#1.huryear	-0.0396	(0.083)	-0.0514	(0.085)	-0.0183	(0.091)	-0.152	(0.165)	
-4	1.threat#8.hweek#1.huryear	-0.192**	(0.090)	-0.194**	(0.091)	-0.163	(0.100)	-0.186	(0.179)	
-3	1.threat#9.hweek#1.huryear	-0.0124	(0.090)	-0.0148	(0.089)	-0.00874	(0.095)	0.145	(0.193)	
-2	1.threat#10.hweek#1.huryear	(omitted)								Base week
-1	1.threat#11.hweek#1.huryear	0.514***	(0.097)	0.525***	(0.102)	0.583***	(0.109)	0.328*	(0.174)	
0	1.threat#12.hweek#1.huryear	0.270**	(0.105)	0.283***	(0.099)	0.333***	(0.105)	0.296*	(0.163)	Sandy week
1	1.threat#13.hweek#1.huryear	-0.0450	(0.097)	-0.0573	(0.101)	-0.0385	(0.108)	-0.278	(0.183)	
2	1.threat#14.hweek#1.huryear	-0.0279	(0.093)	-0.0266	(0.093)	0.0510	(0.100)	-0.0550	(0.144)	
3	1.threat#15.hweek#1.huryear	0.0381	(0.096)	0.0335	(0.099)	0.0539	(0.108)	0.0125	(0.178)	
4	1.threat#16.hweek#1.huryear	-0.166*	(0.086)	-0.176**	(0.088)	-0.179**	(0.088)	-0.282**	(0.135)	
5	1.threat#17.hweek#1.huryear	-0.0268	(0.084)	0.000188	(0.082)	0.0269	(0.086)	-0.0166	(0.152)	
6	1.threat#18.hweek#1.huryear	-0.0622	(0.086)	-0.0507	(0.092)	-0.0286	(0.100)	0.0636	(0.179)	
7	1.threat#19.hweek#1.huryear	-0.0385	(0.081)	-0.0330	(0.083)	0.000522	(0.089)	0.00662	(0.163)	
8	1.threat#20.hweek#1.huryear	0.0302	(0.080)	0.0476	(0.080)	0.0623	(0.085)	0.106	(0.136)	
	1.threat#1.huryear	0.0370	(0.072)	0.0286	(0.074)	0.0168	(0.078)	-0.0617	(0.115)	
	1.threat	-0.0353	(0.054)	-0.0325	(0.055)	-0.0365	(0.054)	-0.0573	(0.055)	
	1.huryear	0.0275**	(0.012)	0.0275**	(0.012)	0.0275**	(0.012)	0.0273**	(0.012)	
	1.select	0.222***	(0.078)	-0.382***	(0.087)	-0.0253	(0.034)	-0.325***	(0.041)	
	1.irene#34.wkcal	-0.478***	(0.138)	-0.480***	(0.140)	-0.481***	(0.140)	-0.471***	(0.137)	
	1.irene#35.wkcal	-0.261***	(0.075)	-0.263***	(0.075)	-0.260***	(0.075)	-0.244***	(0.074)	
	N	1658040		1658040		1658040		1658040		

Significance level: ***0.01; ** 0.05; *0.1. Standard errors are clustered at county level.

Table B-51: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across binary characteristics for dry pasta

Relative week (t)	Regressor	Dependent variable: ln(volume per member)								Remarks
		Median income & above		Black/African American		College education		With children		
		b	se	b	se	b	se	b	se	
-11	1.threat#1.hweek#1.huryear#1.demog	0.321	(0.459)	0.0454	(0.429)	0.730***	(0.228)	-0.00629	(0.169)	
-10	1.threat#2.hweek#1.huryear#1.demog	-0.511	(0.357)	-0.329	(0.440)	0.0664	(0.215)	0.142	(0.180)	
-9	1.threat#3.hweek#1.huryear#1.demog	-0.449	(0.362)	0.777	(0.516)	-0.278	(0.192)	0.399**	(0.175)	
-8	1.threat#4.hweek#1.huryear#1.demog	0.953**	(0.429)	0.0869	(0.416)	-0.0410	(0.195)	0.245	(0.182)	
-7	1.threat#5.hweek#1.huryear#1.demog	-0.158	(0.326)	1.022*	(0.547)	0.00746	(0.205)	-0.0403	(0.188)	
-6	1.threat#6.hweek#1.huryear#1.demog	0.0800	(0.340)	0.183	(0.464)	-0.0162	(0.200)	0.180	(0.183)	
-5	1.threat#7.hweek#1.huryear#1.demog	-0.501	(0.310)	0.0403	(0.381)	-0.137	(0.164)	0.254	(0.183)	
-4	1.threat#8.hweek#1.huryear#1.demog	-0.0618	(0.457)	0.299	(0.439)	-0.0738	(0.176)	0.120	(0.191)	
-3	1.threat#9.hweek#1.huryear#1.demog	-0.232	(0.334)	0.0758	(0.485)	0.0516	(0.178)	-0.0899	(0.193)	
-2	1.threat#10.hweek#1.huryear#1.demog	0.0939	(0.440)	0.460	(0.546)	0.160	(0.160)	0.141	(0.131)	Base week
-1	1.threat#11.hweek#1.huryear#1.demog	0.0560	(0.385)	-0.0195	(0.391)	-0.318*	(0.190)	0.379*	(0.215)	
0	1.threat#12.hweek#1.huryear#1.demog	0.302	(0.373)	0.269	(0.543)	-0.216	(0.182)	0.110	(0.157)	Sandy week
1	1.threat#13.hweek#1.huryear#1.demog	-0.207	(0.414)	0.491	(0.468)	0.0384	(0.173)	0.428**	(0.179)	
2	1.threat#14.hweek#1.huryear#1.demog	0.335	(0.395)	0.766*	(0.434)	-0.310*	(0.175)	0.183	(0.152)	
3	1.threat#15.hweek#1.huryear#1.demog	-0.384	(0.305)	-0.0658	(0.373)	-0.0703	(0.171)	0.144	(0.173)	
4	1.threat#16.hweek#1.huryear#1.demog	-0.455*	(0.265)	0.0698	(0.424)	0.109	(0.195)	0.261*	(0.138)	
5	1.threat#17.hweek#1.huryear#1.demog	0.313	(0.324)	-0.253	(0.386)	-0.145	(0.158)	0.132	(0.171)	
6	1.threat#18.hweek#1.huryear#1.demog	0.0761	(0.345)	-0.00752	(0.336)	-0.0713	(0.178)	-0.0325	(0.166)	
7	1.threat#19.hweek#1.huryear#1.demog	0.101	(0.400)	0.258	(0.417)	-0.102	(0.167)	0.0755	(0.164)	
8	1.threat#20.hweek#1.huryear#1.demog	0.0263	(0.339)	-0.309	(0.327)	-0.0744	(0.170)	0.0309	(0.161)	
-11	1.threat#1.hweek#1.huryear	0.0246	(0.094)	0.0441	(0.095)	-0.0510	(0.103)	0.140	(0.146)	
-10	1.threat#2.hweek#1.huryear	-0.0135	(0.099)	-0.0160	(0.099)	-0.0226	(0.103)	-0.0423	(0.168)	
-9	1.threat#3.hweek#1.huryear	0.00388	(0.104)	-0.0249	(0.108)	0.0478	(0.119)	-0.219	(0.178)	
-8	1.threat#4.hweek#1.huryear	0.0235	(0.101)	0.0661	(0.098)	0.0862	(0.108)	-0.0266	(0.173)	
-7	1.threat#5.hweek#1.huryear	-0.0112	(0.092)	-0.0355	(0.097)	0.00177	(0.104)	0.112	(0.170)	
-6	1.threat#6.hweek#1.huryear	-0.0408	(0.090)	-0.0341	(0.088)	-0.0153	(0.093)	-0.0759	(0.166)	
-5	1.threat#7.hweek#1.huryear	-0.0396	(0.083)	-0.0514	(0.085)	-0.0183	(0.091)	-0.152	(0.165)	
-4	1.threat#8.hweek#1.huryear	-0.192**	(0.090)	-0.194**	(0.091)	-0.163	(0.100)	-0.186	(0.179)	
-3	1.threat#9.hweek#1.huryear	-0.0124	(0.090)	-0.0148	(0.089)	-0.00874	(0.095)	0.145	(0.193)	
-2	1.threat#10.hweek#1.huryear					(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	0.514***	(0.097)	0.525***	(0.102)	0.583***	(0.109)	0.328*	(0.174)	
0	1.threat#12.hweek#1.huryear	0.270**	(0.105)	0.283***	(0.099)	0.333***	(0.105)	0.296*	(0.163)	Sandy week
1	1.threat#13.hweek#1.huryear	-0.0450	(0.097)	-0.0573	(0.101)	-0.0385	(0.108)	-0.278	(0.183)	
2	1.threat#14.hweek#1.huryear	-0.0279	(0.093)	-0.0266	(0.093)	0.0510	(0.100)	-0.0550	(0.144)	
3	1.threat#15.hweek#1.huryear	0.0381	(0.096)	0.0335	(0.099)	0.0539	(0.108)	0.0125	(0.178)	
4	1.threat#16.hweek#1.huryear	-0.166*	(0.086)	-0.176**	(0.088)	-0.179**	(0.088)	-0.282**	(0.135)	
5	1.threat#17.hweek#1.huryear	-0.0268	(0.084)	0.000188	(0.082)	0.0269	(0.086)	-0.0166	(0.152)	
6	1.threat#18.hweek#1.huryear	-0.0622	(0.086)	-0.0507	(0.092)	-0.0286	(0.100)	0.0636	(0.179)	
7	1.threat#19.hweek#1.huryear	-0.0385	(0.081)	-0.0330	(0.083)	0.000522	(0.089)	0.00662	(0.163)	
8	1.threat#20.hweek#1.huryear	0.0302	(0.080)	0.0476	(0.080)	0.0623	(0.085)	0.106	(0.136)	
	1.threat#1.huryear	0.0370	(0.072)	0.0286	(0.074)	0.0168	(0.078)	-0.0617	(0.115)	
	1.threat	-0.0353	(0.054)	-0.0325	(0.055)	-0.0365	(0.054)	-0.0573	(0.055)	
	1.huryear	0.0275**	(0.012)	0.0275**	(0.012)	0.0275**	(0.012)	0.0273**	(0.012)	
	1.select	0.222***	(0.078)	-0.382***	(0.087)	-0.0253	(0.034)	-0.325***	(0.041)	
	1.irene#34.wkcal	-0.478***	(0.138)	-0.480***	(0.140)	-0.481***	(0.140)	-0.471***	(0.137)	
	1.irene#35.wkcal	-0.261***	(0.075)	-0.263***	(0.075)	-0.260***	(0.075)	-0.244***	(0.074)	
	N	1658040		1658040		1658040		1658040		

Significance level: ***0.01; ** 0.05; *0.1. Standard errors are clustered at county level.

Table B-52: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across binary characteristics for bread

Relative week (t)	Regressor	Dependent variable: ln(volume per member)								Remarks
		Median income & above		Black/African American		College education		With children		
		b	se	b	se	b	se	b	se	
-11	1.threat#1.hweek#1.huryear#1.demog	0.321	(0.459)	0.0454	(0.429)	0.730***	(0.228)	-0.00629	(0.169)	
-10	1.threat#2.hweek#1.huryear#1.demog	-0.511	(0.357)	-0.329	(0.440)	0.0664	(0.215)	0.142	(0.180)	
-9	1.threat#3.hweek#1.huryear#1.demog	-0.449	(0.362)	0.777	(0.516)	-0.278	(0.192)	0.399**	(0.175)	
-8	1.threat#4.hweek#1.huryear#1.demog	0.953**	(0.429)	0.0869	(0.416)	-0.0410	(0.195)	0.245	(0.182)	
-7	1.threat#5.hweek#1.huryear#1.demog	-0.158	(0.326)	1.022*	(0.547)	0.00746	(0.205)	-0.0403	(0.188)	
-6	1.threat#6.hweek#1.huryear#1.demog	0.0800	(0.340)	0.183	(0.464)	-0.0162	(0.200)	0.180	(0.183)	
-5	1.threat#7.hweek#1.huryear#1.demog	-0.501	(0.310)	0.0403	(0.381)	-0.137	(0.164)	0.254	(0.183)	
-4	1.threat#8.hweek#1.huryear#1.demog	-0.0618	(0.457)	0.299	(0.439)	-0.0738	(0.176)	0.120	(0.191)	
-3	1.threat#9.hweek#1.huryear#1.demog	-0.232	(0.334)	0.0758	(0.485)	0.0516	(0.178)	-0.0899	(0.193)	
-2	1.threat#10.hweek#1.huryear#1.demog	0.0939	(0.440)	0.460	(0.546)	0.160	(0.160)	0.141	(0.131)	Base week
-1	1.threat#11.hweek#1.huryear#1.demog	0.0560	(0.385)	-0.0195	(0.391)	-0.318*	(0.190)	0.379*	(0.215)	
0	1.threat#12.hweek#1.huryear#1.demog	0.302	(0.373)	0.269	(0.543)	-0.216	(0.182)	0.110	(0.157)	Sandy week
1	1.threat#13.hweek#1.huryear#1.demog	-0.207	(0.414)	0.491	(0.468)	0.0384	(0.173)	0.428**	(0.179)	
2	1.threat#14.hweek#1.huryear#1.demog	0.335	(0.395)	0.766*	(0.434)	-0.310*	(0.175)	0.183	(0.152)	
3	1.threat#15.hweek#1.huryear#1.demog	-0.384	(0.305)	-0.0658	(0.373)	-0.0703	(0.171)	0.144	(0.173)	
4	1.threat#16.hweek#1.huryear#1.demog	-0.455*	(0.265)	0.0698	(0.424)	0.109	(0.195)	0.261*	(0.138)	
5	1.threat#17.hweek#1.huryear#1.demog	0.313	(0.324)	-0.253	(0.386)	-0.145	(0.158)	0.132	(0.171)	
6	1.threat#18.hweek#1.huryear#1.demog	0.0761	(0.345)	-0.00752	(0.336)	-0.0713	(0.178)	-0.0325	(0.166)	
7	1.threat#19.hweek#1.huryear#1.demog	0.101	(0.400)	0.258	(0.417)	-0.102	(0.167)	0.0755	(0.164)	
8	1.threat#20.hweek#1.huryear#1.demog	0.0263	(0.339)	-0.309	(0.327)	-0.0744	(0.170)	0.0309	(0.161)	
-11	1.threat#1.hweek#1.huryear	0.0246	(0.094)	0.0441	(0.095)	-0.0510	(0.103)	0.140	(0.146)	
-10	1.threat#2.hweek#1.huryear	-0.0135	(0.099)	-0.0160	(0.099)	-0.0226	(0.103)	-0.0423	(0.168)	
-9	1.threat#3.hweek#1.huryear	0.00388	(0.104)	-0.0249	(0.108)	0.0478	(0.119)	-0.219	(0.178)	
-8	1.threat#4.hweek#1.huryear	0.0235	(0.101)	0.0661	(0.098)	0.0862	(0.108)	-0.0266	(0.173)	
-7	1.threat#5.hweek#1.huryear	-0.0112	(0.092)	-0.0355	(0.097)	0.00177	(0.104)	0.112	(0.170)	
-6	1.threat#6.hweek#1.huryear	-0.0408	(0.090)	-0.0341	(0.088)	-0.0153	(0.093)	-0.0759	(0.166)	
-5	1.threat#7.hweek#1.huryear	-0.0396	(0.083)	-0.0514	(0.085)	-0.0183	(0.091)	-0.152	(0.165)	
-4	1.threat#8.hweek#1.huryear	-0.192**	(0.090)	-0.194**	(0.091)	-0.163	(0.100)	-0.186	(0.179)	
-3	1.threat#9.hweek#1.huryear	-0.0124	(0.090)	-0.0148	(0.089)	-0.00874	(0.095)	0.145	(0.193)	
-2	1.threat#10.hweek#1.huryear	(omitted)								Base week
-1	1.threat#11.hweek#1.huryear	0.514***	(0.097)	0.525***	(0.102)	0.583***	(0.109)	0.328*	(0.174)	
0	1.threat#12.hweek#1.huryear	0.270**	(0.105)	0.283***	(0.099)	0.333***	(0.105)	0.296*	(0.163)	Sandy week
1	1.threat#13.hweek#1.huryear	-0.0450	(0.097)	-0.0573	(0.101)	-0.0385	(0.108)	-0.278	(0.183)	
2	1.threat#14.hweek#1.huryear	-0.0279	(0.093)	-0.0266	(0.093)	0.0510	(0.100)	-0.0550	(0.144)	
3	1.threat#15.hweek#1.huryear	0.0381	(0.096)	0.0335	(0.099)	0.0539	(0.108)	0.0125	(0.178)	
4	1.threat#16.hweek#1.huryear	-0.166*	(0.086)	-0.176**	(0.088)	-0.179**	(0.088)	-0.282**	(0.135)	
5	1.threat#17.hweek#1.huryear	-0.0268	(0.084)	0.000188	(0.082)	0.0269	(0.086)	-0.0166	(0.152)	
6	1.threat#18.hweek#1.huryear	-0.0622	(0.086)	-0.0507	(0.092)	-0.0286	(0.100)	0.0636	(0.179)	
7	1.threat#19.hweek#1.huryear	-0.0385	(0.081)	-0.0330	(0.083)	0.000522	(0.089)	0.00662	(0.163)	
8	1.threat#20.hweek#1.huryear	0.0302	(0.080)	0.0476	(0.080)	0.0623	(0.085)	0.106	(0.136)	
	1.threat#1.huryear	0.0370	(0.072)	0.0286	(0.074)	0.0168	(0.078)	-0.0617	(0.115)	
	1.threat	-0.0353	(0.054)	-0.0325	(0.055)	-0.0365	(0.054)	-0.0573	(0.055)	
	1.huryear	0.0275**	(0.012)	0.0275**	(0.012)	0.0275**	(0.012)	0.0273**	(0.012)	
	1.select	0.222***	(0.078)	-0.382***	(0.087)	-0.0253	(0.034)	-0.325***	(0.041)	
	1.irene#34.wkcal	-0.478***	(0.138)	-0.480***	(0.140)	-0.481***	(0.140)	-0.471***	(0.137)	
	1.irene#35.wkcal	-0.261***	(0.075)	-0.263***	(0.075)	-0.260***	(0.075)	-0.244***	(0.074)	
	N	1658040		1658040		1658040		1658040		

Significance level: ***0.01; ** 0.05; *0.1. Standard errors are clustered at county level.

Table B-53: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household income for bottled water

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1)	(2)	(3)	(4)	
		Low	Low-Medium	Medium-High	High	
-11	1.threat#1.hweek#1.huryear	0.336*	0.225	-0.242	-0.195	
		(0.184)	(0.159)	(0.197)	(0.281)	
-10	1.threat#2.hweek#1.huryear	0.0282	0.327*	-0.191	-0.536**	
		(0.167)	(0.180)	(0.179)	(0.261)	
-9	1.threat#3.hweek#1.huryear	-0.133	0.110	-0.0636	-0.0825	
		(0.175)	(0.182)	(0.205)	(0.256)	
-8	1.threat#4.hweek#1.huryear	-0.117	0.320*	-0.0133	-0.0953	
		(0.186)	(0.175)	(0.202)	(0.231)	
-7	1.threat#5.hweek#1.huryear	-0.246	0.383**	-0.0411	-0.422*	
		(0.169)	(0.163)	(0.185)	(0.252)	
-6	1.threat#6.hweek#1.huryear	-0.145	0.252	-0.220	-0.168	
		(0.170)	(0.167)	(0.162)	(0.240)	
-5	1.threat#7.hweek#1.huryear	-0.175	0.290**	-0.213	-0.343	
		(0.156)	(0.143)	(0.165)	(0.215)	
-4	1.threat#8.hweek#1.huryear	-0.550***	0.0157	-0.191	-0.153	
		(0.167)	(0.144)	(0.183)	(0.226)	
-3	1.threat#9.hweek#1.huryear	-0.159	0.427**	-0.292	-0.205	
		(0.183)	(0.168)	(0.205)	(0.219)	
-2	1.threat#10.hweek#1.huryear	(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	0.144	0.551***	0.689***	0.555**	
		(0.171)	(0.181)	(0.214)	(0.258)	
0	1.threat#12.hweek#1.huryear	0.187	0.495***	0.150	0.227	Sandy week
		(0.181)	(0.161)	(0.172)	(0.286)	
1	1.threat#13.hweek#1.huryear	-0.196	0.301*	-0.111	-0.428**	
		(0.185)	(0.173)	(0.208)	(0.204)	
2	1.threat#14.hweek#1.huryear	-0.324**	0.166	-0.00360	-0.00678	
		(0.159)	(0.149)	(0.188)	(0.254)	
3	1.threat#15.hweek#1.huryear	-0.0570	0.354**	-0.209	-0.0787	
		(0.167)	(0.160)	(0.176)	(0.231)	
4	1.threat#16.hweek#1.huryear	-0.335*	-0.0428	-0.196	-0.240	
		(0.196)	(0.131)	(0.176)	(0.188)	
5	1.threat#17.hweek#1.huryear	-0.200	0.364**	-0.270	-0.0582	
		(0.165)	(0.152)	(0.176)	(0.185)	
6	1.threat#18.hweek#1.huryear	-0.285*	0.0758	0.102	-0.315	
		(0.156)	(0.147)	(0.176)	(0.225)	
7	1.threat#19.hweek#1.huryear	-0.316**	0.164	-0.0450	-0.0289	
		(0.146)	(0.151)	(0.170)	(0.211)	
8	1.threat#20.hweek#1.huryear	-0.121	0.279*	-0.117	0.0399	
		(0.159)	(0.155)	(0.153)	(0.216)	
	1.threat#1.huryear	0.188	-0.252**	0.136	0.220	
		(0.121)	(0.118)	(0.149)	(0.178)	
	1.threat	-0.143	0.0822	-0.0411	-0.114	
		(0.092)	(0.076)	(0.088)	(0.095)	
	1.huryear	0.0218	0.0313	0.0300	0.0220	
		(0.025)	(0.020)	(0.024)	(0.031)	
	0.irene#34.wkcal	-0.538***	-0.433**	-0.647***	-0.193	Irene 2011
		(0.205)	(0.179)	(0.238)	(0.302)	
	0.irene#35.wkcal	-0.413***	-0.220*	-0.305**	-0.0442	
		(0.157)	(0.114)	(0.146)	(0.165)	
	N	377120	582400	460200	238320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-54: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household income for peanut butter

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1)	(2)	(3)	(4)	
		Low	Low-Medium	Medium-High	High	
-11	1.threat#1.hweek#1.huryear	0.132	0.329**	0.0955	0.0980	
		(0.142)	(0.131)	(0.111)	(0.151)	
-10	1.threat#2.hweek#1.huryear	0.0680	0.161	0.264**	0.110	
		(0.123)	(0.129)	(0.128)	(0.134)	
-9	1.threat#3.hweek#1.huryear	0.0905	0.135	0.332**	0.0636	
		(0.127)	(0.138)	(0.136)	(0.149)	
-8	1.threat#4.hweek#1.huryear	0.176	0.301**	0.407***	0.268*	
		(0.137)	(0.125)	(0.131)	(0.140)	
-7	1.threat#5.hweek#1.huryear	0.212	0.396***	0.134	0.191	
		(0.136)	(0.134)	(0.116)	(0.156)	
-6	1.threat#6.hweek#1.huryear	0.0578	0.326**	0.0404	0.189	
		(0.129)	(0.130)	(0.116)	(0.150)	
-5	1.threat#7.hweek#1.huryear	0.00511	0.260**	0.192	0.250*	
		(0.132)	(0.129)	(0.131)	(0.151)	
-4	1.threat#8.hweek#1.huryear	-0.0690	0.0837	0.239*	0.153	
		(0.135)	(0.104)	(0.126)	(0.155)	
-3	1.threat#9.hweek#1.huryear	-0.0122	0.174	0.0675	0.118	
		(0.145)	(0.121)	(0.128)	(0.163)	
-2	1.threat#10.hweek#1.huryear	(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	-0.0264	0.0969	0.182	0.220	
		(0.141)	(0.127)	(0.142)	(0.156)	
0	1.threat#12.hweek#1.huryear	0.152	0.145	0.164	-0.0151	Sandy week
		(0.141)	(0.118)	(0.141)	(0.170)	
1	1.threat#13.hweek#1.huryear	-0.0568	0.305**	0.243*	0.0810	
		(0.148)	(0.130)	(0.133)	(0.148)	
2	1.threat#14.hweek#1.huryear	0.133	0.426***	0.166	0.330**	
		(0.148)	(0.134)	(0.123)	(0.147)	
3	1.threat#15.hweek#1.huryear	0.246*	0.306***	0.278**	0.315*	
		(0.142)	(0.117)	(0.127)	(0.173)	
4	1.threat#16.hweek#1.huryear	0.0543	0.313***	0.167	0.192	
		(0.141)	(0.116)	(0.130)	(0.145)	
5	1.threat#17.hweek#1.huryear	0.0724	0.308**	0.294**	0.219	
		(0.147)	(0.129)	(0.132)	(0.153)	
6	1.threat#18.hweek#1.huryear	0.300*	0.409***	0.405***	0.0963	
		(0.157)	(0.118)	(0.133)	(0.165)	
7	1.threat#19.hweek#1.huryear	0.140	0.359***	0.437***	0.401**	
		(0.132)	(0.126)	(0.142)	(0.160)	
8	1.threat#20.hweek#1.huryear	0.378***	0.322***	0.365***	0.286*	
		(0.144)	(0.113)	(0.122)	(0.149)	
	1.threat#1.huryear	-0.106	-0.212**	-0.138	-0.167	
		(0.100)	(0.093)	(0.094)	(0.102)	
	1.threat	-0.0328	-0.0338	-0.0990**	-0.0882**	
		(0.051)	(0.038)	(0.045)	(0.044)	
	1.huryear	-0.0636***	-0.0632***	-0.0732***	-0.0426**	
		(0.014)	(0.013)	(0.013)	(0.018)	
	0.irene#34.wkcal	-0.175	-0.150	-0.233	-0.287	
		(0.125)	(0.114)	(0.143)	(0.210)	Irene 2011
	0.irene#35.wkcal	-0.0903	0.0206	-0.0824	0.154	
		(0.111)	(0.082)	(0.090)	(0.115)	
	N	377120	582400	460200	238320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-55: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household income for canned beans

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1)	(2)	(3)	(4)	
		Low	Low-Medium	Medium-High	High	
-11	1.threat#1.hweek#1.huryear	0.0450	0.106	0.137	0.140	
		(0.131)	(0.107)	(0.115)	(0.150)	
-10	1.threat#2.hweek#1.huryear	0.0364	0.00600	0.0812	0.114	
		(0.141)	(0.106)	(0.124)	(0.151)	
-9	1.threat#3.hweek#1.huryear	-0.161	0.00412	0.0140	0.0341	
		(0.132)	(0.118)	(0.134)	(0.150)	
-8	1.threat#4.hweek#1.huryear	0.00444	0.0268	0.134	0.0901	
		(0.130)	(0.106)	(0.109)	(0.147)	
-7	1.threat#5.hweek#1.huryear	-0.176	-0.0777	0.157	-0.0113	
		(0.122)	(0.109)	(0.131)	(0.166)	
-6	1.threat#6.hweek#1.huryear	-0.0329	-0.206*	-0.0172	-0.0696	
		(0.135)	(0.120)	(0.110)	(0.168)	
-5	1.threat#7.hweek#1.huryear	0.0679	-0.173	0.0896	0.280	
		(0.142)	(0.115)	(0.134)	(0.176)	
-4	1.threat#8.hweek#1.huryear	-0.177	-0.204*	-0.0114	-0.0554	
		(0.139)	(0.107)	(0.134)	(0.160)	
-3	1.threat#9.hweek#1.huryear	-0.00647	-0.0789	-0.143	0.212	
		(0.134)	(0.121)	(0.129)	(0.186)	
-2	1.threat#10.hweek#1.huryear	(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	-0.245*	-0.0957	-0.0246	0.0288	
		(0.144)	(0.116)	(0.123)	(0.160)	
0	1.threat#12.hweek#1.huryear	-0.118	-0.280**	-0.285**	-0.160	Sandy week
		(0.141)	(0.123)	(0.140)	(0.151)	
1	1.threat#13.hweek#1.huryear	-0.0609	0.0221	-0.0187	-0.0512	
		(0.140)	(0.114)	(0.121)	(0.150)	
2	1.threat#14.hweek#1.huryear	-0.160	-0.0666	0.00857	0.0907	
		(0.124)	(0.108)	(0.146)	(0.136)	
3	1.threat#15.hweek#1.huryear	0.0133	-0.0791	0.0213	0.266	
		(0.140)	(0.099)	(0.129)	(0.175)	
4	1.threat#16.hweek#1.huryear	-0.0843	-0.214*	0.126	0.113	
		(0.135)	(0.112)	(0.118)	(0.141)	
5	1.threat#17.hweek#1.huryear	-0.0909	-0.0935	-0.0475	-0.107	
		(0.140)	(0.113)	(0.135)	(0.174)	
6	1.threat#18.hweek#1.huryear	-0.00845	-0.0393	0.0942	0.0170	
		(0.134)	(0.107)	(0.140)	(0.156)	
7	1.threat#19.hweek#1.huryear	0.0192	-0.122	-0.0148	0.0194	
		(0.138)	(0.104)	(0.140)	(0.145)	
8	1.threat#20.hweek#1.huryear	-0.213*	-0.113	-0.0582	0.0629	
		(0.126)	(0.102)	(0.116)	(0.146)	
	1.threat#1.huryear	0.0927	0.0586	-0.0507	-0.0294	
		(0.102)	(0.089)	(0.100)	(0.117)	
	1.threat	-0.108***	-0.185***	-0.178***	-0.262***	
		(0.041)	(0.034)	(0.043)	(0.050)	
	1.huryear	-0.00143	-0.00330	0.00868	-0.0216	
		(0.014)	(0.012)	(0.015)	(0.020)	
	0.irene#34.wkcal	-0.110	-0.0637	-0.212*	-0.285	
		(0.109)	(0.093)	(0.109)	(0.202)	Irene 2011
	0.irene#35.wkcal	-0.0429	0.0801	0.0566	0.0391	
		(0.087)	(0.070)	(0.073)	(0.084)	
	N	377120	582400	460200	238320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-56: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household income for toilet paper

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1)	(2)	(3)	(4)	
		Low	Low-Medium	Medium-High	High	
-11	1.threat#1.hweek#1.huryear	-0.128	-0.0574	-0.102	0.193	
		(0.181)	(0.149)	(0.151)	(0.210)	
-10	1.threat#2.hweek#1.huryear	-0.447**	-0.256*	-0.119	0.134	
		(0.215)	(0.155)	(0.151)	(0.185)	
-9	1.threat#3.hweek#1.huryear	-0.530***	-0.288*	-0.292*	-0.235	
		(0.200)	(0.150)	(0.171)	(0.182)	
-8	1.threat#4.hweek#1.huryear	-0.329*	-0.195	-0.322**	0.0401	
		(0.191)	(0.147)	(0.159)	(0.201)	
-7	1.threat#5.hweek#1.huryear	-0.681***	-0.0153	-0.313**	0.103	
		(0.189)	(0.152)	(0.154)	(0.212)	
-6	1.threat#6.hweek#1.huryear	-0.539***	-0.180	0.0275	0.122	
		(0.203)	(0.155)	(0.170)	(0.169)	
-5	1.threat#7.hweek#1.huryear	-0.464***	0.0650	-0.240*	0.0234	
		(0.180)	(0.140)	(0.146)	(0.198)	
-4	1.threat#8.hweek#1.huryear	-0.803***	-0.124	-0.0127	-0.00507	
		(0.190)	(0.172)	(0.150)	(0.187)	
-3	1.threat#9.hweek#1.huryear	-0.460**	-0.0845	-0.366**	0.302	
		(0.223)	(0.164)	(0.158)	(0.209)	
-2	1.threat#10.hweek#1.huryear			(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.299	0.0386	0.430**	0.377*	
		(0.215)	(0.166)	(0.169)	(0.201)	
0	1.threat#12.hweek#1.huryear	-0.612***	-0.196	-0.484***	-0.337*	Sandy week
		(0.197)	(0.133)	(0.181)	(0.184)	
1	1.threat#13.hweek#1.huryear	-0.296	-0.235	-0.202	0.106	
		(0.183)	(0.151)	(0.161)	(0.220)	
2	1.threat#14.hweek#1.huryear	-0.520**	-0.00891	-0.191	0.128	
		(0.208)	(0.160)	(0.142)	(0.205)	
3	1.threat#15.hweek#1.huryear	-0.549***	-0.125	0.143	0.0323	
		(0.206)	(0.160)	(0.177)	(0.198)	
4	1.threat#16.hweek#1.huryear	-0.486**	0.0528	-0.181	0.0776	
		(0.190)	(0.159)	(0.155)	(0.209)	
5	1.threat#17.hweek#1.huryear	-0.453**	-0.139	-0.0861	0.277	
		(0.196)	(0.142)	(0.150)	(0.195)	
6	1.threat#18.hweek#1.huryear	-0.471**	-0.0953	-0.185	-0.106	
		(0.185)	(0.133)	(0.149)	(0.170)	
7	1.threat#19.hweek#1.huryear	-0.439**	-0.0179	0.101	0.371*	
		(0.200)	(0.163)	(0.173)	(0.204)	
8	1.threat#20.hweek#1.huryear	-0.314	-0.163	-0.163	0.0700	
		(0.194)	(0.131)	(0.150)	(0.201)	
	1.threat#1.huryear	0.436***	0.0854	0.0730	-0.0471	
		(0.145)	(0.107)	(0.117)	(0.140)	
	1.threat	-0.157**	-0.191***	-0.173***	-0.240***	
		(0.064)	(0.045)	(0.044)	(0.062)	
	1.huryear	-0.0612***	-0.0818***	-0.0881***	-0.0742***	
		(0.016)	(0.013)	(0.014)	(0.020)	
	0.irene#34.wkcal	-0.0817	-0.0461	-0.0301	-0.354	
		(0.166)	(0.124)	(0.165)	(0.221)	Irene 2011
	0.irene#35.wkcal	0.0397	0.318***	0.238**	0.609***	
		(0.129)	(0.101)	(0.103)	(0.122)	
	N	377120	582400	460200	238320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-57: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household income for dry pasta

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1)	(2)	(3)	(4)	
		Low	Low-Medium	Medium-High	High	
-11	1.threat#1.hweek#1.huryear	0.0896	-0.438**	-0.390*	-0.373	
		(0.218)	(0.178)	(0.204)	(0.229)	
-10	1.threat#2.hweek#1.huryear	-0.310	-0.491***	-0.359*	-0.560**	
		(0.202)	(0.157)	(0.190)	(0.229)	
-9	1.threat#3.hweek#1.huryear	0.0530	-0.0617	-0.112	-0.0271	
		(0.215)	(0.204)	(0.198)	(0.215)	
-8	1.threat#4.hweek#1.huryear	0.0177	0.0909	0.0259	-0.190	
		(0.194)	(0.180)	(0.170)	(0.222)	
-7	1.threat#5.hweek#1.huryear	-0.125	-0.120	-0.0658	0.130	
		(0.200)	(0.158)	(0.194)	(0.243)	
-6	1.threat#6.hweek#1.huryear	-0.0681	-0.313*	-0.208	-0.299	
		(0.208)	(0.174)	(0.194)	(0.236)	
-5	1.threat#7.hweek#1.huryear	0.164	-0.200	-0.0464	-0.0567	
		(0.232)	(0.190)	(0.184)	(0.281)	
-4	1.threat#8.hweek#1.huryear	-0.347	-0.459**	0.130	-0.143	
		(0.240)	(0.184)	(0.199)	(0.285)	
-3	1.threat#9.hweek#1.huryear	-0.00436	-0.0268	-0.280	-0.202	
		(0.203)	(0.184)	(0.185)	(0.263)	
-2	1.threat#10.hweek#1.huryear	(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	0.179	-0.360*	0.220	-0.0658	
		(0.216)	(0.200)	(0.187)	(0.273)	
0	1.threat#12.hweek#1.huryear	-0.282	-0.736***	-0.580***	-0.690***	Sandy week
		(0.217)	(0.208)	(0.204)	(0.229)	
1	1.threat#13.hweek#1.huryear	-0.144	-0.327**	-0.233	-0.0536	
		(0.214)	(0.164)	(0.207)	(0.191)	
2	1.threat#14.hweek#1.huryear	-0.311*	-0.108	-0.107	0.0303	
		(0.187)	(0.158)	(0.185)	(0.230)	
3	1.threat#15.hweek#1.huryear	-0.0956	-0.380**	-0.0243	-0.159	
		(0.189)	(0.172)	(0.183)	(0.296)	
4	1.threat#16.hweek#1.huryear	-0.0684	-0.404**	-0.375**	-0.150	
		(0.223)	(0.191)	(0.173)	(0.230)	
5	1.threat#17.hweek#1.huryear	-0.192	-0.0984	-0.106	-0.0751	
		(0.205)	(0.182)	(0.218)	(0.235)	
6	1.threat#18.hweek#1.huryear	0.0684	-0.324**	0.0444	-0.315	
		(0.205)	(0.165)	(0.182)	(0.242)	
7	1.threat#19.hweek#1.huryear	0.0908	-0.179	-0.110	-0.129	
		(0.185)	(0.201)	(0.167)	(0.223)	
8	1.threat#20.hweek#1.huryear	-0.0321	-0.300*	-0.0528	-0.152	
		(0.181)	(0.180)	(0.175)	(0.261)	
	1.threat#1.huryear	0.0212	0.288**	0.156	0.0966	
		(0.150)	(0.137)	(0.145)	(0.187)	
	1.threat	0.326***	0.333***	0.291***	0.326***	
		(0.063)	(0.054)	(0.062)	(0.077)	
	1.huryear	-0.0114	-0.0496***	-0.0571***	-0.00407	
		(0.016)	(0.014)	(0.018)	(0.025)	
	0.irene#34.wkcal	-0.242	0.00344	-0.156	-0.460**	Irene 2011
		(0.149)	(0.137)	(0.159)	(0.188)	
	0.irene#35.wkcal	-0.218	-0.335***	-0.0776	0.161	
		(0.133)	(0.110)	(0.112)	(0.127)	
	N	377120	582400	460200	238320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-58: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household income for bread

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1) Low	(2) Low-Medium	(3) Medium-High	(4) High	
-11	1.threat#1.hweek#1.huryear	-0.518*	0.262	-0.515**	-0.295	
		(0.272)	(0.230)	(0.237)	(0.310)	
-10	1.threat#2.hweek#1.huryear	-0.665**	-0.142	-0.430**	-0.716***	
		(0.270)	(0.200)	(0.211)	(0.275)	
-9	1.threat#3.hweek#1.huryear	-0.876***	0.264	-0.337	-0.0233	
		(0.255)	(0.216)	(0.241)	(0.317)	
-8	1.threat#4.hweek#1.huryear	-0.432*	0.334	-0.237	-0.121	
		(0.253)	(0.227)	(0.256)	(0.315)	
-7	1.threat#5.hweek#1.huryear	-0.492*	0.375*	0.0347	0.228	
		(0.272)	(0.218)	(0.226)	(0.296)	
-6	1.threat#6.hweek#1.huryear	-0.134	-0.00975	-0.0131	0.238	
		(0.292)	(0.213)	(0.223)	(0.285)	
-5	1.threat#7.hweek#1.huryear	-0.463*	-0.0762	-0.358	0.0437	
		(0.275)	(0.249)	(0.230)	(0.302)	
-4	1.threat#8.hweek#1.huryear	-0.735**	0.0758	-0.129	-0.528*	
		(0.296)	(0.212)	(0.225)	(0.281)	
-3	1.threat#9.hweek#1.huryear	-0.461*	0.303	-0.421*	-0.148	
		(0.257)	(0.246)	(0.255)	(0.304)	
-2	1.threat#10.hweek#1.huryear	(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	0.0236	0.775***	0.284	0.367	
		(0.283)	(0.241)	(0.265)	(0.334)	
0	1.threat#12.hweek#1.huryear	-0.864***	-0.323	-0.537**	-0.633**	Sandy week
		(0.308)	(0.236)	(0.270)	(0.293)	
1	1.threat#13.hweek#1.huryear	-0.362	0.207	-0.381	-0.144	
		(0.273)	(0.250)	(0.239)	(0.283)	
2	1.threat#14.hweek#1.huryear	-0.119	0.400**	0.0360	0.276	
		(0.278)	(0.197)	(0.236)	(0.266)	
3	1.threat#15.hweek#1.huryear	-0.542**	0.121	-0.242	-0.180	
		(0.257)	(0.221)	(0.277)	(0.332)	
4	1.threat#16.hweek#1.huryear	-0.752***	-0.000836	-0.303	0.0465	
		(0.274)	(0.228)	(0.203)	(0.217)	
5	1.threat#17.hweek#1.huryear	-0.749***	0.177	-0.300	0.246	
		(0.256)	(0.185)	(0.284)	(0.307)	
6	1.threat#18.hweek#1.huryear	-0.492*	0.0827	-0.149	0.0838	
		(0.259)	(0.225)	(0.257)	(0.275)	
7	1.threat#19.hweek#1.huryear	-0.531**	0.0506	-0.100	-0.113	
		(0.262)	(0.200)	(0.232)	(0.270)	
8	1.threat#20.hweek#1.huryear	-0.470*	0.0584	-0.330	-0.00385	
		(0.253)	(0.199)	(0.213)	(0.296)	
	1.threat#1.huryear	0.379*	-0.201	0.230	-0.0198	
		(0.198)	(0.158)	(0.179)	(0.224)	
	1.threat	-0.0473	0.105	-0.0302	0.130	
		(0.130)	(0.114)	(0.118)	(0.133)	
	1.huryear	-0.198***	-0.197***	-0.173***	-0.172***	
		(0.029)	(0.024)	(0.026)	(0.039)	
	0.irene#34.wkcal	0.705***	-0.0262	0.389	0.426	
		(0.254)	(0.184)	(0.275)	(0.286)	Irene 2011
	0.irene#35.wkcal	-0.169	0.0829	0.192	0.499***	
		(0.204)	(0.155)	(0.151)	(0.173)	
	N	377120	582400	460200	238320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-59: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household race for bottled water

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1) Hispanic	(2) White	(3) Black	(4) Asian	
-11	1.threat#1.hweek#1.huryear	0.258	0.0232	0.0882	-0.166	
		(0.610)	(0.106)	(0.254)	(0.823)	
-10	1.threat#2.hweek#1.huryear	-0.489	0.0134	0.0257	-0.663	
		(0.582)	(0.107)	(0.268)	(0.762)	
-9	1.threat#3.hweek#1.huryear	-0.400	-0.0846	0.516**	0.596	
		(0.543)	(0.121)	(0.240)	(0.702)	
-8	1.threat#4.hweek#1.huryear	0.968	0.0318	-0.0812	-0.113	
		(0.608)	(0.103)	(0.274)	(0.716)	
-7	1.threat#5.hweek#1.huryear	-0.215	-0.0776	0.355	0.513	
		(0.490)	(0.106)	(0.266)	(0.792)	
-6	1.threat#6.hweek#1.huryear	0.138	-0.0712	0.105	-0.206	
		(0.531)	(0.100)	(0.236)	(0.691)	
-5	1.threat#7.hweek#1.huryear	-0.709	-0.0464	0.172	-0.208	
		(0.522)	(0.087)	(0.220)	(0.568)	
-4	1.threat#8.hweek#1.huryear	-0.485	-0.173*	-0.172	-0.0178	
		(0.645)	(0.097)	(0.246)	(0.625)	
-3	1.threat#9.hweek#1.huryear	-0.398	-0.0158	-0.0113	0.115	
		(0.508)	(0.097)	(0.276)	(0.795)	
-2	1.threat#10.hweek#1.huryear			(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.496	0.502***	0.655**	0.471	
		(0.618)	(0.113)	(0.307)	(0.727)	
0	1.threat#12.hweek#1.huryear	0.630	0.240**	0.383	0.355	Sandy week
		(0.537)	(0.106)	(0.257)	(0.813)	
1	1.threat#13.hweek#1.huryear	-0.275	-0.0466	-0.0894	0.168	
		(0.580)	(0.101)	(0.326)	(0.603)	
2	1.threat#14.hweek#1.huryear	0.160	-0.0288	-0.156	0.564	
		(0.521)	(0.099)	(0.246)	(0.602)	
3	1.threat#15.hweek#1.huryear	-0.373	-0.0258	0.444	-0.120	
		(0.515)	(0.101)	(0.303)	(0.563)	
4	1.threat#16.hweek#1.huryear	-0.661	-0.198**	0.0343	-0.0642	
		(0.436)	(0.095)	(0.233)	(0.620)	
5	1.threat#17.hweek#1.huryear	0.452	-0.0469	0.182	-0.345	
		(0.556)	(0.095)	(0.225)	(0.580)	
6	1.threat#18.hweek#1.huryear	0.0177	-0.0769	0.0900	-0.389	
		(0.603)	(0.099)	(0.232)	(0.652)	
7	1.threat#19.hweek#1.huryear	0.0412	-0.0505	0.130	0.0162	
		(0.634)	(0.092)	(0.245)	(0.660)	
8	1.threat#20.hweek#1.huryear	0.161	0.0451	-0.0475	-0.489	
		(0.488)	(0.089)	(0.238)	(0.592)	
	1.threat#1.huryear	0.121	0.0321	0.0370	0.0300	
		(0.416)	(0.079)	(0.178)	(0.571)	
	1.threat	-0.0890	-0.0352	-0.195	0.206	
		(0.209)	(0.054)	(0.128)	(0.261)	
	1.huryear	0.0340	0.0372***	-0.0384	-0.0607	
		(0.059)	(0.012)	(0.041)	(0.092)	
	0.irene#34.wkcal	-1.566**	-0.390***	-0.340	-0.568	Irene 2011
		(0.777)	(0.120)	(0.387)	(0.900)	
	0.irene#35.wkcal	-0.814**	-0.307***	0.0245	0.410	
		(0.380)	(0.079)	(0.202)	(0.412)	
	N	67920	1365160	164440	29080	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-60: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household race for peanut butter

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1) Hispanic	(2) White	(3) Black	(4) Asian	
-11	1.threat#1.hweek#1.huryear	0.126	0.230***	-0.128	-0.000837	
		(0.374)	(0.078)	(0.176)	(0.343)	
-10	1.threat#2.hweek#1.huryear	-0.736**	0.260***	-0.0149	0.126	
		(0.361)	(0.075)	(0.180)	(0.324)	
-9	1.threat#3.hweek#1.huryear	-0.345	0.232***	-0.202	0.374	
		(0.344)	(0.087)	(0.180)	(0.394)	
-8	1.threat#4.hweek#1.huryear	-0.0386	0.359***	0.0498	0.359	
		(0.403)	(0.080)	(0.190)	(0.258)	
-7	1.threat#5.hweek#1.huryear	-0.155	0.323***	-0.105	0.0776	
		(0.308)	(0.078)	(0.216)	(0.333)	
-6	1.threat#6.hweek#1.huryear	0.125	0.222***	-0.155	-0.152	
		(0.396)	(0.080)	(0.192)	(0.285)	
-5	1.threat#7.hweek#1.huryear	-0.266	0.223***	0.0441	0.453	
		(0.388)	(0.077)	(0.212)	(0.318)	
-4	1.threat#8.hweek#1.huryear	-0.302	0.173**	-0.314*	0.561*	
		(0.302)	(0.077)	(0.163)	(0.315)	
-3	1.threat#9.hweek#1.huryear	0.0490	0.153**	-0.236	-0.105	
		(0.414)	(0.076)	(0.177)	(0.276)	
-2	1.threat#10.hweek#1.huryear	(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	-0.322	0.180**	-0.101	0.0283	
		(0.345)	(0.079)	(0.197)	(0.334)	
0	1.threat#12.hweek#1.huryear	0.0840	0.146*	0.0245	0.159	Sandy week
		(0.420)	(0.080)	(0.124)	(0.273)	
1	1.threat#13.hweek#1.huryear	-0.154	0.233***	-0.132	0.226	
		(0.400)	(0.079)	(0.181)	(0.328)	
2	1.threat#14.hweek#1.huryear	-0.0121	0.344***	-0.182	0.516	
		(0.322)	(0.078)	(0.168)	(0.316)	
3	1.threat#15.hweek#1.huryear	0.00479	0.329***	-0.0268	0.375	
		(0.339)	(0.073)	(0.178)	(0.345)	
4	1.threat#16.hweek#1.huryear	-0.0159	0.266***	-0.185	0.179	
		(0.369)	(0.077)	(0.208)	(0.285)	
5	1.threat#17.hweek#1.huryear	0.240	0.342***	-0.412**	-0.125	
		(0.395)	(0.080)	(0.184)	(0.262)	
6	1.threat#18.hweek#1.huryear	0.133	0.425***	-0.0286	0.0905	
		(0.436)	(0.083)	(0.200)	(0.283)	
7	1.threat#19.hweek#1.huryear	-0.310	0.425***	-0.0489	1.016**	
		(0.411)	(0.076)	(0.199)	(0.425)	
8	1.threat#20.hweek#1.huryear	-0.139	0.406***	-0.00603	0.368	
		(0.299)	(0.075)	(0.178)	(0.288)	
	1.threat#1.huryear	0.226	-0.220***	0.137	-0.358*	
		(0.257)	(0.053)	(0.150)	(0.203)	
	1.threat	0.0201	-0.0806***	-0.00662	0.0158	
		(0.083)	(0.028)	(0.042)	(0.092)	
	1.huryear	-0.0571**	-0.0683***	-0.0298*	0.0415	
		(0.028)	(0.008)	(0.017)	(0.048)	
	0.irene#34.wkcal	-0.446*	-0.236***	-0.213	-0.302	Irene 2011
		(0.243)	(0.089)	(0.166)	(0.652)	
	0.irene#35.wkcal	-0.0152	0.0338	-0.182	0.256	
		(0.229)	(0.055)	(0.129)	(0.216)	
	N	67920	1365160	164440	29080	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-61: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household race for canned beans

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1) Hispanic	(2) White	(3) Black	(4) Asian	
-11	1.threat#1.hweek#1.huryear	-0.0905	0.103	0.162	0.292	
		(0.362)	(0.065)	(0.151)	(0.338)	
-10	1.threat#2.hweek#1.huryear	0.0932	0.0403	0.125	0.154	
		(0.412)	(0.074)	(0.145)	(0.329)	
-9	1.threat#3.hweek#1.huryear	-0.337	-0.0174	0.00559	0.573	
		(0.313)	(0.078)	(0.130)	(0.408)	
-8	1.threat#4.hweek#1.huryear	0.133	0.0623	0.144	0.0552	
		(0.394)	(0.070)	(0.168)	(0.271)	
-7	1.threat#5.hweek#1.huryear	-0.0922	-0.0360	-0.00849	0.502	
		(0.315)	(0.066)	(0.144)	(0.422)	
-6	1.threat#6.hweek#1.huryear	0.0817	-0.0899	-0.256*	0.492	
		(0.341)	(0.071)	(0.132)	(0.401)	
-5	1.threat#7.hweek#1.huryear	-0.112	0.0413	0.0526	-0.0488	
		(0.383)	(0.077)	(0.157)	(0.293)	
-4	1.threat#8.hweek#1.huryear	0.656**	-0.146*	-0.0439	-0.346	
		(0.324)	(0.078)	(0.127)	(0.311)	
-3	1.threat#9.hweek#1.huryear	0.380	-0.0433	-0.160	0.683*	
		(0.389)	(0.072)	(0.135)	(0.359)	
-2	1.threat#10.hweek#1.huryear	(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	-0.0872	-0.113	0.0958	0.377	
		(0.345)	(0.077)	(0.157)	(0.332)	
0	1.threat#12.hweek#1.huryear	-0.133	-0.230***	-0.202	0.000517	Sandy week
		(0.344)	(0.084)	(0.152)	(0.281)	
1	1.threat#13.hweek#1.huryear	0.109	-0.0223	0.0719	-0.265	
		(0.381)	(0.074)	(0.148)	(0.262)	
2	1.threat#14.hweek#1.huryear	0.0117	-0.0285	-0.0647	-0.0372	
		(0.346)	(0.075)	(0.136)	(0.339)	
3	1.threat#15.hweek#1.huryear	0.396	-0.0240	0.259*	0.177	
		(0.439)	(0.071)	(0.152)	(0.337)	
4	1.threat#16.hweek#1.huryear	0.161	-0.0182	-0.0654	0.107	
		(0.316)	(0.073)	(0.144)	(0.351)	
5	1.threat#17.hweek#1.huryear	-0.139	-0.131**	0.182	0.233	
		(0.369)	(0.067)	(0.155)	(0.362)	
6	1.threat#18.hweek#1.huryear	0.196	0.00133	0.0836	0.0389	
		(0.346)	(0.076)	(0.129)	(0.306)	
7	1.threat#19.hweek#1.huryear	0.0771	-0.0386	-0.149	0.379	
		(0.377)	(0.068)	(0.137)	(0.323)	
8	1.threat#20.hweek#1.huryear	0.103	-0.128*	0.196	0.0320	
		(0.354)	(0.071)	(0.150)	(0.308)	
	1.threat#1.huryear	0.00404	0.0166	0.0337	-0.162	
		(0.261)	(0.057)	(0.098)	(0.230)	
	1.threat	-0.0183	-0.219***	-0.0304	-0.0121	
		(0.116)	(0.030)	(0.049)	(0.140)	
	1.huryear	-0.0149	-0.00210	0.0106	-0.0386	
		(0.039)	(0.007)	(0.021)	(0.054)	
	0.irene#34.wkcal	-0.417	-0.133*	-0.202	0.417	
		(0.274)	(0.073)	(0.178)	(0.336)	Irene 2011
	0.irene#35.wkcal	0.0910	0.0911**	-0.196*	-0.0176	
		(0.236)	(0.043)	(0.100)	(0.187)	
	N	67920	1365160	164440	29080	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-62: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household race for toilet paper

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1) Hispanic	(2) White	(3) Black	(4) Asian	
-11	1.threat#1.hweek#1.huryear	0.572	-0.0560	-0.207	1.046**	
		(0.482)	(0.102)	(0.244)	(0.515)	
-10	1.threat#2.hweek#1.huryear	-0.255	-0.225**	-0.0884	1.054*	
		(0.394)	(0.092)	(0.231)	(0.551)	
-9	1.threat#3.hweek#1.huryear	-0.00213	-0.337***	-0.325	0.0945	
		(0.396)	(0.108)	(0.222)	(0.438)	
-8	1.threat#4.hweek#1.huryear	-0.0656	-0.254**	0.00582	0.634	
		(0.409)	(0.106)	(0.236)	(0.496)	
-7	1.threat#5.hweek#1.huryear	-0.188	-0.224**	-0.408*	0.885*	
		(0.394)	(0.109)	(0.216)	(0.528)	
-6	1.threat#6.hweek#1.huryear	0.293	-0.148	-0.149	0.168	
		(0.344)	(0.103)	(0.223)	(0.475)	
-5	1.threat#7.hweek#1.huryear	-0.285	-0.0890	-0.412	0.0253	
		(0.385)	(0.099)	(0.258)	(0.494)	
-4	1.threat#8.hweek#1.huryear	0.214	-0.262**	-0.0755	0.429	
		(0.524)	(0.112)	(0.245)	(0.389)	
-3	1.threat#9.hweek#1.huryear	-0.133	-0.207	-0.0951	0.363	
		(0.386)	(0.127)	(0.243)	(0.532)	
-2	1.threat#10.hweek#1.huryear	(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	0.217	0.138	0.157	0.831*	
		(0.492)	(0.106)	(0.226)	(0.473)	
0	1.threat#12.hweek#1.huryear	0.0262	-0.435***	-0.354	0.279	Sandy week
		(0.441)	(0.108)	(0.250)	(0.556)	
1	1.threat#13.hweek#1.huryear	0.418	-0.185*	-0.298	0.250	
		(0.478)	(0.102)	(0.225)	(0.443)	
2	1.threat#14.hweek#1.huryear	0.367	-0.165*	-0.199	0.675	
		(0.410)	(0.098)	(0.280)	(0.466)	
3	1.threat#15.hweek#1.huryear	0.245	-0.121	-0.289	0.809	
		(0.476)	(0.111)	(0.217)	(0.549)	
4	1.threat#16.hweek#1.huryear	-0.0117	-0.158	-0.187	1.114**	
		(0.537)	(0.113)	(0.252)	(0.537)	
5	1.threat#17.hweek#1.huryear	0.0198	-0.192**	0.166	0.432	
		(0.397)	(0.096)	(0.202)	(0.458)	
6	1.threat#18.hweek#1.huryear	0.162	-0.241**	-0.0551	0.261	
		(0.380)	(0.095)	(0.239)	(0.478)	
7	1.threat#19.hweek#1.huryear	0.102	0.000672	-0.0289	0.514	
		(0.366)	(0.113)	(0.251)	(0.488)	
8	1.threat#20.hweek#1.huryear	0.500	-0.194*	-0.0926	0.258	
		(0.362)	(0.101)	(0.213)	(0.489)	
	1.threat#1.huryear	-0.113	0.146*	0.130	-0.508	
		(0.318)	(0.077)	(0.181)	(0.370)	
	1.threat	-0.244*	-0.225***	-0.180*	0.0607	
		(0.139)	(0.035)	(0.096)	(0.154)	
	1.huryear	-0.110***	-0.0779***	-0.0677***	-0.0974*	
		(0.038)	(0.009)	(0.025)	(0.057)	
	0.irene#34.wkcal	0.00399	-0.113	-0.188	-0.0543	Irene 2011
		(0.275)	(0.081)	(0.176)	(0.639)	
	0.irene#35.wkcal	0.424	0.337***	0.190	0.126	
		(0.299)	(0.068)	(0.160)	(0.330)	
	N	67920	1365160	164440	29080	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-63: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household race for dry pasta

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1) Hispanic	(2) White	(3) Black	(4) Asian	
-11	1.threat#1.hweek#1.huryear	0.108	-0.315***	-0.114	-1.223*	
		(0.545)	(0.115)	(0.331)	(0.693)	
-10	1.threat#2.hweek#1.huryear	0.165	-0.427***	-0.328	-1.167*	
		(0.501)	(0.105)	(0.246)	(0.609)	
-9	1.threat#3.hweek#1.huryear	0.156	0.0141	-0.236	-0.969	
		(0.551)	(0.109)	(0.270)	(0.617)	
-8	1.threat#4.hweek#1.huryear	0.477	0.0359	0.00221	-1.098*	
		(0.511)	(0.101)	(0.219)	(0.620)	
-7	1.threat#5.hweek#1.huryear	0.186	-0.0539	-0.0448	-0.238	
		(0.498)	(0.105)	(0.314)	(0.838)	
-6	1.threat#6.hweek#1.huryear	-0.746	-0.183*	-0.262	-0.695	
		(0.508)	(0.103)	(0.277)	(0.589)	
-5	1.threat#7.hweek#1.huryear	-0.619	0.0281	-0.0523	-1.319*	
		(0.439)	(0.119)	(0.309)	(0.681)	
-4	1.threat#8.hweek#1.huryear	-0.249	-0.145	-0.286	-1.185*	
		(0.484)	(0.103)	(0.352)	(0.695)	
-3	1.threat#9.hweek#1.huryear	0.442	-0.113	-0.389	0.461	
		(0.572)	(0.112)	(0.307)	(0.668)	
-2	1.threat#10.hweek#1.huryear	(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	0.223	0.0144	-0.181	-0.375	
		(0.610)	(0.129)	(0.301)	(0.626)	
0	1.threat#12.hweek#1.huryear	-1.121***	-0.585***	-0.314	-1.446**	Sandy week
		(0.400)	(0.125)	(0.263)	(0.612)	
1	1.threat#13.hweek#1.huryear	0.589	-0.229**	-0.0556	-0.881*	
		(0.514)	(0.099)	(0.353)	(0.487)	
2	1.threat#14.hweek#1.huryear	0.140	-0.0987	-0.292	-0.446	
		(0.565)	(0.106)	(0.287)	(0.652)	
3	1.threat#15.hweek#1.huryear	0.153	-0.275***	0.373	-1.027*	
		(0.565)	(0.102)	(0.307)	(0.591)	
4	1.threat#16.hweek#1.huryear	0.0534	-0.257**	-0.483*	-0.112	
		(0.459)	(0.114)	(0.274)	(0.725)	
5	1.threat#17.hweek#1.huryear	-0.0452	-0.0602	-0.126	-0.663	
		(0.508)	(0.117)	(0.310)	(0.662)	
6	1.threat#18.hweek#1.huryear	-0.375	-0.109	-0.0558	-0.369	
		(0.467)	(0.120)	(0.275)	(0.726)	
7	1.threat#19.hweek#1.huryear	-0.243	-0.0331	-0.390	-0.648	
		(0.456)	(0.099)	(0.267)	(0.511)	
8	1.threat#20.hweek#1.huryear	-0.0592	-0.160	0.140	-1.392**	
		(0.519)	(0.103)	(0.300)	(0.562)	
	1.threat#1.huryear	0.0779	0.137*	0.182	0.617	
		(0.367)	(0.080)	(0.258)	(0.491)	
	1.threat	0.306**	0.347***	0.340***	0.121	
		(0.133)	(0.042)	(0.070)	(0.199)	
	1.huryear	-0.0765*	-0.0417***	0.00554	0.0279	
		(0.040)	(0.010)	(0.025)	(0.069)	
	0.irene#34.wkcal	-0.949***	-0.167**	-0.0916	0.0511	Irene 2011
		(0.265)	(0.077)	(0.162)	(0.612)	
	0.irene#35.wkcal	0.0476	-0.169***	-0.208	0.509	
		(0.282)	(0.064)	(0.164)	(0.317)	
	N	67920	1365160	164440	29080	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-64: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across household race for bread

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member)				Remarks
		(1) Hispanic	(2) White	(3) Black	(4) Asian	
-11	1.threat#1.hweek#1.huryear	0.641	-0.207	-0.343	-0.552	
		(0.678)	(0.146)	(0.266)	(0.728)	
-10	1.threat#2.hweek#1.huryear	-0.117	-0.480***	0.0662	-0.764	
		(0.563)	(0.125)	(0.321)	(0.659)	
-9	1.threat#3.hweek#1.huryear	-0.893	-0.169	-0.0972	0.347	
		(0.583)	(0.134)	(0.315)	(0.909)	
-8	1.threat#4.hweek#1.huryear	0.274	-0.0481	-0.0880	-0.342	
		(0.580)	(0.144)	(0.295)	(0.613)	
-7	1.threat#5.hweek#1.huryear	-0.00831	0.0685	0.161	1.090	
		(0.568)	(0.154)	(0.332)	(0.833)	
-6	1.threat#6.hweek#1.huryear	0.00589	0.00911	0.201	-0.229	
		(0.525)	(0.128)	(0.307)	(0.813)	
-5	1.threat#7.hweek#1.huryear	-0.390	-0.198	0.199	-0.959	
		(0.544)	(0.134)	(0.317)	(0.685)	
-4	1.threat#8.hweek#1.huryear	-0.106	-0.213	-0.323	-0.384	
		(0.746)	(0.133)	(0.275)	(0.749)	
-3	1.threat#9.hweek#1.huryear	-0.614	-0.131	-0.155	0.803	
		(0.611)	(0.152)	(0.352)	(0.727)	
-2	1.threat#10.hweek#1.huryear	(omitted)				Base week
-1	1.threat#11.hweek#1.huryear	0.678	0.441***	0.303	0.651	
		(0.622)	(0.144)	(0.320)	(0.803)	
0	1.threat#12.hweek#1.huryear	-0.528	-0.662***	0.299	-0.199	Sandy week
		(0.529)	(0.169)	(0.306)	(0.778)	
1	1.threat#13.hweek#1.huryear	0.510	-0.139	-0.216	-0.482	
		(0.751)	(0.160)	(0.297)	(0.678)	
2	1.threat#14.hweek#1.huryear	0.192	0.180	0.238	0.318	
		(0.528)	(0.142)	(0.286)	(0.807)	
3	1.threat#15.hweek#1.huryear	-0.607	-0.141	0.0356	-0.294	
		(0.651)	(0.150)	(0.308)	(0.786)	
4	1.threat#16.hweek#1.huryear	-0.401	-0.141	-0.566**	0.457	
		(0.632)	(0.138)	(0.259)	(0.583)	
5	1.threat#17.hweek#1.huryear	0.529	-0.203	0.0350	0.594	
		(0.605)	(0.138)	(0.288)	(0.893)	
6	1.threat#18.hweek#1.huryear	0.106	-0.111	0.0543	0.0395	
		(0.661)	(0.150)	(0.285)	(0.686)	
7	1.threat#19.hweek#1.huryear	-0.387	-0.0631	-0.257	-0.428	
		(0.575)	(0.147)	(0.340)	(0.609)	
8	1.threat#20.hweek#1.huryear	-0.547	-0.253*	0.615**	-0.0644	
		(0.625)	(0.136)	(0.312)	(0.753)	
	1.threat#1.huryear	0.343	0.0513	-0.00211	-0.234	
		(0.496)	(0.102)	(0.179)	(0.543)	
	1.threat	-0.247	0.0534	0.120	-0.354	
		(0.282)	(0.086)	(0.124)	(0.320)	
	1.huryear	-0.415***	-0.182***	-0.139***	-0.0970	
		(0.075)	(0.016)	(0.042)	(0.108)	
	0.irene#34.wkcal	-0.487	0.399**	-0.345	0.954	
		(0.442)	(0.172)	(0.333)	(1.032)	Irene 2011
	0.irene#35.wkcal	0.365	0.118	0.387	1.078**	
		(0.447)	(0.096)	(0.256)	(0.462)	
	N	67920	1365160	164440	29080	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-65: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across presence of children under 18 years old for bottled water

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) With children	(2) No children	Remarks
-11	1.threat#1.hweek#1.huryear	-0.417	0.140	
		(0.278)	(0.096)	
-10	1.threat#2.hweek#1.huryear	-0.463	0.0620	
		(0.286)	(0.119)	
-9	1.threat#3.hweek#1.huryear	-0.217	0.0280	
		(0.247)	(0.114)	
-8	1.threat#4.hweek#1.huryear	-0.454*	0.174	
		(0.260)	(0.106)	
-7	1.threat#5.hweek#1.huryear	-0.383	0.0637	
		(0.262)	(0.099)	
-6	1.threat#6.hweek#1.huryear	-0.667***	0.106	
		(0.245)	(0.100)	
-5	1.threat#7.hweek#1.huryear	-0.598***	0.0643	
		(0.232)	(0.091)	
-4	1.threat#8.hweek#1.huryear	-0.836***	-0.0469	
		(0.231)	(0.101)	
-3	1.threat#9.hweek#1.huryear	-0.420*	0.0702	
		(0.246)	(0.093)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.127	0.664***	
		(0.279)	(0.113)	
0	1.threat#12.hweek#1.huryear	0.0601	0.330***	Sandy week
		(0.285)	(0.105)	
1	1.threat#13.hweek#1.huryear	-0.489*	0.0449	
		(0.263)	(0.105)	
2	1.threat#14.hweek#1.huryear	-0.506**	0.0969	
		(0.231)	(0.098)	
3	1.threat#15.hweek#1.huryear	-0.404*	0.123	
		(0.214)	(0.105)	
4	1.threat#16.hweek#1.huryear	-0.600***	-0.0859	
		(0.227)	(0.095)	
5	1.threat#17.hweek#1.huryear	-0.593**	0.119	
		(0.236)	(0.096)	
6	1.threat#18.hweek#1.huryear	-0.682***	0.0839	
		(0.221)	(0.110)	
7	1.threat#19.hweek#1.huryear	-0.388	0.0478	
		(0.251)	(0.086)	
8	1.threat#20.hweek#1.huryear	-0.375*	0.129	
		(0.221)	(0.084)	
	1.threat#1.huryear	0.513***	-0.0704	
		(0.182)	(0.079)	
	1.threat	-0.0373	-0.0324	
		(0.109)	(0.053)	
	1.huryear	-0.0420	0.0426***	
		(0.030)	(0.012)	
	0.irene#34.wkcal	-0.358	-0.508***	Irene 2011
		(0.305)	(0.147)	
	0.irene#35.wkcal	-0.244	-0.263***	
		(0.172)	(0.079)	
	N	298920	1359120	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-66: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across presence of children under 18 years old for peanut butter

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) With children	(2) No children	Remarks
-11	1.threat#1.hweek#1.huryear	0.0134	0.217***	
		(0.189)	(0.073)	
-10	1.threat#2.hweek#1.huryear	0.285	0.142**	
		(0.206)	(0.067)	
-9	1.threat#3.hweek#1.huryear	-0.159	0.244***	
		(0.201)	(0.073)	
-8	1.threat#4.hweek#1.huryear	0.0328	0.366***	
		(0.187)	(0.078)	
-7	1.threat#5.hweek#1.huryear	0.133	0.273***	
		(0.194)	(0.076)	
-6	1.threat#6.hweek#1.huryear	0.106	0.179***	
		(0.178)	(0.068)	
-5	1.threat#7.hweek#1.huryear	0.167	0.192***	
		(0.201)	(0.072)	
-4	1.threat#8.hweek#1.huryear	-0.0265	0.145**	
		(0.188)	(0.067)	
-3	1.threat#9.hweek#1.huryear	0.0845	0.0970	
		(0.205)	(0.068)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.162	0.111	
		(0.182)	(0.073)	
0	1.threat#12.hweek#1.huryear	0.0295	0.151**	Sandy week
		(0.198)	(0.071)	
1	1.threat#13.hweek#1.huryear	0.0954	0.185**	
		(0.189)	(0.079)	
2	1.threat#14.hweek#1.huryear	0.199	0.293***	
		(0.200)	(0.071)	
3	1.threat#15.hweek#1.huryear	0.124	0.333***	
		(0.177)	(0.068)	
4	1.threat#16.hweek#1.huryear	0.254	0.185**	
		(0.177)	(0.078)	
5	1.threat#17.hweek#1.huryear	0.0799	0.279***	
		(0.188)	(0.073)	
6	1.threat#18.hweek#1.huryear	0.376*	0.320***	
		(0.194)	(0.077)	
7	1.threat#19.hweek#1.huryear	0.175	0.388***	
		(0.182)	(0.077)	
8	1.threat#20.hweek#1.huryear	0.341*	0.336***	
		(0.182)	(0.068)	
	1.threat#1.huryear	-0.121	-0.171***	
		(0.140)	(0.052)	
	1.threat	-0.0661	-0.0803***	
		(0.059)	(0.030)	
	1.huryear	-0.0526***	-0.0658***	
		(0.019)	(0.008)	
	0.irene#34.wkcal	0.0112	-0.239***	Irene 2011
		(0.163)	(0.078)	
	0.irene#35.wkcal	0.112	-0.00873	
		(0.123)	(0.052)	
	N	298920	1359120	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-67: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across presence of children under 18 years old for canned beans

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) With children	(2) No children	Remarks
-11	1.threat#1.hweek#1.huryear	-0.00313	0.133**	
		(0.154)	(0.065)	
-10	1.threat#2.hweek#1.huryear	-0.0773	0.0872	
		(0.142)	(0.077)	
-9	1.threat#3.hweek#1.huryear	-0.130	-0.00155	
		(0.156)	(0.075)	
-8	1.threat#4.hweek#1.huryear	-0.0815	0.0945	
		(0.146)	(0.071)	
-7	1.threat#5.hweek#1.huryear	-0.114	0.00200	
		(0.145)	(0.065)	
-6	1.threat#6.hweek#1.huryear	-0.179	-0.0712	
		(0.155)	(0.065)	
-5	1.threat#7.hweek#1.huryear	0.0307	0.0396	
		(0.180)	(0.073)	
-4	1.threat#8.hweek#1.huryear	-0.235	-0.0829	
		(0.156)	(0.076)	
-3	1.threat#9.hweek#1.huryear	-0.203	0.0145	
		(0.164)	(0.070)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.0848	-0.0754	
		(0.171)	(0.070)	
0	1.threat#12.hweek#1.huryear	-0.410**	-0.182**	Sandy week
		(0.163)	(0.083)	
1	1.threat#13.hweek#1.huryear	-0.206	0.0211	
		(0.161)	(0.068)	
2	1.threat#14.hweek#1.huryear	-0.0729	-0.0224	
		(0.175)	(0.066)	
3	1.threat#15.hweek#1.huryear	0.0523	0.0256	
		(0.161)	(0.067)	
4	1.threat#16.hweek#1.huryear	-0.204	0.0167	
		(0.150)	(0.068)	
5	1.threat#17.hweek#1.huryear	-0.279*	-0.0347	
		(0.160)	(0.069)	
6	1.threat#18.hweek#1.huryear	-0.250	0.0789	
		(0.156)	(0.069)	
7	1.threat#19.hweek#1.huryear	-0.0721	-0.0258	
		(0.143)	(0.067)	
8	1.threat#20.hweek#1.huryear	-0.146	-0.0695	
		(0.145)	(0.073)	
	1.threat#1.huryear	0.0972	-0.00305	
		(0.117)	(0.054)	
	1.threat	-0.261***	-0.171***	
		(0.050)	(0.027)	
	1.huryear	-0.00776	-0.000972	
		(0.018)	(0.008)	
	0.irene#34.wkcal	-0.0527	-0.159**	Irene 2011
		(0.155)	(0.074)	
	0.irene#35.wkcal	0.127	0.0411	
		(0.089)	(0.041)	
	N	298920	1359120	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-68: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across presence of children under 18 years old for toilet paper

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) With children	(2) No children	Remarks
-11	1.threat#1.hweek#1.huryear	-0.264	0.0154	
		(0.192)	(0.098)	
-10	1.threat#2.hweek#1.huryear	-0.339*	-0.147	
		(0.202)	(0.093)	
-9	1.threat#3.hweek#1.huryear	-0.415**	-0.303***	
		(0.202)	(0.094)	
-8	1.threat#4.hweek#1.huryear	-0.354*	-0.181*	
		(0.214)	(0.104)	
-7	1.threat#5.hweek#1.huryear	-0.133	-0.235**	
		(0.214)	(0.099)	
-6	1.threat#6.hweek#1.huryear	-0.118	-0.139	
		(0.203)	(0.099)	
-5	1.threat#7.hweek#1.huryear	-0.468**	-0.0611	
		(0.213)	(0.097)	
-4	1.threat#8.hweek#1.huryear	-0.304	-0.200**	
		(0.220)	(0.100)	
-3	1.threat#9.hweek#1.huryear	-0.150	-0.177	
		(0.211)	(0.117)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.251	0.130	
		(0.226)	(0.100)	
0	1.threat#12.hweek#1.huryear	-0.119	-0.457***	Sandy week
		(0.243)	(0.107)	
1	1.threat#13.hweek#1.huryear	-0.180	-0.181**	
		(0.232)	(0.091)	
2	1.threat#14.hweek#1.huryear	-0.407**	-0.0786	
		(0.205)	(0.096)	
3	1.threat#15.hweek#1.huryear	-0.110	-0.0980	
		(0.210)	(0.103)	
4	1.threat#16.hweek#1.huryear	-0.122	-0.122	
		(0.234)	(0.101)	
5	1.threat#17.hweek#1.huryear	-0.0928	-0.124	
		(0.216)	(0.086)	
6	1.threat#18.hweek#1.huryear	-0.360*	-0.158*	
		(0.192)	(0.085)	
7	1.threat#19.hweek#1.huryear	0.256	-0.0586	
		(0.214)	(0.110)	
8	1.threat#20.hweek#1.huryear	-0.218	-0.133	
		(0.210)	(0.091)	
	1.threat#1.huryear	0.201	0.112	
		(0.154)	(0.072)	
	1.threat	-0.342***	-0.194***	
		(0.070)	(0.037)	
	1.huryear	-0.134***	-0.0656***	
		(0.020)	(0.009)	
	0.irene#34.wkcal	-0.0800	-0.0949	Irene 2011
		(0.197)	(0.084)	
	0.irene#35.wkcal	0.346**	0.312***	
		(0.151)	(0.066)	
	N	298920	1359120	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-69: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across presence of children under 18 years old for dry pasta

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) With children	(2) No children	Remarks
-11	1.threat#1.hweek#1.huryear	-0.614**	-0.233**	
		(0.295)	(0.114)	
-10	1.threat#2.hweek#1.huryear	-0.724***	-0.358***	
		(0.226)	(0.115)	
-9	1.threat#3.hweek#1.huryear	-0.360	0.0291	
		(0.233)	(0.117)	
-8	1.threat#4.hweek#1.huryear	-0.143	0.0457	
		(0.248)	(0.093)	
-7	1.threat#5.hweek#1.huryear	0.0712	-0.0843	
		(0.270)	(0.117)	
-6	1.threat#6.hweek#1.huryear	-0.417*	-0.184	
		(0.216)	(0.116)	
-5	1.threat#7.hweek#1.huryear	-0.0166	-0.0570	
		(0.289)	(0.126)	
-4	1.threat#8.hweek#1.huryear	-0.432*	-0.149	
		(0.256)	(0.100)	
-3	1.threat#9.hweek#1.huryear	-0.487*	-0.0346	
		(0.262)	(0.116)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0242	-0.0281	
		(0.273)	(0.129)	
0	1.threat#12.hweek#1.huryear	-0.758***	-0.552***	Sandy week
		(0.270)	(0.134)	
1	1.threat#13.hweek#1.huryear	-0.227	-0.208**	
		(0.222)	(0.105)	
2	1.threat#14.hweek#1.huryear	-0.0480	-0.137	
		(0.262)	(0.106)	
3	1.threat#15.hweek#1.huryear	0.0451	-0.221**	
		(0.270)	(0.111)	
4	1.threat#16.hweek#1.huryear	-0.541**	-0.212*	
		(0.253)	(0.117)	
5	1.threat#17.hweek#1.huryear	-0.123	-0.111	
		(0.264)	(0.135)	
6	1.threat#18.hweek#1.huryear	-0.300	-0.0915	
		(0.240)	(0.120)	
7	1.threat#19.hweek#1.huryear	-0.143	-0.0739	
		(0.221)	(0.104)	
8	1.threat#20.hweek#1.huryear	-0.201	-0.124	
		(0.245)	(0.105)	
	1.threat#1.huryear	0.263	0.133	
		(0.186)	(0.089)	
	1.threat	0.333***	0.312***	
		(0.081)	(0.042)	
	1.huryear	-0.0559**	-0.0325***	
		(0.024)	(0.009)	
	0.irene#34.wkcal	-0.322	-0.124*	Irene 2011
		(0.245)	(0.075)	
	0.irene#35.wkcal	0.123	-0.196***	
		(0.149)	(0.064)	
	N	298920	1359120	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-70: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across presence of children under 18 years old for bread

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) With children	(2) No children	Remarks
-11	1.threat#1.hweek#1.huryear	-0.541*	-0.157	
		(0.302)	(0.139)	
-10	1.threat#2.hweek#1.huryear	-0.244	-0.480***	
		(0.317)	(0.131)	
-9	1.threat#3.hweek#1.huryear	-0.539	-0.124	
		(0.331)	(0.130)	
-8	1.threat#4.hweek#1.huryear	0.0691	-0.0973	
		(0.337)	(0.138)	
-7	1.threat#5.hweek#1.huryear	0.285	0.0232	
		(0.295)	(0.136)	
-6	1.threat#6.hweek#1.huryear	0.134	-0.0185	
		(0.305)	(0.129)	
-5	1.threat#7.hweek#1.huryear	-0.0871	-0.238*	
		(0.303)	(0.133)	
-4	1.threat#8.hweek#1.huryear	-0.283	-0.255**	
		(0.297)	(0.124)	
-3	1.threat#9.hweek#1.huryear	-0.581*	-0.0397	
		(0.321)	(0.142)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.484	0.407***	
		(0.348)	(0.157)	
0	1.threat#12.hweek#1.huryear	-0.916***	-0.467***	Sandy week
		(0.313)	(0.164)	
1	1.threat#13.hweek#1.huryear	0.202	-0.229	
		(0.281)	(0.154)	
2	1.threat#14.hweek#1.huryear	0.00921	0.209	
		(0.359)	(0.134)	
3	1.threat#15.hweek#1.huryear	-0.00846	-0.194	
		(0.284)	(0.143)	
4	1.threat#16.hweek#1.huryear	-0.188	-0.234*	
		(0.317)	(0.137)	
5	1.threat#17.hweek#1.huryear	-0.101	-0.149	
		(0.332)	(0.127)	
6	1.threat#18.hweek#1.huryear	0.0242	-0.121	
		(0.298)	(0.137)	
7	1.threat#19.hweek#1.huryear	0.351	-0.245*	
		(0.290)	(0.144)	
8	1.threat#20.hweek#1.huryear	-0.0958	-0.173	
		(0.311)	(0.118)	
	1.threat#1.huryear	-0.0718	0.108	
		(0.235)	(0.100)	
	1.threat	0.310**	-0.0739	
		(0.145)	(0.095)	
	1.huryear	-0.273***	-0.169***	
		(0.038)	(0.016)	
	0.irene#34.wkcal	0.197	0.325*	Irene 2011
		(0.251)	(0.171)	
	0.irene#35.wkcal	0.731***	0.0644	
		(0.211)	(0.098)	
	N	298920	1359120	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-71: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across vehicle ownership for bottled water

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) Vehicle owner	(2) Without vehicle	Remarks
-11	1.threat#1.hweek#1.huryear	-0.105	0.266*	
		(0.153)	(0.137)	
-10	1.threat#2.hweek#1.huryear	0.0865	-0.0619	
		(0.170)	(0.139)	
-9	1.threat#3.hweek#1.huryear	-0.0515	0.0573	
		(0.175)	(0.137)	
-8	1.threat#4.hweek#1.huryear	0.314**	-0.117	
		(0.158)	(0.136)	
-7	1.threat#5.hweek#1.huryear	-0.0642	0.119	
		(0.142)	(0.133)	
-6	1.threat#6.hweek#1.huryear	-0.0313	0.0408	
		(0.154)	(0.126)	
-5	1.threat#7.hweek#1.huryear	0.0213	-0.0882	
		(0.138)	(0.127)	
-4	1.threat#8.hweek#1.huryear	-0.315*	-0.131	
		(0.167)	(0.148)	
-3	1.threat#9.hweek#1.huryear	0.119	0.0404	
		(0.154)	(0.143)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.395**	0.411***	
		(0.178)	(0.152)	
0	1.threat#12.hweek#1.huryear	0.387**	0.280**	Sandy week
		(0.171)	(0.134)	
1	1.threat#13.hweek#1.huryear	-0.134	0.0380	
		(0.149)	(0.130)	
2	1.threat#14.hweek#1.huryear	-0.129	0.144	
		(0.143)	(0.131)	
3	1.threat#15.hweek#1.huryear	-0.0511	0.0265	
		(0.149)	(0.154)	
4	1.threat#16.hweek#1.huryear	-0.141	-0.248**	
		(0.155)	(0.124)	
5	1.threat#17.hweek#1.huryear	-0.0570	0.0436	
		(0.131)	(0.138)	
6	1.threat#18.hweek#1.huryear	-0.0599	-0.0343	
		(0.141)	(0.119)	
7	1.threat#19.hweek#1.huryear	0.0812	-0.0741	
		(0.136)	(0.132)	
8	1.threat#20.hweek#1.huryear	0.0425	0.0705	
		(0.127)	(0.118)	
	1.threat#1.huryear	0.0663	0.0212	
		(0.110)	(0.100)	
	1.threat	-0.113	-0.0225	
		(0.081)	(0.073)	
	1.huryear	0.0347*	0.0284*	
		(0.020)	(0.017)	
	0.irene#34.wkcal	-0.755***	-0.168	Irene 2011
		(0.241)	(0.193)	
	0.irene#35.wkcal	-0.336***	-0.338***	
		(0.125)	(0.096)	
	N	689960	560320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-72: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across vehicle ownership for peanut butter

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) Vehicle owner	(2) Without vehicle	Remarks
-11	1.threat#1.hweek#1.huryear	0.365***	0.0127	
		(0.133)	(0.102)	
-10	1.threat#2.hweek#1.huryear	0.415***	-0.0792	
		(0.123)	(0.100)	
-9	1.threat#3.hweek#1.huryear	0.287**	-0.0378	
		(0.131)	(0.104)	
-8	1.threat#4.hweek#1.huryear	0.311**	0.176*	
		(0.121)	(0.100)	
-7	1.threat#5.hweek#1.huryear	0.285**	0.149	
		(0.124)	(0.098)	
-6	1.threat#6.hweek#1.huryear	0.223**	0.00401	
		(0.109)	(0.097)	
-5	1.threat#7.hweek#1.huryear	0.304**	-0.0255	
		(0.123)	(0.089)	
-4	1.threat#8.hweek#1.huryear	0.181	-0.0714	
		(0.110)	(0.093)	
-3	1.threat#9.hweek#1.huryear	0.108	0.00335	
		(0.125)	(0.095)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.216	-0.0511	
		(0.133)	(0.092)	
0	1.threat#12.hweek#1.huryear	0.218*	-0.0294	Sandy week
		(0.123)	(0.107)	
1	1.threat#13.hweek#1.huryear	0.239*	0.0472	
		(0.127)	(0.096)	
2	1.threat#14.hweek#1.huryear	0.339***	0.130	
		(0.108)	(0.110)	
3	1.threat#15.hweek#1.huryear	0.351***	0.189*	
		(0.130)	(0.102)	
4	1.threat#16.hweek#1.huryear	0.417***	-0.0731	
		(0.117)	(0.107)	
5	1.threat#17.hweek#1.huryear	0.361***	0.122	
		(0.128)	(0.109)	
6	1.threat#18.hweek#1.huryear	0.486***	0.121	
		(0.138)	(0.096)	
7	1.threat#19.hweek#1.huryear	0.444***	0.244**	
		(0.126)	(0.110)	
8	1.threat#20.hweek#1.huryear	0.509***	0.128	
		(0.127)	(0.081)	
	1.threat#1.huryear	-0.239***	-0.00641	
		(0.083)	(0.068)	
	1.threat	-0.0643*	-0.0755*	
		(0.037)	(0.041)	
	1.huryear	-0.0761***	-0.0575***	
		(0.011)	(0.012)	
	0.irene#34.wkcal	-0.231**	-0.303**	Irene 2011
		(0.107)	(0.141)	
	0.irene#35.wkcal	0.0103	-0.0307	
		(0.082)	(0.067)	
	N	689960	560320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-73: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across vehicle ownership for canned beans

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) Vehicle owner	(2) Without vehicle	Remarks
-11	1.threat#1.hweek#1.huryear	-0.0945	0.238***	
		(0.116)	(0.089)	
-10	1.threat#2.hweek#1.huryear	0.0240	0.111	
		(0.116)	(0.092)	
-9	1.threat#3.hweek#1.huryear	-0.180	0.105	
		(0.122)	(0.082)	
-8	1.threat#4.hweek#1.huryear	-0.00612	0.0897	
		(0.117)	(0.089)	
-7	1.threat#5.hweek#1.huryear	-0.134	0.0569	
		(0.104)	(0.080)	
-6	1.threat#6.hweek#1.huryear	-0.164	-0.0815	
		(0.116)	(0.088)	
-5	1.threat#7.hweek#1.huryear	-0.0199	-0.00299	
		(0.127)	(0.094)	
-4	1.threat#8.hweek#1.huryear	-0.234*	-0.0259	
		(0.129)	(0.087)	
-3	1.threat#9.hweek#1.huryear	-0.151	0.0608	
		(0.118)	(0.091)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.291**	0.00732	
		(0.124)	(0.084)	
0	1.threat#12.hweek#1.huryear	-0.400***	-0.0871	Sandy week
		(0.127)	(0.091)	
1	1.threat#13.hweek#1.huryear	-0.141	0.0880	
		(0.124)	(0.095)	
2	1.threat#14.hweek#1.huryear	-0.0791	0.0191	
		(0.113)	(0.086)	
3	1.threat#15.hweek#1.huryear	-0.0195	0.0321	
		(0.115)	(0.081)	
4	1.threat#16.hweek#1.huryear	-0.109	0.0368	
		(0.112)	(0.086)	
5	1.threat#17.hweek#1.huryear	-0.271**	0.00779	
		(0.118)	(0.098)	
6	1.threat#18.hweek#1.huryear	-0.0397	0.144*	
		(0.126)	(0.086)	
7	1.threat#19.hweek#1.huryear	-0.0720	-0.0404	
		(0.110)	(0.079)	
8	1.threat#20.hweek#1.huryear	-0.226**	-0.0317	
		(0.113)	(0.083)	
	1.threat#1.huryear	0.118	-0.0567	
		(0.089)	(0.063)	
	1.threat	-0.189***	-0.164***	
		(0.036)	(0.036)	
	1.huryear	0.00877	-0.0112	
		(0.011)	(0.011)	
	0.irene#34.wkcal	-0.110	-0.298**	Irene 2011
		(0.110)	(0.139)	
	0.irene#35.wkcal	0.0260	0.0182	
		(0.064)	(0.058)	
	N	689960	560320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-74: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across vehicle ownership for toilet paper

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) Vehicle owner	(2) Without vehicle	Remarks
-11	1.threat#1.hweek#1.huryear	-0.141	-0.0183	
		(0.163)	(0.157)	
-10	1.threat#2.hweek#1.huryear	-0.244	-0.211	
		(0.154)	(0.143)	
-9	1.threat#3.hweek#1.huryear	-0.350**	-0.338**	
		(0.149)	(0.140)	
-8	1.threat#4.hweek#1.huryear	-0.206	-0.307*	
		(0.136)	(0.163)	
-7	1.threat#5.hweek#1.huryear	-0.322**	-0.232*	
		(0.153)	(0.138)	
-6	1.threat#6.hweek#1.huryear	-0.160	-0.208	
		(0.163)	(0.131)	
-5	1.threat#7.hweek#1.huryear	-0.0260	-0.251*	
		(0.130)	(0.146)	
-4	1.threat#8.hweek#1.huryear	-0.344**	-0.193	
		(0.164)	(0.163)	
-3	1.threat#9.hweek#1.huryear	-0.214	-0.196	
		(0.187)	(0.147)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.0508	0.137	
		(0.163)	(0.140)	
0	1.threat#12.hweek#1.huryear	-0.435***	-0.525***	Sandy week
		(0.160)	(0.168)	
1	1.threat#13.hweek#1.huryear	-0.155	-0.269**	
		(0.145)	(0.136)	
2	1.threat#14.hweek#1.huryear	-0.166	-0.224	
		(0.148)	(0.138)	
3	1.threat#15.hweek#1.huryear	-0.123	-0.213	
		(0.164)	(0.143)	
4	1.threat#16.hweek#1.huryear	-0.195	-0.166	
		(0.163)	(0.162)	
5	1.threat#17.hweek#1.huryear	-0.154	-0.215	
		(0.168)	(0.131)	
6	1.threat#18.hweek#1.huryear	-0.216	-0.213	
		(0.144)	(0.139)	
7	1.threat#19.hweek#1.huryear	-0.0835	0.00576	
		(0.156)	(0.164)	
8	1.threat#20.hweek#1.huryear	-0.202	-0.100	
		(0.153)	(0.125)	
	1.threat#1.huryear	0.157	0.182*	
		(0.114)	(0.111)	
	1.threat	-0.251***	-0.124**	
		(0.050)	(0.049)	
	1.huryear	-0.0790***	-0.0659***	
		(0.013)	(0.013)	
	0.irene#34.wkcal	-0.238*	-0.122	Irene 2011
		(0.131)	(0.147)	
	0.irene#35.wkcal	0.307***	0.205**	
		(0.095)	(0.089)	
	N	689960	560320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-75: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across vehicle ownership for dry pasta

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) Vehicle owner	(2) Without vehicle	Remarks
-11	1.threat#1.hweek#1.huryear	-0.296*	-0.466***	
		(0.155)	(0.170)	
-10	1.threat#2.hweek#1.huryear	-0.590***	-0.520***	
		(0.175)	(0.157)	
-9	1.threat#3.hweek#1.huryear	-0.191	-0.150	
		(0.163)	(0.153)	
-8	1.threat#4.hweek#1.huryear	0.00327	-0.200	
		(0.167)	(0.134)	
-7	1.threat#5.hweek#1.huryear	-0.0228	-0.205	
		(0.175)	(0.176)	
-6	1.threat#6.hweek#1.huryear	-0.249	-0.446***	
		(0.158)	(0.153)	
-5	1.threat#7.hweek#1.huryear	-0.0155	-0.284	
		(0.163)	(0.177)	
-4	1.threat#8.hweek#1.huryear	-0.256	-0.247	
		(0.190)	(0.156)	
-3	1.threat#9.hweek#1.huryear	-0.130	-0.340*	
		(0.197)	(0.179)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	-0.0121	-0.154	
		(0.191)	(0.182)	
0	1.threat#12.hweek#1.huryear	-0.660***	-0.646***	Sandy week
		(0.170)	(0.167)	
1	1.threat#13.hweek#1.huryear	-0.282*	-0.327*	
		(0.158)	(0.181)	
2	1.threat#14.hweek#1.huryear	-0.135	-0.408**	
		(0.167)	(0.166)	
3	1.threat#15.hweek#1.huryear	-0.160	-0.352***	
		(0.174)	(0.134)	
4	1.threat#16.hweek#1.huryear	-0.313*	-0.399**	
		(0.176)	(0.174)	
5	1.threat#17.hweek#1.huryear	-0.215	-0.174	
		(0.185)	(0.172)	
6	1.threat#18.hweek#1.huryear	-0.123	-0.369**	
		(0.166)	(0.162)	
7	1.threat#19.hweek#1.huryear	0.0141	-0.267*	
		(0.171)	(0.153)	
8	1.threat#20.hweek#1.huryear	-0.338**	-0.114	
		(0.150)	(0.175)	
	1.threat#1.huryear	0.227*	0.313**	
		(0.125)	(0.134)	
	1.threat	0.420***	0.215***	
		(0.055)	(0.046)	
	1.huryear	-0.0449***	-0.0292**	
		(0.013)	(0.014)	
	0.irene#34.wkcal	-0.128	-0.126	
		(0.126)	(0.114)	Irene 2011
	0.irene#35.wkcal	-0.162*	-0.0572	
		(0.095)	(0.092)	
	N	689960	560320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Table B-76: Regression results of heterogeneity in average treatment effects of Sandy 2012 in volume per member purchased of household samples split across vehicle ownership for bread

Relative week (t)	Independent variable	Dependent variable: ln(Volume per member) (1) Vehicle owner	(2) Without vehicle	Remarks
-11	1.threat#1.hweek#1.huryear	0.0272	-0.167	
		(0.215)	(0.188)	
-10	1.threat#2.hweek#1.huryear	-0.257	-0.374**	
		(0.190)	(0.169)	
-9	1.threat#3.hweek#1.huryear	0.00313	-0.0901	
		(0.204)	(0.176)	
-8	1.threat#4.hweek#1.huryear	0.203	-0.166	
		(0.201)	(0.177)	
-7	1.threat#5.hweek#1.huryear	0.0726	0.191	
		(0.199)	(0.196)	
-6	1.threat#6.hweek#1.huryear	0.216	-0.112	
		(0.199)	(0.184)	
-5	1.threat#7.hweek#1.huryear	-0.109	-0.177	
		(0.189)	(0.162)	
-4	1.threat#8.hweek#1.huryear	-0.0577	-0.123	
		(0.182)	(0.165)	
-3	1.threat#9.hweek#1.huryear	0.0207	-0.314**	
		(0.224)	(0.159)	
-2	1.threat#10.hweek#1.huryear	(omitted)		Base week
-1	1.threat#11.hweek#1.huryear	0.779***	0.328*	
		(0.223)	(0.178)	
0	1.threat#12.hweek#1.huryear	-0.354*	-0.630***	Sandy week
		(0.204)	(0.228)	
1	1.threat#13.hweek#1.huryear	0.0592	-0.155	
		(0.232)	(0.177)	
2	1.threat#14.hweek#1.huryear	0.380**	0.229	
		(0.192)	(0.165)	
3	1.threat#15.hweek#1.huryear	0.161	-0.285	
		(0.206)	(0.174)	
4	1.threat#16.hweek#1.huryear	-0.130	-0.261	
		(0.212)	(0.180)	
5	1.threat#17.hweek#1.huryear	-0.156	-0.0765	
		(0.188)	(0.175)	
6	1.threat#18.hweek#1.huryear	0.169	-0.116	
		(0.214)	(0.202)	
7	1.threat#19.hweek#1.huryear	0.0893	-0.248	
		(0.202)	(0.178)	
8	1.threat#20.hweek#1.huryear	0.194	-0.125	
		(0.193)	(0.181)	
	1.threat#1.huryear	-0.0453	0.0581	
		(0.141)	(0.136)	
	1.threat	0.177**	-0.0433	
		(0.089)	(0.111)	
	1.huryear	-0.198***	-0.181***	
		(0.023)	(0.024)	
	0.irene#34.wkcal	0.242	0.420*	Irene 2011
		(0.195)	(0.226)	
	0.irene#35.wkcal	0.236*	-0.000662	
		(0.142)	(0.134)	
	N	689960	560320	

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county. Only estimated coefficients (and their standard errors) for 3-way interaction terms are used for the event-study plots.

Appendix C

Chapter 3 Regression Outputs and Supplemental Material

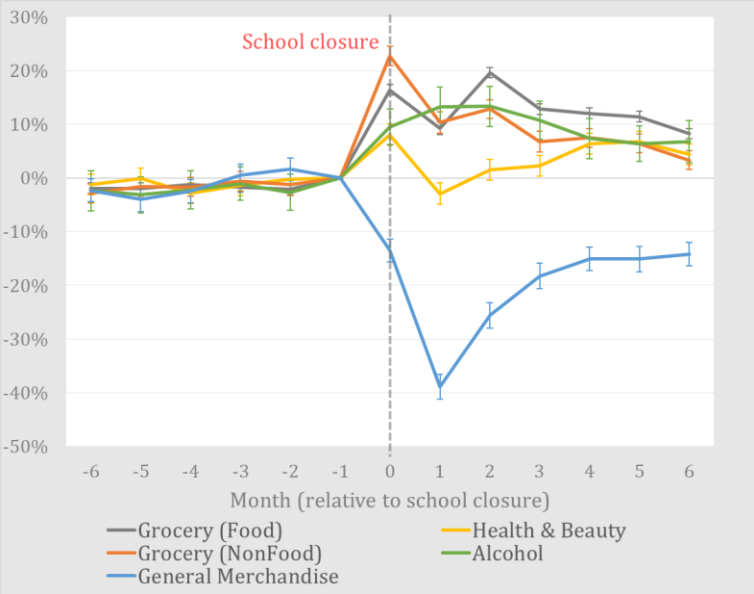


Figure C-1: Event-study plots reflecting year-on-year percentage changes in household spending on various retail good categories during the early pandemic response environment

Based on regressions on the pooled household sample using Equation 3-1, the results provide evidence that households spent more per member on groceries and alcoholic beverages from retail stores once schools began to discontinue in-person learning activities due to the pandemic. Year-on-year spending for food grocery for 7 months (during school closure and after) increased, suggesting sustained higher purchases unlike the one-off stockpiling phenomenon often observed around short-lived weather disasters such as hurricanes. Non-food grocery spending increased year-on-year for six months following a peak at month m=0. Although its peak at month m=0 was directly followed by an insignificant change from prior year levels at m=1, spending on health and beauty products for post-school closure months averaged higher than a year prior. Interestingly, household spending on general merchandise fell sharply compared to a year prior during and a month after school closure, respectively, before averaging lower than a year prior for the five months that followed. This opposite trend in general merchandise purchases strongly suggests some level of budget reallocation by the average household away from general merchandise towards grocery, alcoholic beverages, as well health and beauty products during the early pandemic stage. Within household spending on food grocery, results suggest that households, on average, increased per member spending across the broad food categories, but especially in vegetables as well as seafood and plant proteins.

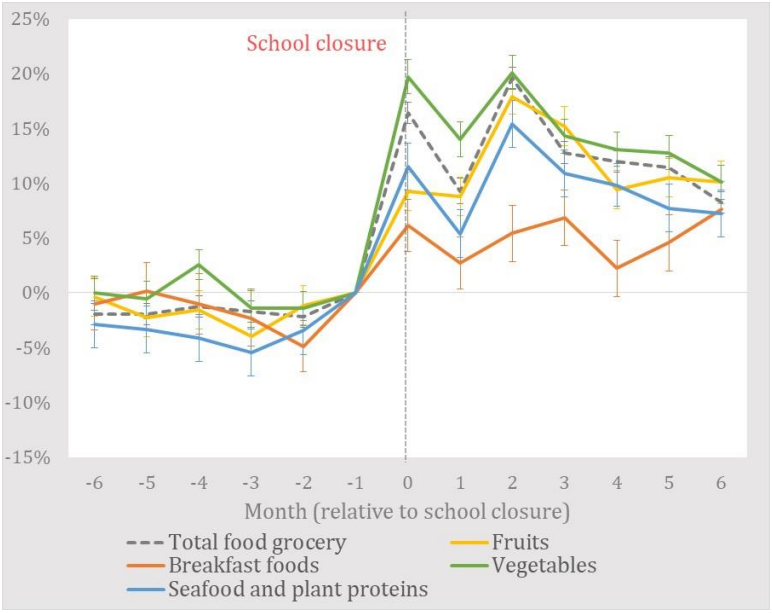


Figure C-2: Event-study plots reflecting year-on-year percentage changes in household spending on various broad food categories during the early pandemic response environment

Based on regressions on the pooled household sample using Equation 3-1, within household spending on food grocery, results suggest that households, on average, increased per member spending across the broad food categories, but especially in vegetables as well as seafood and plant proteins.

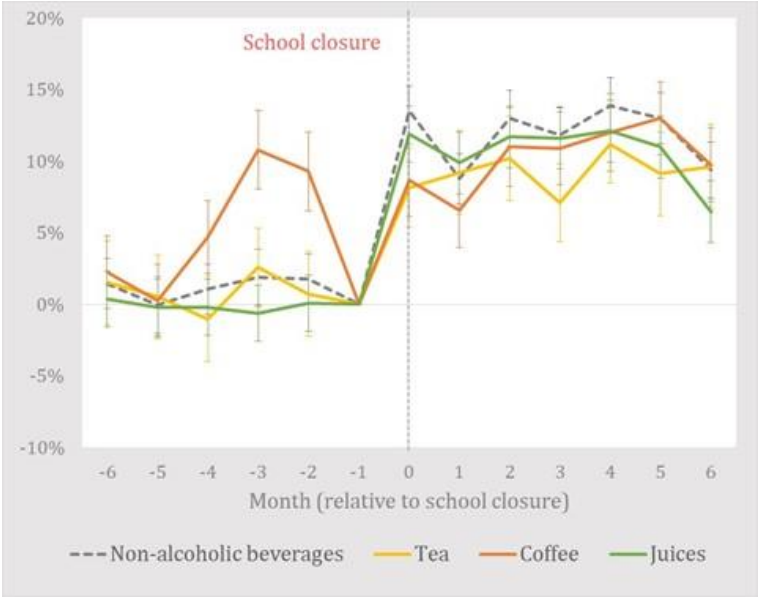


Figure C-3: Event-study plots reflecting year-on-year percentage changes in household spending on non-alcoholic beverages during the early pandemic response environment

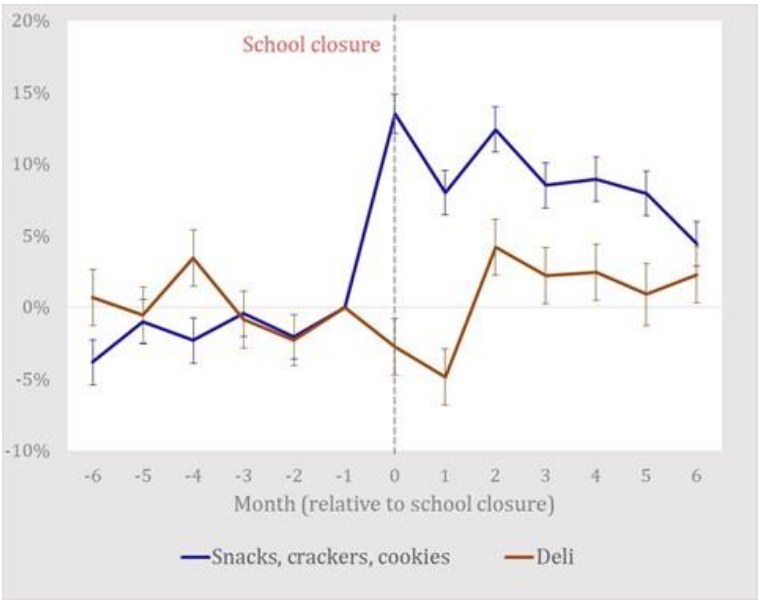


Figure C-4: Event-study plots reflecting year-on-year percentage changes in household spending on other food categories during the early pandemic response environment

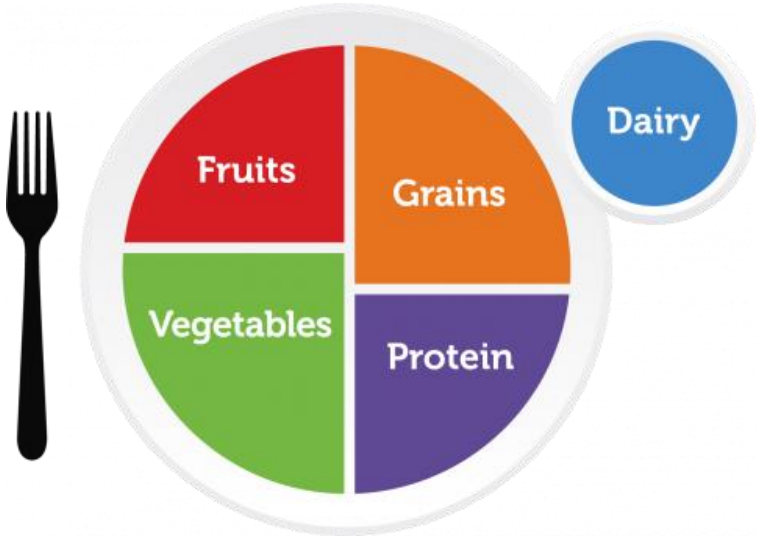


Figure C-5: Broad food categories according to MyPlate.gov based on Dietary Guidelines for Americans 2020-2025 (USDA, 2020)

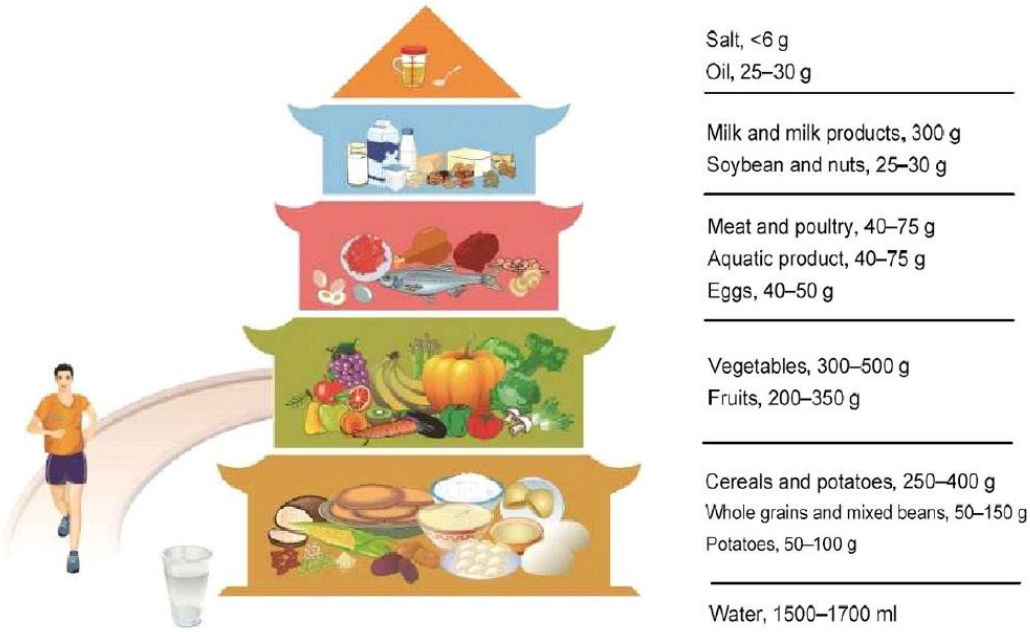


Figure C-6: Broad food categories according to Food Guide Pagoda for Chinese Residents (The Chinese Nutrition Society, 2000)

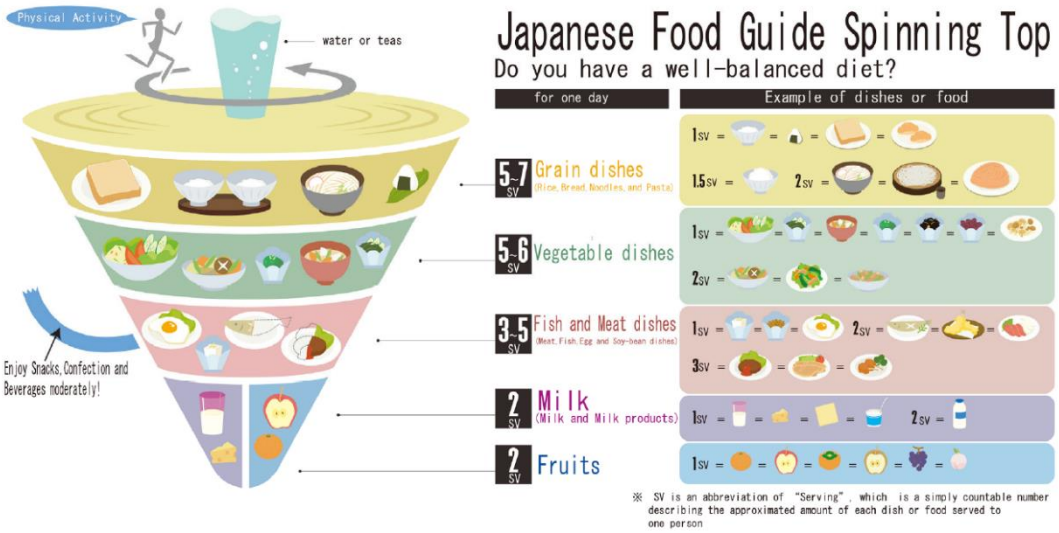


Figure C-7: Broad food categories according to Japanese Food Guide Spinning Top (Yoshiike et al., 2007)

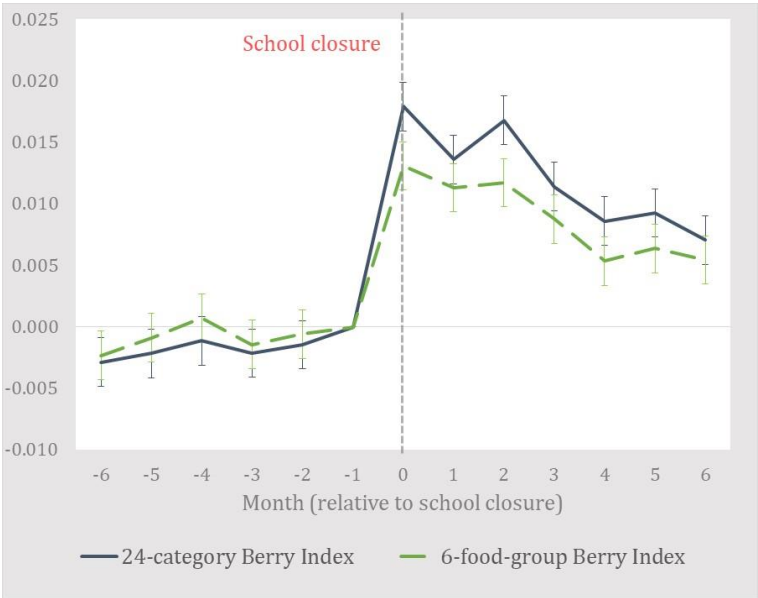


Figure C-8: Event-study plots reflecting year-on-year level changes in household food evenness (using Berry Index) during the early pandemic response environment comparing different grouping

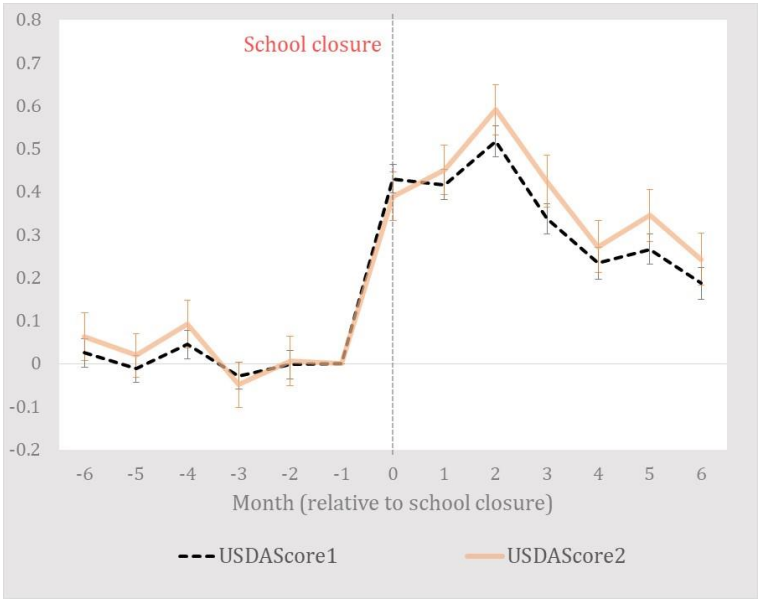


Figure C-9: Event-study plots reflecting year-on-year level changes in household food healthfulness (using USDAScore1 and USDAScore2) during the early pandemic response environment

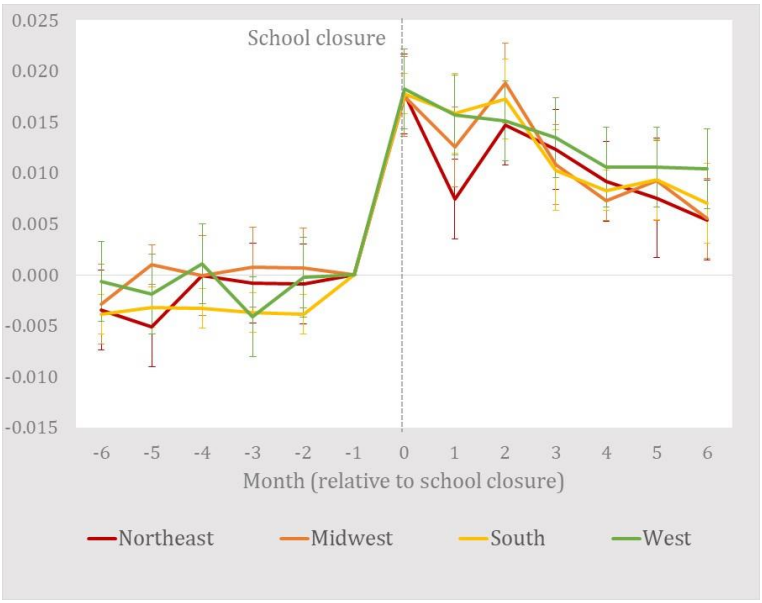


Figure C-10: Event-study plots reflecting year-on-year level changes in household food evenness (using Berry Index) during the early pandemic response environment by census region

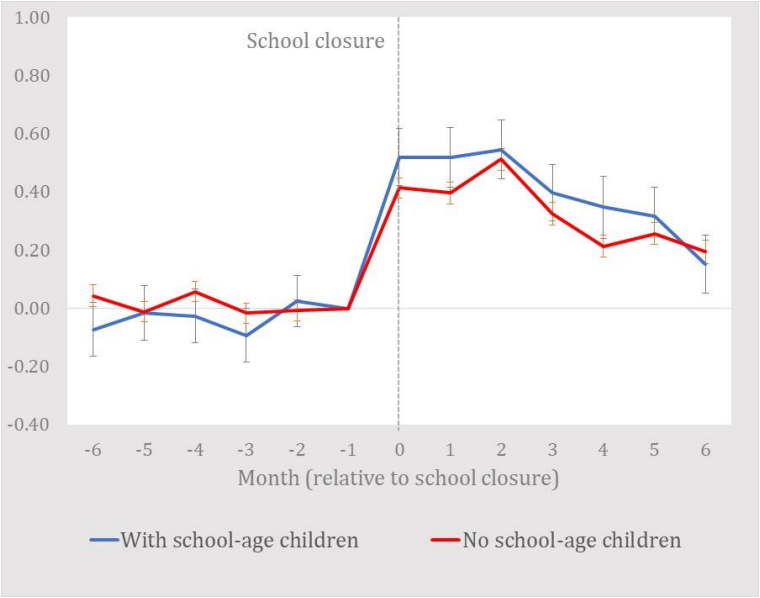


Figure C-11: Event-study plots reflecting year-on-year level changes in household food healthfulness (using USDA Score1) during the early pandemic response environment by presence of school-age children

Figure C-12: Event-study plots reflecting year-on-year level changes in household food healthfulness (using USDAScore1) among households of various income groups across race during the early pandemic response environment

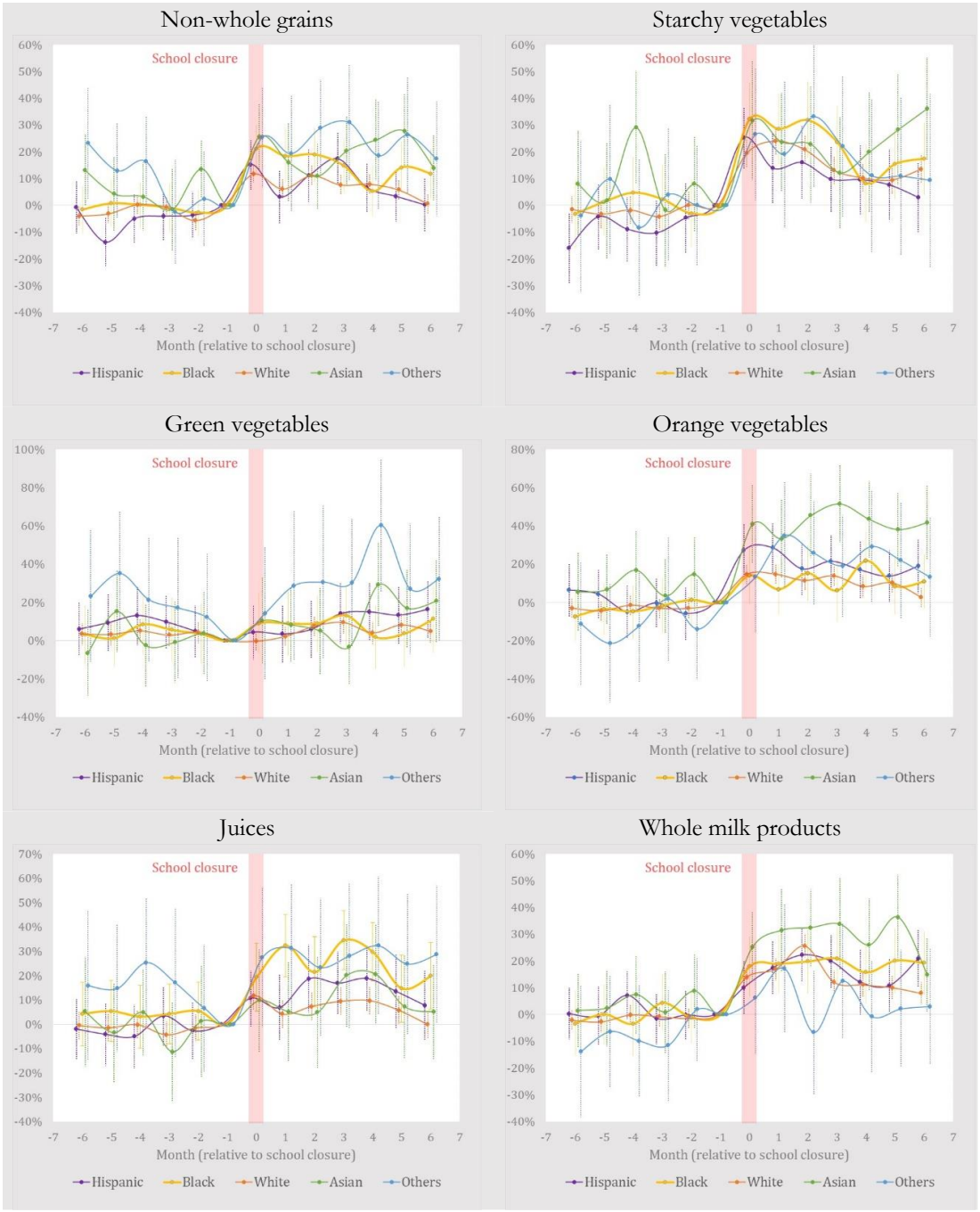


Figure C-13: Coefficient plots reflecting year-on-year percentage changes in household spending during the early pandemic response environment for remaining CNPP categories across race for households with school-age children

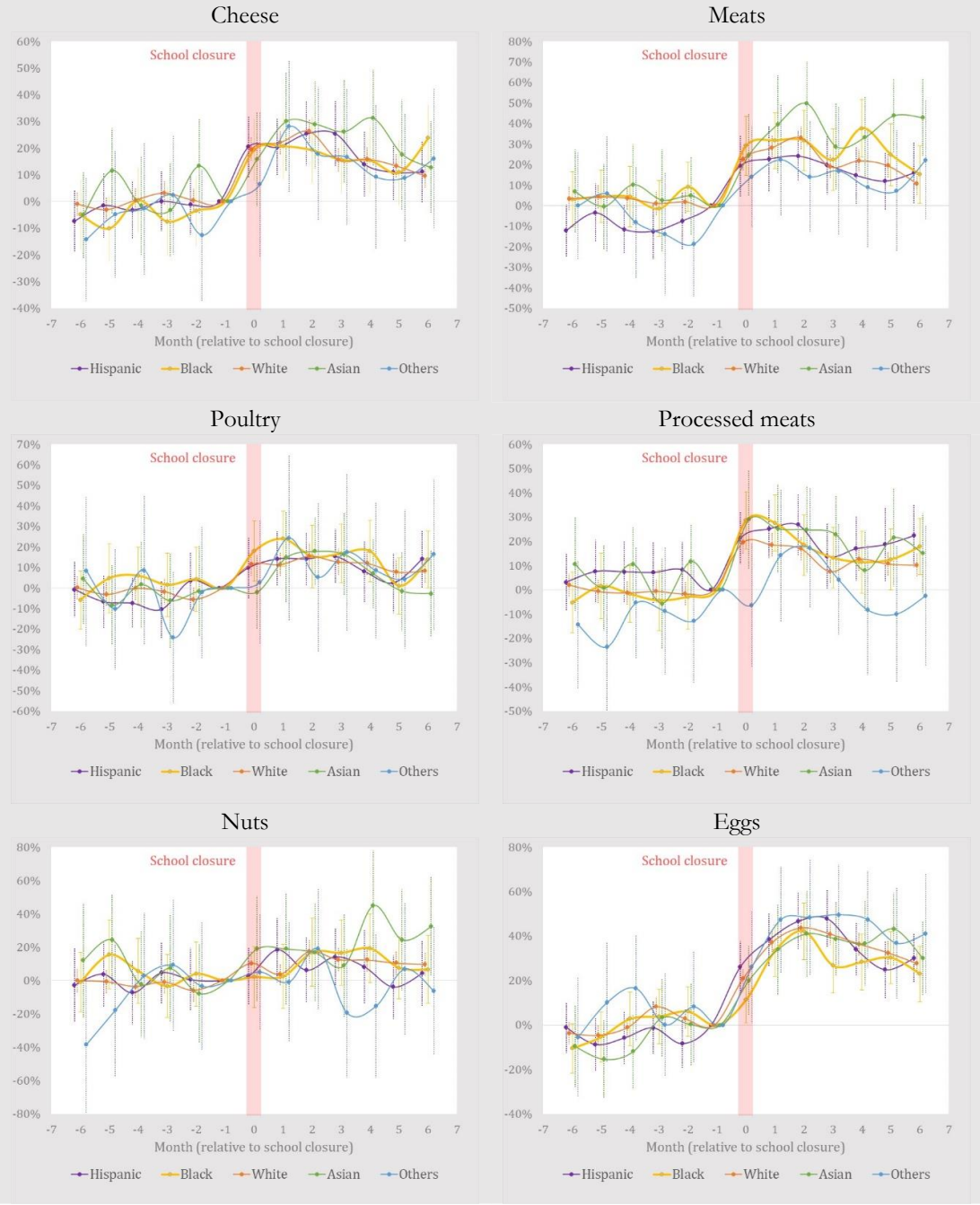


Figure C-14: Coefficient plots reflecting year-on-year percentage changes in household spending during the early pandemic response environment for remaining CNPP categories across race for households with school-age children

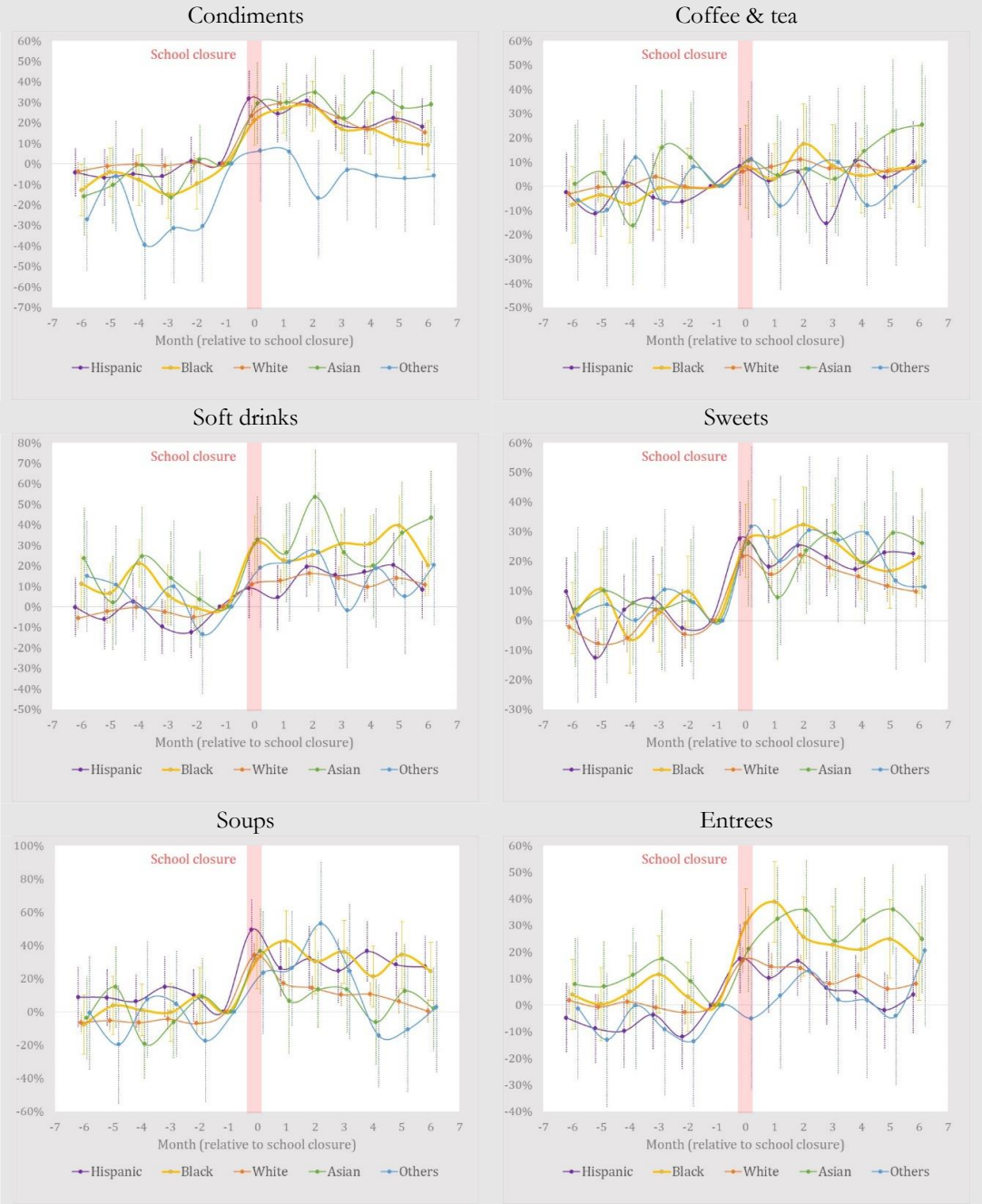


Figure C-15: Coefficient plots reflecting year-on-year percentage changes in household spending during the early pandemic response environment for remaining CNPP categories across race for households with school-age children

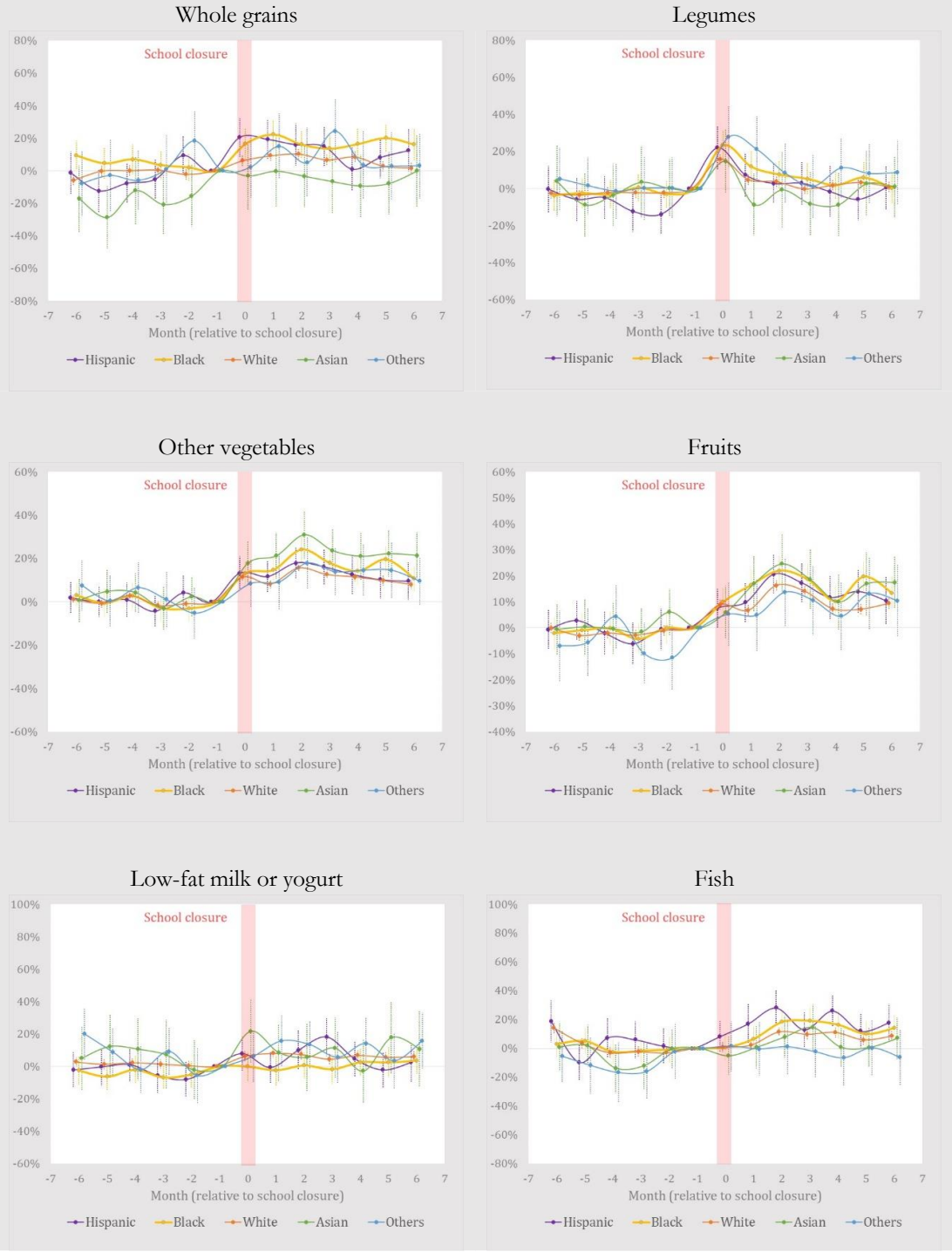


Figure C-16: Coefficient plots reflecting year-on-year percentage changes in household spending during the early pandemic response environment across race for households without school-age children for CNPP categories with higher recommended shares

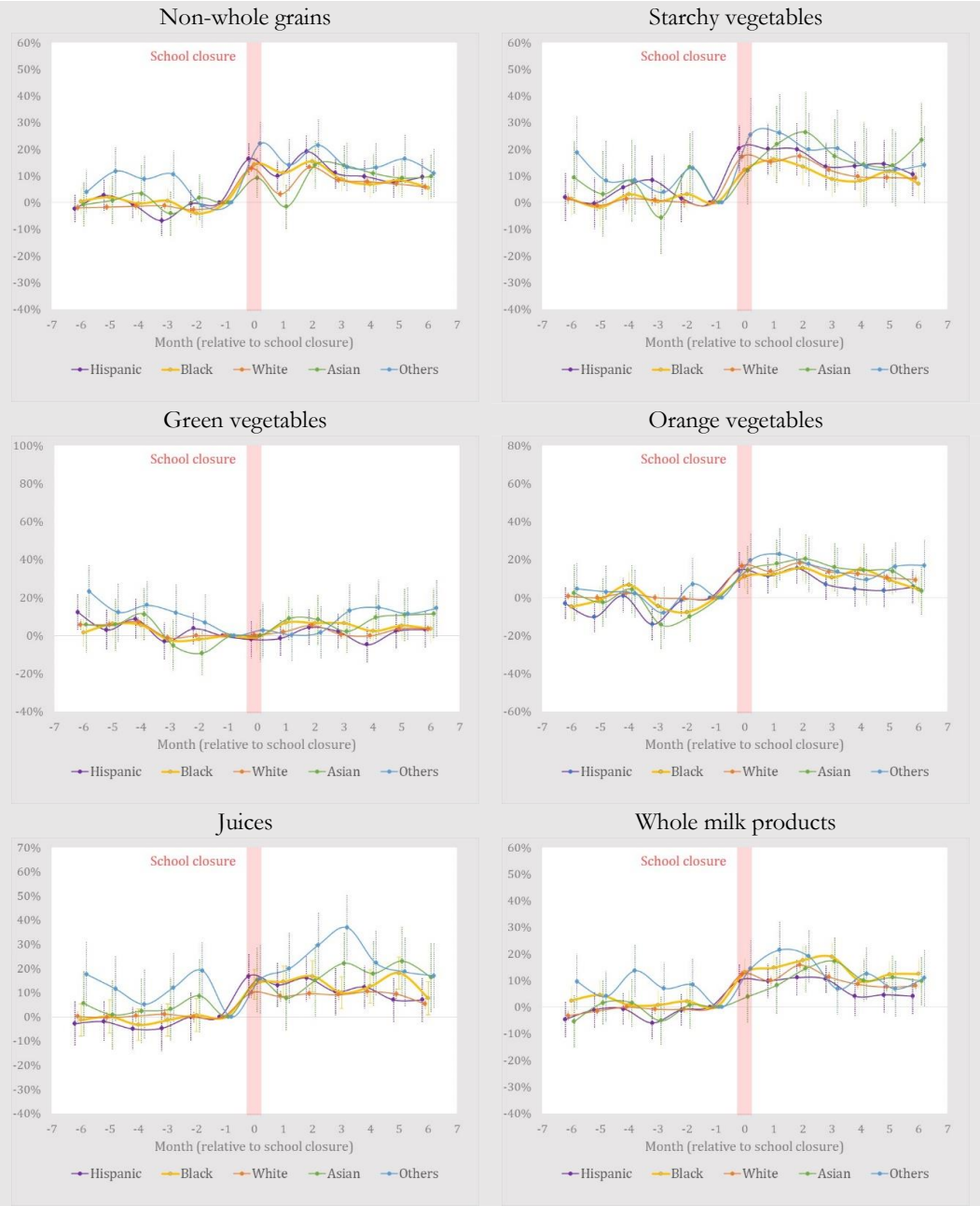


Figure C-17: Coefficient plots reflecting year-on-year percentage changes in household spending during the early pandemic response environment for remaining CNPP categories across race for households without school-age children

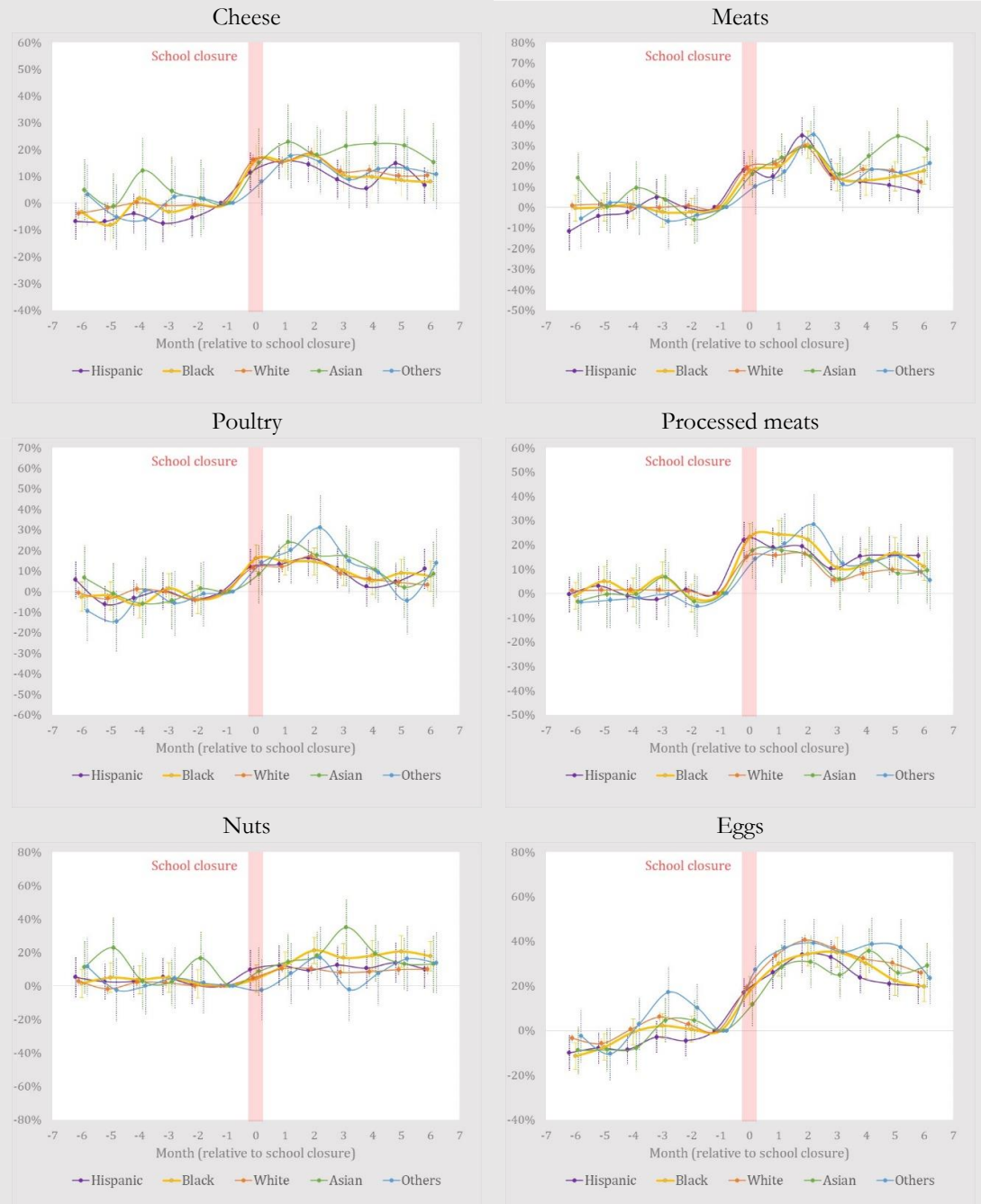


Figure C-18: Coefficient plots reflecting year-on-year percentage changes in household spending during the early pandemic response environment for remaining CNPP categories across race for households without school-age children

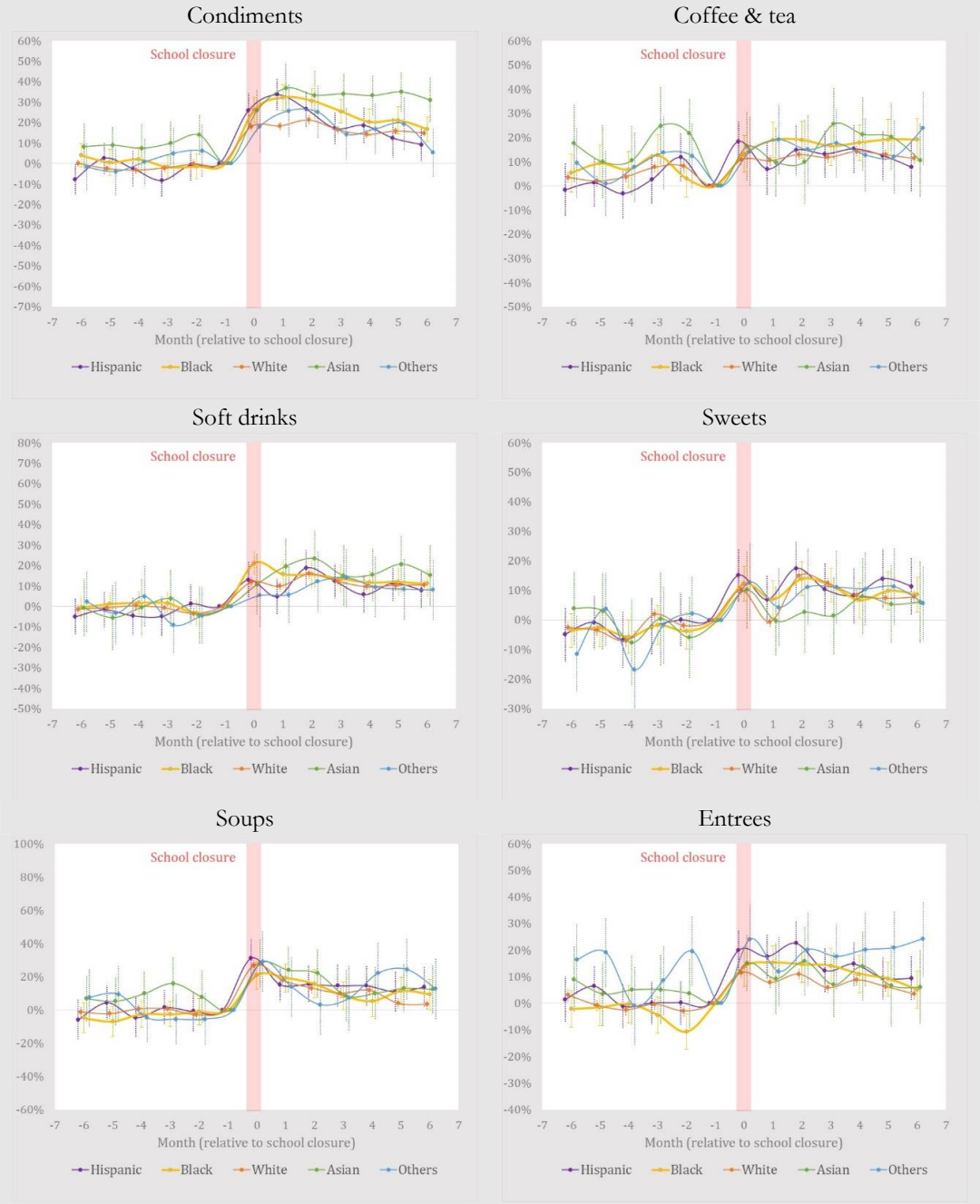


Figure C-19: Coefficient plots reflecting year-on-year percentage changes in household spending during the early pandemic response environment for remaining CNPP categories across race for households without school-age children

Table C-1: Summary statistics of household spending on various retail good categories during the pandemic year and the control year

Independent variable	Aggregated monthly household spending per member (in dollars)							
	Control year				*Pandemic year*			
	Mean	Min	Max	SD	Mean	Min	Max	SD
Major retail categories								
Food grocery	129.2	0.0	2135.4	91.4	140.0	0.0	1903.7	98.2
Non-food grocery	29.9	0.0	1401.2	41.0	32.4	0.0	2325.8	44.7
Healthy & beauty	29.5	0.0	3400.0	45.1	31.2	0.0	3247.8	47.9
Alcohol	26.1	0.0	1031.6	37.8	28.6	0.0	1311.0	41.4
General merchandise	45.8	0.0	5136.0	73.3	41.3	0.0	4159.4	67.8
Food groups of interest								
Breakfast foods	4.9	0.0	347.5	6.5	5.2	0.0	639.6	6.8
Seafood & plant protein	8.8	0.0	500.0	11.4	9.7	0.0	629.9	12.4
All fruits	9.2	0.0	1000.0	11.1	9.8	0.0	503.1	11.7
All vegetables	11.0	0.0	294.1	11.6	12.0	0.0	284.4	12.5
Non-alcoholic beverages								
All non-alcoholic beverages	9.5	0.0	1110.2	11.3	10.1	0.0	1111.9	11.9
Coffee	8.3	0.0	1097.3	10.7	8.7	0.0	1111.9	11.1
Tea	4.1	0.0	259.3	5.6	4.5	0.0	189.1	5.8
Juices	5.1	0.0	329.2	6.3	5.5	0.0	327.0	6.7
Other product categories								
Snacks, cookies, & crackers	10.5	0.0	518.9	10.7	11.3	0.0	640.4	11.5
Deli products	20.0	0.0	1130.3	36.0	19.7	0.0	1787.1	35.2
N	540982				540982			

SD = Standard deviation

Table C-2: Regression results of household spending on various retail good categories during the early pandemic response environment

	Dependent variable: natural log transformation of monthly household dollar spending per member				
Independent variable	(1) Food Grocery	(2) Nonfood Grocery	(3) Health & Beauty	(4) Alcohol	(5) General Merchandise
1.pandemicyear#1.refmonth	-0.0194***	-0.0288***	-0.0127	-0.0239	-0.0232**
	(0.005)	(0.009)	(0.010)	(0.019)	(0.011)
1.pandemicyear#2.refmonth	-0.0193***	-0.0166*	-0.000913	-0.0317*	-0.0393***
	(0.005)	(0.009)	(0.010)	(0.017)	(0.012)
1.pandemicyear#3.refmonth	-0.0125**	-0.0168*	-0.0284***	-0.0225	-0.0245**
	(0.005)	(0.009)	(0.010)	(0.018)	(0.011)
1.pandemicyear#4.refmonth	-0.0172***	-0.00627	-0.0139	-0.0107	0.00466
	(0.005)	(0.009)	(0.010)	(0.016)	(0.011)
1.pandemicyear#5.refmonth	-0.0216***	-0.0130	-0.00303	-0.0268	0.0158
	(0.005)	(0.010)	(0.010)	(0.017)	(0.011)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.164***	0.227***	0.0805***	0.0948***	-0.135***
	(0.005)	(0.009)	(0.010)	(0.017)	(0.011)
1.pandemicyear#8.refmonth	0.0927***	0.103***	-0.0293***	0.132***	-0.389***
	(0.006)	(0.010)	(0.010)	(0.019)	(0.012)
1.pandemicyear#9.refmonth	0.196***	0.128***	0.0152	0.133***	-0.256***
	(0.005)	(0.009)	(0.010)	(0.019)	(0.012)
1.pandemicyear#10.refmonth	0.128***	0.0675***	0.0228**	0.107***	-0.183***
	(0.005)	(0.010)	(0.010)	(0.018)	(0.012)
1.pandemicyear#11.refmonth	0.120***	0.0744***	0.0640***	0.0733***	-0.151***
	(0.005)	(0.009)	(0.010)	(0.019)	(0.011)
1.pandemicyear#12.refmonth	0.114***	0.0643***	0.0670***	0.0638***	-0.151***
	(0.005)	(0.009)	(0.010)	(0.017)	(0.012)
1.pandemicyear#13.refmonth	0.0825***	0.0329***	0.0434***	0.0679***	-0.142***
	(0.005)	(0.009)	(0.010)	(0.020)	(0.011)
1.pandemicyear	0.0154***	0.0302***	0.0401***	0.0448***	0.0104
	(0.004)	(0.007)	(0.007)	(0.013)	(0.008)
1.refmonth	-0.0413***	-0.0421***	-0.0710***	0.00911	0.0811***
	(0.003)	(0.006)	(0.007)	(0.012)	(0.008)
2.refmonth	0.000261	-0.0274***	-0.0691***	0.00999	0.0841***
	(0.004)	(0.006)	(0.007)	(0.013)	(0.009)
3.refmonth	0.0179***	-0.0151**	-0.0477***	-0.0498***	0.168***
	(0.004)	(0.007)	(0.007)	(0.013)	(0.008)
4.refmonth	0.00446	-0.0302***	-0.0330***	-0.0944***	0.172***
	(0.004)	(0.006)	(0.007)	(0.013)	(0.009)
5.refmonth	0.0211***	0.0233***	0.0345***	-0.0290**	-0.0213***
	(0.003)	(0.006)	(0.007)	(0.012)	(0.008)
6.refmonth			(omitted)		
7.refmonth	-0.00000921	-0.00851	0.0137**	0.0223*	0.0513***
	(0.003)	(0.006)	(0.007)	(0.012)	(0.008)
8.refmonth	-0.00424	-0.0380***	-0.0328***	-0.00495	0.113***
	(0.004)	(0.006)	(0.007)	(0.012)	(0.008)
9.refmonth	-0.0495***	-0.0220***	-0.0249***	0.00454	0.179***
	(0.004)	(0.006)	(0.007)	(0.013)	(0.008)
10.refmonth	-0.0524***	-0.0147**	-0.0467***	-0.00687	0.143***
	(0.004)	(0.006)	(0.007)	(0.012)	(0.008)
11.refmonth	-0.0488***	0.00870	-0.0553***	0.0214*	0.109***
	(0.004)	(0.007)	(0.007)	(0.013)	(0.008)
12.refmonth	-0.0704***	0.00108	-0.0685***	0.0236*	0.101***
	(0.004)	(0.007)	(0.007)	(0.013)	(0.008)
13.refmonth	-0.0358***	0.00927	-0.0532***	0.0341***	0.0812***
	(0.004)	(0.006)	(0.007)	(0.013)	(0.008)
_cons	9.224***	7.378***	7.336***	7.175***	7.509***
	(0.005)	(0.008)	(0.007)	(0.013)	(0.009)
N	1066942	961501	918089	293747	861197

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-3: Regression results of household spending on various food categories during the early pandemic response environment

	Dependent variable: natural log transformation of monthly household dollar spending per member				
Independent variable	(1) Total food grocery	(2) Breakfast foods	(3) Fruits	(4) Vegetables	(5) Seafood & plant proteins
1.pandemicyear#1.refmonth	-0.0194***	-0.0103	-0.00396	-0.000245	-0.0287***
	(0.005)	(0.012)	(0.009)	(0.008)	(0.011)
1.pandemicyear#2.refmonth	-0.0193***	0.00180	-0.0222**	-0.00510	-0.0333***
	(0.005)	(0.013)	(0.009)	(0.008)	(0.011)
1.pandemicyear#3.refmonth	-0.0125**	-0.00999	-0.0156*	0.0256***	-0.0411***
	(0.005)	(0.014)	(0.009)	(0.007)	(0.011)
1.pandemicyear#4.refmonth	-0.0172***	-0.0234*	-0.0394***	-0.0141*	-0.0544***
	(0.005)	(0.013)	(0.008)	(0.009)	(0.011)
1.pandemicyear#5.refmonth	-0.0216***	-0.0488***	-0.0113	-0.0143*	-0.0345***
	(0.005)	(0.012)	(0.009)	(0.008)	(0.011)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.164***	0.0615***	0.0924***	0.197***	0.115***
	(0.005)	(0.012)	(0.009)	(0.008)	(0.011)
1.pandemicyear#8.refmonth	0.0927***	0.0274**	0.0878***	0.140***	0.0540***
	(0.006)	(0.012)	(0.009)	(0.008)	(0.011)
1.pandemicyear#9.refmonth	0.196***	0.0541***	0.179***	0.201***	0.154***
	(0.005)	(0.013)	(0.008)	(0.008)	(0.011)
1.pandemicyear#10.refmonth	0.128***	0.0686***	0.152***	0.143***	0.109***
	(0.005)	(0.013)	(0.009)	(0.008)	(0.011)
1.pandemicyear#11.refmonth	0.120***	0.0222*	0.0944***	0.131***	0.0984***
	(0.005)	(0.013)	(0.009)	(0.008)	(0.010)
1.pandemicyear#12.refmonth	0.114***	0.0457***	0.105***	0.128***	0.0774***
	(0.005)	(0.013)	(0.009)	(0.008)	(0.011)
1.pandemicyear#13.refmonth	0.0825***	0.0761***	0.101***	0.101***	0.0722***
	(0.005)	(0.013)	(0.010)	(0.008)	(0.011)
1.pandemicyear	0.0154***	0.0419***	0.00191	0.00734	0.0517***
	(0.004)	(0.009)	(0.007)	(0.006)	(0.008)
1.refmonth	-0.0413***	-0.0218**	-0.0511***	-0.0877***	-0.0856***
	(0.003)	(0.009)	(0.007)	(0.006)	(0.008)
2.refmonth	0.000261	-0.0304***	-0.0689***	-0.0382***	-0.0518***
	(0.004)	(0.010)	(0.007)	(0.006)	(0.008)
3.refmonth	0.0179***	-0.0605***	-0.0598***	-0.0502***	0.0167**
	(0.004)	(0.009)	(0.006)	(0.005)	(0.008)
4.refmonth	0.00446	-0.0766***	-0.117***	-0.0441***	0.0898***
	(0.004)	(0.009)	(0.006)	(0.006)	(0.008)
5.refmonth	0.0211***	0.0383***	-0.0300***	0.0407***	-0.0145*
	(0.003)	(0.009)	(0.006)	(0.006)	(0.007)
6.refmonth			(omitted)		
7.refmonth	-0.00000921	0.00913	-0.00360	-0.00819	0.0648***
	(0.003)	(0.009)	(0.006)	(0.005)	(0.007)
8.refmonth	-0.00424	0.00140	0.0128*	0.00452	-0.00958
	(0.004)	(0.009)	(0.007)	(0.006)	(0.007)
9.refmonth	-0.0495***	0.00776	0.0472***	-0.0347***	-0.0469***
	(0.004)	(0.010)	(0.007)	(0.005)	(0.008)
10.refmonth	-0.0524***	-0.0141	0.105***	-0.0441***	-0.0538***
	(0.004)	(0.009)	(0.007)	(0.006)	(0.008)
11.refmonth	-0.0488***	0.00202	0.164***	-0.0537***	-0.0499***
	(0.004)	(0.010)	(0.007)	(0.006)	(0.008)
12.refmonth	-0.0704***	0.0184**	0.0919***	-0.0994***	-0.0487***
	(0.004)	(0.009)	(0.007)	(0.006)	(0.008)
13.refmonth	-0.0358***	-0.00984	0.0166**	-0.0732***	-0.0396***
	(0.004)	(0.010)	(0.008)	(0.006)	(0.008)
_cons	9.224***	5.732***	6.260***	6.562***	6.203***
	(0.005)	(0.009)	(0.008)	(0.008)	(0.009)
N	1066942	420199	870152	951131	796047

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-4: Regression results of household spending on non-alcoholic beverages during the early pandemic response environment

	Dependent variable: natural log transformation of monthly household dollar spending per member			
Independent variable	(1) All non-alcoholic beverages	(2) Tea	(3) Coffee	(4) Juices
1.pandemicyear#1.refmonth	0.0145	0.0225*	0.0152	0.00387
	(0.009)	(0.013)	(0.015)	(0.010)
1.pandemicyear#2.refmonth	-0.000298	0.00274	0.00525	-0.00233
	(0.010)	(0.013)	(0.015)	(0.010)
1.pandemicyear#3.refmonth	0.0105	0.0469***	-0.0103	-0.00208
	(0.009)	(0.013)	(0.015)	(0.010)
1.pandemicyear#4.refmonth	0.0189**	0.108***	0.0258*	-0.00613
	(0.010)	(0.014)	(0.014)	(0.010)
1.pandemicyear#5.refmonth	0.0175*	0.0931***	0.00733	0.000810
	(0.009)	(0.014)	(0.015)	(0.010)
1.pandemicyear#6.refmonth			(omitted)	
1.pandemicyear#7.refmonth	0.135***	0.0867***	0.0812***	0.119***
	(0.009)	(0.013)	(0.014)	(0.010)
1.pandemicyear#8.refmonth	0.0876***	0.0654***	0.0922***	0.0987***
	(0.009)	(0.013)	(0.015)	(0.011)
1.pandemicyear#9.refmonth	0.130***	0.110***	0.102***	0.117***
	(0.010)	(0.014)	(0.015)	(0.011)
1.pandemicyear#10.refmonth	0.118***	0.109***	0.0709***	0.116***
	(0.010)	(0.013)	(0.014)	(0.011)
1.pandemicyear#11.refmonth	0.139***	0.120***	0.112***	0.121***
	(0.010)	(0.014)	(0.014)	(0.011)
1.pandemicyear#12.refmonth	0.130***	0.130***	0.0912***	0.110***
	(0.009)	(0.013)	(0.015)	(0.011)
1.pandemicyear#13.refmonth	0.0939***	0.0975***	0.0963***	0.0647***
	(0.010)	(0.013)	(0.015)	(0.011)
1.pandemicyear	-0.00612	-0.00883	0.0371***	0.0136*
	(0.007)	(0.010)	(0.010)	(0.008)
1.refmonth	-0.0387***	-0.0474***	-0.0617***	-0.0292***
	(0.007)	(0.009)	(0.010)	(0.007)
2.refmonth	-0.0280***	-0.0209**	-0.0441***	-0.0340***
	(0.007)	(0.009)	(0.010)	(0.007)
3.refmonth	-0.0283***	-0.0420***	-0.0357***	-0.0608***
	(0.006)	(0.010)	(0.011)	(0.007)
4.refmonth	-0.0398***	-0.104***	-0.0478***	-0.0463***
	(0.006)	(0.012)	(0.010)	(0.007)
5.refmonth	-0.0254***	-0.108***	-0.00559	-0.00338
	(0.007)	(0.011)	(0.010)	(0.007)
6.refmonth			(omitted)	
7.refmonth	-0.0134**	-0.0229**	-0.0166	-0.00150
	(0.006)	(0.009)	(0.010)	(0.007)
8.refmonth	-0.0176***	-0.0252***	-0.0314***	-0.00294
	(0.006)	(0.009)	(0.010)	(0.007)
9.refmonth	-0.0239***	-0.0329***	-0.00315	0.00301
	(0.007)	(0.009)	(0.011)	(0.007)
10.refmonth	-0.0263***	-0.0397***	-0.00319	-0.000525
	(0.007)	(0.009)	(0.010)	(0.007)
11.refmonth	-0.0359***	-0.0465***	-0.0297***	0.00422
	(0.007)	(0.009)	(0.010)	(0.008)
12.refmonth	-0.0457***	-0.0679***	-0.0320***	0.00439
	(0.007)	(0.009)	(0.011)	(0.008)
13.refmonth	-0.0225***	-0.0302***	-0.0138	0.0155**
	(0.007)	(0.010)	(0.011)	(0.007)
_cons	6.382***	6.272***	5.545***	5.767***
	(0.008)	(0.010)	(0.010)	(0.008)
N	820790	421971	305391	591574

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-5: Regression results of household spending on other product categories during the early pandemic response environment

	Dependent variable: natural log transformation of monthly household dollar spending per member	
Independent variable	(1) Snacks, cookies, & crackers	(2) Deli products
1.pandemicyear#1.refmonth	-0.0384***	0.00677
	(0.008)	(0.010)
1.pandemicyear#2.refmonth	-0.0100	-0.00524
	(0.008)	(0.010)
1.pandemicyear#3.refmonth	-0.0231***	0.0343***
	(0.008)	(0.010)
1.pandemicyear#4.refmonth	-0.00447	-0.00861
	(0.008)	(0.010)
1.pandemicyear#5.refmonth	-0.0205**	-0.0230**
	(0.008)	(0.009)
1.pandemicyear#6.refmonth	(omitted)	
1.pandemicyear#7.refmonth	0.135***	-0.0277***
	(0.007)	(0.010)
1.pandemicyear#8.refmonth	0.0801***	-0.0484***
	(0.008)	(0.010)
1.pandemicyear#9.refmonth	0.124***	0.0417***
	(0.008)	(0.010)
1.pandemicyear#10.refmonth	0.0850***	0.0223**
	(0.008)	(0.010)
1.pandemicyear#11.refmonth	0.0894***	0.0244**
	(0.008)	(0.010)
1.pandemicyear#12.refmonth	0.0795***	0.00913
	(0.008)	(0.011)
1.pandemicyear#13.refmonth	0.0444***	0.0225**
	(0.008)	(0.010)
1.pandemicyear	0.0382***	-0.00187
	(0.006)	(0.007)
1.refmonth	-0.0103*	-0.0232***
	(0.006)	(0.007)
2.refmonth	-0.0235***	-0.0179**
	(0.006)	(0.007)
3.refmonth	-0.0187***	-0.0827***
	(0.006)	(0.007)
4.refmonth	-0.00778	-0.0532***
	(0.006)	(0.007)
5.refmonth	0.0318***	-0.0140**
	(0.006)	(0.007)
6.refmonth	(omitted)	
7.refmonth	0.0127**	0.00333
	(0.005)	(0.007)
8.refmonth	-0.0103*	-0.0213***
	(0.006)	(0.007)
9.refmonth	-0.00321	-0.0115*
	(0.006)	(0.006)
10.refmonth	-0.00430	-0.00785
	(0.006)	(0.007)
11.refmonth	0.00112	-0.00757
	(0.006)	(0.007)
12.refmonth	-0.0147***	-0.00364
	(0.006)	(0.007)
13.refmonth	0.0364***	-0.00562
	(0.006)	(0.007)
_cons	6.534***	6.737***
	(0.006)	(0.011)
N	941720	778110

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-6: Recommended expenditure shares by CNPP food category

Broad category	Category code (in this study)	CNPP food category	Average recommended expenditure share in household sample (%)	Recommended expenditure share for a representative household according to USDA Food Plan (%)*
Grains	1	Whole grains	10.11	10.09
	2	Non-whole grains	4.44	6.1
Vegetables	3	Potatoes	2.07	1.77
	4	Green vegetables	8.48	5.59
	5	Orange vegetables	2.13	2.61
	6	Legumes	8.04	8.32
	7	Other vegetables	8.98	8.66
Fruits	8	Whole fruits	15.94	16.49
	9	Juices	1.24	1.86
Milk products	10	Whole milk yogurt	1.15	0.86
	11	Non-whole milk yogurt	10.38	8.77
	12	Cheese	0.39	0.6
Meat and beans	13	Meats	6.18	5.31
	14	Poultry	3.81	2.69
	15	Fish	8.55	11.92
	16	Processed meats	0.51	0.91
	17	Nuts	3.64	3.16
	18	Eggs	0.15	0.12
Other foods	19	Condiments	1.48	1.79
	20	Coffee tea	0.05	0.02
	21	Soft drinks	0.86	1.33
	22	Sweets	0.31	0.41
	23	Soups	1.05	0.51
	24	Entrees	0.05	0.18

*The representative household consists of one male age 19-50, one female age 19-50, one child age 9-11, and one child age 6-8, according to the Liberal Food Plan calculated by Volpe & Okrent (2012) based on Carlson et al. (2007).

Table C-7: Year-on-year change in relative month prices by CNPP food category averaged across 6-month period pre and post school closure in the household sample (%)

Broad category	Category code (in this study)	CNPP food category	OZ-based products			COUNT-based products		
			Pre school closure (m<0)	Post school closure (m>0)	*Change*	Pre school closure (m<0)	Post school closure (m>0)	*Change*
Grains	1	Whole grains	-1.6	-4.2	*-2.5*			
	2	Non-whole grains	2.5	2.7	*0.2*	5.3	-14.7	*-20.0*
Vegetables	3	Starchy vegetables	2.0	5.9	*3.8*			
	4	Green vegetables				4.3	-2.0	*-6.3*
	5	Orange vegetables	1.7	3.8	*2.2*			
	6	Legumes	2.6	7.6	*5.1*	-4.5	-10.9	*-6.4*
	7	Other vegetables	4.3	4.4	*0.1*	-2.5	5.1	*7.6*
Fruits	8	Whole fruits	0.2	3.2	*2.9*	-1.0	-0.9	*0.0*
	9	Juices	1.0	4.9	*3.8*			
Milk products	10	Whole milk/yogurt	4.2	3.9	*-0.3*			
	11	Non-whole milk/yogurt	-0.3	-2.0	*-1.6*			
	12	Cheese	2.5	5.1	*2.6*			
Meat and beans	13	Meats				2.8	13.3	*10.6*
	14	Poultry				0.8	8.2	*7.4*
	15	Fish	1.8	6.1	*4.3*	-8.4	-9.8	*-1.4*
	16	Processed meats	2.4	7.3	*4.9*			
	17	Nuts	-0.8	2.4	*3.2*			
	18	Eggs				-6.9	21.9	*28.8*
Other foods	19	Condiments	3.2	9.2	*6.0*			
	20	Coffee tea	-2.9	1.2	*4.1*	2.1	-5.5	*-7.6*
	21	Soft drinks	3.9	8.9	*5.0*			
	22	Sweets	1.5	1.7	*0.2*			
	23	Soups	1.4	5.7	*4.3*			
	24	Entrees	1.5	3.7	*2.2*			

Note: Missing cells indicate that products priced based on the respective unit quantity constitute a minority of the volume in the sample

Table C-8: Household sample by income group and race

Race	*Household income group*								
	Low		Low-Medium		Medium-High		High		
	#	% of row	#	% of row	#	% of row	#	% of row	**Row total (100%)**
White	5,638	18%	9,916	31%	9,653	30%	6,869	21%	**32,076**
Black	785	18%	1340	30%	1354	31%	924	21%	**4,403**
Hispanic	344	13%	742	28%	852	33%	682	26%	**2,620**
Asians	123	8%	288	20%	419	29%	633	43%	**1,463**
Other	217	21%	301	30%	283	28%	216	21%	**1,017**
Column total	***7,107***		***12,587***		***12,561***		***9,324***		**41,579**

Table C-9: Household sample average monthly food grocery expenditures per household member by income group and race

Race	*Household income group*			
	Low	Low-Medium	Medium-High	High
White	135.1	134.4	129.8	124.5
Black	127.1	122.0	118.7	108.9
Hispanic	121.4	114.5	109.7	101.5
Asians	114.3	113.2	117.6	105.1
Other	142.7	134.1	123.9	121.6

Table C-10: Mapping of relative month labels and variable values

Relative month	Variable *refmonth* value
-6	1
-5	2
-4	3
-3	4
-2	5
-1	6
0	7
1	8
2	9
3	10
4	11
5	12
6	13

Table C-11: Regression results of household food outcomes during the early pandemic response environment using pooled household sample

	Dependent variable: levels at monthly aggregation of household purchases					
	(1)	(2)	(3)	(4)	(5)	(6)
Independent variable	Berry Index (using 24 CNPP categories)	USDA Score1	Brand HHI	Brand count	UPC count	Store HHI
1.pandemicyear#1.refmonth	-0.00286***	0.0685**	43.58***	-0.699***	-0.990***	1.447
	(0.001)	(0.028)	(8.239)	(0.105)	(0.177)	(14.685)
1.pandemicyear#2.refmonth	-0.00217***	0.0197	26.88***	-0.755***	-1.032***	5.913
	(0.001)	(0.026)	(7.952)	(0.103)	(0.175)	(14.923)
1.pandemicyear#3.refmonth	-0.00114	0.0919***	11.84	-0.604***	-0.712***	-12.36
	(0.001)	(0.028)	(8.615)	(0.105)	(0.178)	(14.890)
1.pandemicyear#4.refmonth	-0.00215**	-0.0472*	10.41	-0.161	-0.342*	10.78
	(0.001)	(0.027)	(8.151)	(0.103)	(0.175)	(14.642)
1.pandemicyear#5.refmonth	-0.00146*	0.00487	26.08***	-0.478***	-0.892***	5.514
	(0.001)	(0.029)	(8.519)	(0.108)	(0.183)	(14.382)
1.pandemicyear#6.refmonth				(omitted)		
1.pandemicyear#7.refmonth	0.0179***	0.390***	-103.3***	5.147***	10.22***	-153.1***
	(0.001)	(0.029)	(8.564)	(0.115)	(0.198)	(15.940)
1.pandemicyear#8.refmonth	0.0136***	0.452***	14.75	2.335***	5.348***	239.1***
	(0.001)	(0.029)	(10.037)	(0.126)	(0.216)	(17.634)
1.pandemicyear#9.refmonth	0.0168***	0.594***	-72.10***	3.957***	7.789***	0.445
	(0.001)	(0.030)	(9.158)	(0.109)	(0.187)	(15.524)
1.pandemicyear#10.refmonth	0.0114***	0.427***	-59.52***	2.279***	4.230***	64.77***
	(0.001)	(0.031)	(9.874)	(0.112)	(0.192)	(15.901)
1.pandemicyear#11.refmonth	0.00860***	0.275***	-52.17***	2.152***	3.838***	45.60***
	(0.001)	(0.031)	(8.521)	(0.114)	(0.191)	(15.928)
1.pandemicyear#12.refmonth	0.00927***	0.347***	-48.54***	1.965***	3.400***	44.37***
	(0.001)	(0.031)	(9.347)	(0.110)	(0.190)	(15.431)
1.pandemicyear#13.refmonth	0.00704***	0.248***	-14.83	1.278***	2.268***	89.86***
	(0.001)	(0.031)	(9.201)	(0.119)	(0.207)	(15.877)
1.pandemicyear	-0.00221***	-0.136***	32.03***	-0.787***	-1.110***	58.41***
	(0.001)	(0.021)	(5.912)	(0.080)	(0.138)	(10.759)
1.refmonth	-0.00194***	-0.234***	-28.21***	-0.328***	-0.775***	10.49
	(0.001)	(0.022)	(5.821)	(0.079)	(0.141)	(11.253)
2.refmonth	0.00194***	-0.174***	-47.61***	0.749***	0.915***	-42.90***
	(0.001)	(0.020)	(6.007)	(0.086)	(0.147)	(11.394)
3.refmonth	0.00629***	-0.122***	-42.91***	1.763***	2.612***	-85.20***
	(0.001)	(0.020)	(6.053)	(0.085)	(0.146)	(10.647)
4.refmonth	0.00401***	-0.154***	-14.02**	1.223***	1.317***	-82.90***
	(0.001)	(0.020)	(6.283)	(0.082)	(0.145)	(11.007)
5.refmonth	0.00461***	0.0729***	-33.88***	0.653***	1.710***	12.10
	(0.001)	(0.021)	(5.938)	(0.077)	(0.134)	(9.883)
6.refmonth				(omitted)		
7.refmonth	-0.00197***	-0.0184	0.377	-0.313***	-0.546***	11.03
	(0.001)	(0.020)	(6.018)	(0.073)	(0.127)	(10.841)
8.refmonth	-0.00192***	-0.0164	-12.48*	0.108	-0.289**	-27.26**
	(0.001)	(0.021)	(6.405)	(0.079)	(0.133)	(10.836)
9.refmonth	-0.00734***	-0.0998***	43.16***	-1.540***	-2.680***	95.51***
	(0.001)	(0.022)	(6.127)	(0.076)	(0.135)	(10.202)
10.refmonth	-0.00814***	-0.0281	42.47***	-1.716***	-2.825***	78.30***
	(0.001)	(0.022)	(6.669)	(0.080)	(0.139)	(11.224)
11.refmonth	-0.00670***	0.0729***	35.59***	-1.778***	-2.832***	87.49***
	(0.001)	(0.023)	(6.069)	(0.088)	(0.155)	(11.130)
12.refmonth	-0.0102***	-0.180***	58.50***	-2.366***	-3.648***	118.3***
	(0.001)	(0.024)	(6.649)	(0.091)	(0.160)	(11.175)
13.refmonth	-0.00814***	-0.250***	24.20***	-1.391***	-2.292***	79.54***
	(0.001)	(0.023)	(5.927)	(0.087)	(0.156)	(11.204)
_cons	0.821***	8.676***	1358.6***	33.37***	55.36***	5729.6***
	(0.001)	(0.026)	(8.189)	(0.167)	(0.334)	(19.532)
N	1081054	1066938	1066960	1066960	1066960	1066960

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-12: Regression results of evenness of spending (using Berry Index) of subgroups within broad food groups during the early pandemic response environment using pooled household sample

	Dependent variable: within-group Berry Index across its subgroups					
Independent variable	(1) Grains (2 subgroups)	(2) Vegetables (5 subgroups)	(3) Fruits (2 subgroups)	(4) Milk products (3 subgroups)	(5) Meats & beans (6 subgroups)	(6) Other foods (6 subgroups)
1.pandemicyear#1.refmonth	-0.000643	-0.00500**	0.000100	-0.00163	-0.00368	-0.00174
	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
1.pandemicyear#2.refmonth	-0.000488	-0.00134	0.00148	-0.000000480	-0.00255	-0.00245
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
1.pandemicyear#3.refmonth	-0.000634	-0.00154	-0.000775	0.000198	-0.000389	-0.00151
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
1.pandemicyear#4.refmonth	0.00289*	0.00245	0.00170	0.000655	0.00123	-0.00126
	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)
1.pandemicyear#5.refmonth	0.000641	-0.0000639	0.000865	-0.000522	-0.000528	-0.00355**
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
1.pandemicyear#6.refmonth			(omitted)			
1.pandemicyear#7.refmonth	0.00887***	0.0295***	0.00760***	0.0181***	0.0240***	0.0262***
	(0.001)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
1.pandemicyear#8.refmonth	0.0285***	0.0353***	0.0198***	0.0290***	0.0293***	0.0211***
	(0.002)	(0.003)	(0.003)	(0.002)	(0.003)	(0.002)
1.pandemicyear#9.refmonth	0.00914***	0.0248***	0.00440	0.0228***	0.0289***	0.0240***
	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)
1.pandemicyear#10.refmonth	0.00662***	0.0111***	0.00200	0.0128***	0.0172***	0.0167***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
1.pandemicyear#11.refmonth	0.00228	0.0121***	0.00414	0.0126***	0.00949***	0.0137***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
1.pandemicyear#12.refmonth	0.00425***	0.0109***	0.00730***	0.00940***	0.0130***	0.0158***
	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)	(0.002)
1.pandemicyear#13.refmonth	0.00682***	0.0110***	0.00458	0.00902***	0.0159***	0.00738***
	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)	(0.002)
1.pandemicyear	-0.000254	-0.00268	0.000271	-0.00192	-0.00395**	-0.00284**
	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)
1.refmonth	-0.00132	-0.00671***	0.00345*	-0.00286*	-0.00414**	-0.00414***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
2.refmonth	-0.00155	0.00482***	0.00183	0.00532***	-0.00295*	0.00452***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
3.refmonth	-0.00176	0.0209***	0.00165	0.0241***	0.00885***	0.0126***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
4.refmonth	0.00334***	0.0120***	0.0149***	0.0236***	0.00491***	0.00449***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
5.refmonth	-0.000883	0.00511***	0.00296	0.00474***	0.00280*	0.00586***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)
6.refmonth			(omitted)			
7.refmonth	-0.00371***	-0.00775***	-0.00392*	-0.00452***	-0.00236	-0.00595***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
8.refmonth	-0.00490***	-0.00948***	-0.00297	-0.00281*	-0.00805***	-0.00935***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.002)	(0.001)
9.refmonth	-0.00165	-0.0165***	-0.00382*	-0.00765***	-0.0141***	-0.0171***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
10.refmonth	-0.00266**	-0.0205***	-0.00557***	-0.00791***	-0.0188***	-0.0198***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
11.refmonth	0.0000195	-0.0246***	-0.00590***	-0.00917***	-0.0128***	-0.0196***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
12.refmonth	-0.000963	-0.0255***	-0.00503**	-0.00882***	-0.0158***	-0.0223***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
13.refmonth	-0.00431***	-0.0187***	-0.000913	-0.00374**	-0.0163***	-0.0124***
	(0.001)	(0.002)	(0.002)	(0.002)	(0.002)	(0.001)
_cons	0.0693***	0.514***	0.297***	0.405***	0.529***	0.612***
	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)	(0.001)
N	1081054	1081054	1081054	1081054	1081054	1081054

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.

Table C-13: Regression results of household food evenness during the early pandemic response environment using pooled household sample

	Dependent variable: levels at monthly aggregation of household purchases	
Independent variable	(1) 24-category Berry Index	(2) 6-food-group Berry Index
1.pandemicyear#1.refmonth	-0.00286***	-0.00232***
	(0.001)	(0.001)
1.pandemicyear#2.refmonth	-0.00217***	-0.000890
	(0.001)	(0.001)
1.pandemicyear#3.refmonth	-0.00114	0.000694
	(0.001)	(0.001)
1.pandemicyear#4.refmonth	-0.00215**	-0.00143
	(0.001)	(0.001)
1.pandemicyear#5.refmonth	-0.00146*	-0.000594
	(0.001)	(0.001)
1.pandemicyear#6.refmonth	(omitted)	
1.pandemicyear#7.refmonth	0.0179***	0.0131***
	(0.001)	(0.001)
1.pandemicyear#8.refmonth	0.0136***	0.0113***
	(0.001)	(0.001)
1.pandemicyear#9.refmonth	0.0168***	0.0117***
	(0.001)	(0.001)
1.pandemicyear#10.refmonth	0.0114***	0.00876***
	(0.001)	(0.001)
1.pandemicyear#11.refmonth	0.00860***	0.00534***
	(0.001)	(0.001)
1.pandemicyear#12.refmonth	0.00927***	0.00637***
	(0.001)	(0.001)
1.pandemicyear#13.refmonth	0.00704***	0.00545***
	(0.001)	(0.001)
1.pandemicyear	-0.00221***	-0.00233***
	(0.001)	(0.001)
1.refmonth	-0.00194***	-0.000424
	(0.001)	(0.001)
2.refmonth	0.00194***	-0.00199***
	(0.001)	(0.001)
3.refmonth	0.00629***	0.00267***
	(0.001)	(0.001)
4.refmonth	0.00401***	-0.00153**
	(0.001)	(0.001)
5.refmonth	0.00461***	0.00353***
	(0.001)	(0.001)
6.refmonth	(omitted)	
7.refmonth	-0.00197***	-0.000591
	(0.001)	(0.001)
8.refmonth	-0.00192***	-0.000341
	(0.001)	(0.001)
9.refmonth	-0.00734***	-0.00197***
	(0.001)	(0.001)
10.refmonth	-0.00814***	-0.00113*
	(0.001)	(0.001)
11.refmonth	-0.00670***	0.000996
	(0.001)	(0.001)
12.refmonth	-0.0102***	-0.00217***
	(0.001)	(0.001)
13.refmonth	-0.00814***	-0.00294***
	(0.001)	(0.001)
_cons	0.821***	0.723***
	(0.001)	(0.001)
N	1081054	1081054

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-14: Regression results of household food healthfulness during the early pandemic response environment using pooled household sample

	Dependent variable: levels at monthly aggregation of household purchases	
Independent variable	(1) USDA Score1	(2) USDA Score2
1.pandemicyear#1.refmonth	0.0248	0.0623**
	(0.017)	(0.028)
1.pandemicyear#2.refmonth	-0.0123	0.0190
	(0.016)	(0.026)
1.pandemicyear#3.refmonth	0.0445***	0.0919***
	(0.017)	(0.028)
1.pandemicyear#4.refmonth	-0.0286*	-0.0490*
	(0.016)	(0.027)
1.pandemicyear#5.refmonth	-0.00235	0.00570
	(0.017)	(0.029)
1.pandemicyear#6.refmonth	(omitted)	
1.pandemicyear#7.refmonth	0.430***	0.389***
	(0.017)	(0.029)
1.pandemicyear#8.refmonth	0.416***	0.451***
	(0.018)	(0.029)
1.pandemicyear#9.refmonth	0.517***	0.591***
	(0.018)	(0.030)
1.pandemicyear#10.refmonth	0.337***	0.424***
	(0.018)	(0.031)
1.pandemicyear#11.refmonth	0.234***	0.272***
	(0.019)	(0.031)
1.pandemicyear#12.refmonth	0.266***	0.345***
	(0.018)	(0.031)
1.pandemicyear#13.refmonth	0.187***	0.243***
	(0.019)	(0.031)
1.pandemicyear	-0.0951***	-0.135***
	(0.013)	(0.021)
1.refmonth	-0.172***	-0.229***
	(0.014)	(0.022)
2.refmonth	-0.0951***	-0.172***
	(0.013)	(0.021)
3.refmonth	0.0142	-0.120***
	(0.012)	(0.020)
4.refmonth	-0.0596***	-0.154***
	(0.013)	(0.020)
5.refmonth	0.0807***	0.0738***
	(0.013)	(0.021)
6.refmonth	(omitted)	
7.refmonth	-0.0179	-0.0169
	(0.012)	(0.020)
8.refmonth	-0.0575***	-0.0155
	(0.012)	(0.021)
9.refmonth	-0.132***	-0.0990***
	(0.013)	(0.022)
10.refmonth	-0.0978***	-0.0285
	(0.014)	(0.022)
11.refmonth	-0.0444***	0.0737***
	(0.014)	(0.023)
12.refmonth	-0.202***	-0.180***
	(0.015)	(0.024)
13.refmonth	-0.224***	-0.249***
	(0.015)	(0.023)
_cons	6.531***	8.681***
	(0.018)	(0.026)
N	1066938	1066938

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-15: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment using split household sample based on census region

	Dependent variable: USDA Score1 of monthly aggregated household food purchases			
Independent	(1)	(2)	(3)	(4)
variable	Northeast	Midwest	South	West
1.pandemicyear#1.refmonth	0.0729	0.0263	-0.0145	0.0565*
	(0.051)	(0.030)	(0.028)	(0.033)
1.pandemicyear#2.refmonth	-0.0266	0.0304	-0.0399	-0.00225
	(0.039)	(0.029)	(0.028)	(0.038)
1.pandemicyear#3.refmonth	0.0563	0.0594*	0.0193	0.0639*
	(0.048)	(0.032)	(0.027)	(0.033)
1.pandemicyear#4.refmonth	0.0222	-0.00368	-0.0451*	-0.0754**
	(0.041)	(0.031)	(0.026)	(0.038)
1.pandemicyear#5.refmonth	0.00892	0.0143	-0.0349	0.0293
	(0.045)	(0.029)	(0.027)	(0.039)
1.pandemicyear#6.refmonth			(omitted)	
1.pandemicyear#7.refmonth	0.467***	0.405***	0.401***	0.485***
	(0.042)	(0.033)	(0.028)	(0.040)
1.pandemicyear#8.refmonth	0.317***	0.406***	0.456***	0.440***
	(0.048)	(0.031)	(0.031)	(0.040)
1.pandemicyear#9.refmonth	0.509***	0.554***	0.514***	0.483***
	(0.043)	(0.031)	(0.029)	(0.047)
1.pandemicyear#10.refmonth	0.387***	0.385***	0.295***	0.310***
	(0.045)	(0.033)	(0.030)	(0.045)
1.pandemicyear#11.refmonth	0.240***	0.210***	0.222***	0.283***
	(0.047)	(0.030)	(0.031)	(0.045)
1.pandemicyear#12.refmonth	0.229***	0.260***	0.281***	0.278***
	(0.044)	(0.032)	(0.029)	(0.046)
1.pandemicyear#13.refmonth	0.135***	0.179***	0.178***	0.264***
	(0.049)	(0.031)	(0.030)	(0.047)
1.pandemicyear	-0.105***	-0.123***	-0.0828***	-0.0734**
	(0.033)	(0.021)	(0.021)	(0.032)
1.refmonth	-0.316***	-0.252***	-0.0675***	-0.141***
	(0.031)	(0.022)	(0.020)	(0.030)
2.refmonth	-0.161***	-0.183***	-0.0237	-0.0585*
	(0.026)	(0.022)	(0.022)	(0.034)
3.refmonth	-0.0634**	-0.0128	0.0542***	0.0414
	(0.031)	(0.021)	(0.018)	(0.028)
4.refmonth	-0.0936***	-0.0892***	-0.0496**	-0.00898
	(0.032)	(0.022)	(0.020)	(0.031)
5.refmonth	0.0866***	0.0594***	0.117***	0.0326
	(0.030)	(0.021)	(0.022)	(0.030)
6.refmonth			(omitted)	
7.refmonth	-0.0478*	-0.0399*	0.00239	-0.00151
	(0.029)	(0.024)	(0.021)	(0.025)
8.refmonth	-0.0744***	-0.0964***	-0.0378*	-0.0289
	(0.028)	(0.020)	(0.021)	(0.029)
9.refmonth	-0.129***	-0.218***	-0.117***	-0.0504*
	(0.033)	(0.022)	(0.020)	(0.030)
10.refmonth	-0.145***	-0.189***	-0.0575***	-0.0114
	(0.031)	(0.023)	(0.022)	(0.029)
11.refmonth	-0.0320	-0.121***	-0.0159	-0.00937
	(0.033)	(0.022)	(0.023)	(0.038)
12.refmonth	-0.261***	-0.302***	-0.151***	-0.119***
	(0.029)	(0.024)	(0.022)	(0.038)
13.refmonth	-0.326***	-0.338***	-0.120***	-0.185***
	(0.032)	(0.022)	(0.021)	(0.039)
_cons	6.714***	6.463***	6.491***	6.533***
	(0.043)	(0.028)	(0.026)	(0.052)
N	184810	274772	401403	205953

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-16: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment using split household sample based on age of children

	Dependent variable: USDA Score1 of monthly aggregated household food purchases			
Independent variable	(1) No children under 18 years old	(2) Any young children	(3) School-age children	(4) Only middle-school or high-school children
1.pandemicyear#1.refmonth	0.0408**	0.0377	-0.0880	-0.0618
	(0.019)	(0.103)	(0.069)	(0.081)
1.pandemicyear#2.refmonth	-0.0112	-0.116	-0.000413	0.0199
	(0.018)	(0.103)	(0.070)	(0.075)
1.pandemicyear#3.refmonth	0.0519***	0.0585	-0.000832	-0.0148
	(0.018)	(0.100)	(0.071)	(0.074)
1.pandemicyear#4.refmonth	-0.0217	0.0231	-0.0338	-0.154**
	(0.018)	(0.104)	(0.065)	(0.076)
1.pandemicyear#5.refmonth	-0.0113	0.0535	0.0612	0.00987
	(0.018)	(0.095)	(0.066)	(0.070)
1.pandemicyear#6.refmonth			(omitted)	
1.pandemicyear#7.refmonth	0.417***	0.231**	0.516***	0.641***
	(0.018)	(0.100)	(0.071)	(0.079)
1.pandemicyear#8.refmonth	0.398***	0.366***	0.499***	0.605***
	(0.019)	(0.117)	(0.073)	(0.081)
1.pandemicyear#9.refmonth	0.515***	0.297***	0.596***	0.597***
	(0.019)	(0.113)	(0.072)	(0.086)
1.pandemicyear#10.refmonth	0.328***	0.257**	0.395***	0.444***
	(0.020)	(0.114)	(0.070)	(0.083)
1.pandemicyear#11.refmonth	0.210***	0.361***	0.392***	0.289***
	(0.019)	(0.116)	(0.078)	(0.090)
1.pandemicyear#12.refmonth	0.257***	0.244**	0.349***	0.309***
	(0.019)	(0.118)	(0.076)	(0.083)
1.pandemicyear#13.refmonth	0.198***	0.0369	0.117	0.215***
	(0.019)	(0.117)	(0.074)	(0.082)
1.pandemicyear	-0.101***	-0.0603	-0.100*	-0.0297
	(0.014)	(0.078)	(0.054)	(0.056)
1.refmonth	-0.176***	-0.293***	-0.119**	-0.107*
	(0.014)	(0.076)	(0.049)	(0.057)
2.refmonth	-0.0892***	-0.144*	-0.113**	-0.119**
	(0.014)	(0.075)	(0.050)	(0.054)
3.refmonth	0.0216*	-0.163**	-0.00621	0.0596
	(0.013)	(0.070)	(0.050)	(0.055)
4.refmonth	-0.0477***	-0.217***	-0.160***	0.00717
	(0.014)	(0.079)	(0.049)	(0.057)
5.refmonth	0.0751***	0.0593	0.136***	0.102**
	(0.014)	(0.075)	(0.048)	(0.052)
6.refmonth			(omitted)	
7.refmonth	-0.0100	-0.00682	-0.0942*	-0.0401
	(0.013)	(0.074)	(0.051)	(0.054)
8.refmonth	-0.0458***	-0.160**	-0.0894*	-0.112**
	(0.013)	(0.076)	(0.050)	(0.055)
9.refmonth	-0.132***	-0.111	-0.181***	-0.0755
	(0.014)	(0.074)	(0.052)	(0.058)
10.refmonth	-0.0847***	-0.216***	-0.173***	-0.105*
	(0.015)	(0.076)	(0.050)	(0.060)
11.refmonth	-0.0164	-0.339***	-0.222***	-0.0154
	(0.015)	(0.078)	(0.058)	(0.061)
12.refmonth	-0.179***	-0.420***	-0.335***	-0.218***
	(0.015)	(0.081)	(0.055)	(0.058)
13.refmonth	-0.217***	-0.364***	-0.275***	-0.171***
	(0.015)	(0.077)	(0.055)	(0.059)
_cons	6.403***	7.430***	7.032***	7.089***
	(0.019)	(0.086)	(0.054)	(0.056)
N	883384	41733	78562	63259

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-17: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment using split household sample based on household income level

	Dependent variable: USDA Score1 of monthly aggregated household food purchases			
Independent	(1)	(2)	(3)	(4)
variable	Low income	Low-Medium income	Medium-High income	High income
1.pandemicyear#1.refmonth	0.0501	0.0593*	0.00818	-0.0210
	(0.037)	(0.032)	(0.033)	(0.038)
1.pandemicyear#2.refmonth	-0.0139	-0.0457	0.0286	-0.0217
	(0.036)	(0.029)	(0.031)	(0.040)
1.pandemicyear#3.refmonth	0.0387	0.0370	0.0621**	0.0351
	(0.037)	(0.028)	(0.031)	(0.039)
1.pandemicyear#4.refmonth	-0.0553	-0.0434	-0.00328	-0.0260
	(0.038)	(0.029)	(0.031)	(0.038)
1.pandemicyear#5.refmonth	0.0220	-0.0160	-0.0224	0.0255
	(0.036)	(0.029)	(0.030)	(0.039)
1.pandemicyear#6.refmonth			(omitted)	
1.pandemicyear#7.refmonth	0.312***	0.346***	0.506***	0.530***
	(0.036)	(0.029)	(0.032)	(0.044)
1.pandemicyear#8.refmonth	0.321***	0.360***	0.440***	0.536***
	(0.039)	(0.031)	(0.035)	(0.044)
1.pandemicyear#9.refmonth	0.379***	0.443***	0.562***	0.662***
	(0.039)	(0.030)	(0.033)	(0.042)
1.pandemicyear#10.refmonth	0.208***	0.271***	0.403***	0.433***
	(0.039)	(0.031)	(0.033)	(0.045)
1.pandemicyear#11.refmonth	0.141***	0.204***	0.236***	0.339***
	(0.038)	(0.030)	(0.034)	(0.045)
1.pandemicyear#12.refmonth	0.144***	0.206***	0.296***	0.398***
	(0.041)	(0.029)	(0.032)	(0.045)
1.pandemicyear#13.refmonth	0.145***	0.133***	0.226***	0.239***
	(0.039)	(0.030)	(0.036)	(0.045)
1.pandemicyear	-0.0871***	-0.0924***	-0.118***	-0.0740**
	(0.029)	(0.022)	(0.023)	(0.030)
1.refmonth	-0.0994***	-0.178***	-0.195***	-0.187***
	(0.027)	(0.023)	(0.024)	(0.030)
2.refmonth	-0.0252	-0.0604***	-0.133***	-0.143***
	(0.027)	(0.022)	(0.023)	(0.028)
3.refmonth	0.0444	0.0398*	-0.0250	0.0110
	(0.028)	(0.021)	(0.021)	(0.027)
4.refmonth	-0.0274	-0.0396*	-0.0753***	-0.0872***
	(0.026)	(0.023)	(0.023)	(0.030)
5.refmonth	0.0321	0.0760***	0.0871***	0.114***
	(0.027)	(0.021)	(0.022)	(0.027)
6.refmonth			(omitted)	
7.refmonth	-0.0126	0.0188	-0.0621***	-0.0102
	(0.026)	(0.021)	(0.022)	(0.029)
8.refmonth	-0.0366	-0.0422**	-0.0669***	-0.0787***
	(0.026)	(0.021)	(0.022)	(0.030)
9.refmonth	-0.0544**	-0.102***	-0.151***	-0.205***
	(0.026)	(0.022)	(0.023)	(0.027)
10.refmonth	-0.0472*	-0.0878***	-0.118***	-0.119***
	(0.028)	(0.022)	(0.023)	(0.030)
11.refmonth	0.0188	-0.0404*	-0.0651***	-0.0682**
	(0.027)	(0.022)	(0.024)	(0.031)
12.refmonth	-0.111***	-0.183***	-0.235***	-0.251***
	(0.028)	(0.023)	(0.024)	(0.032)
13.refmonth	-0.128***	-0.208***	-0.256***	-0.277***
	(0.027)	(0.022)	(0.025)	(0.032)
_cons	5.803***	6.340***	6.753***	7.041***
	(0.030)	(0.027)	(0.030)	(0.034)
N	181855	323160	322808	239115

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-18: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment using split household sample based on race

	Dependent variable: USDA Score1 of monthly aggregated household food purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.153*	0.0259	-0.0130	-0.0688	-0.0399
	(0.081)	(0.019)	(0.060)	(0.106)	(0.124)
1.pandemicyear#2.refmonth	0.0255	-0.0143	0.0424	-0.0785	-0.189
	(0.079)	(0.019)	(0.059)	(0.109)	(0.126)
1.pandemicyear#3.refmonth	0.0159	0.0500***	0.0337	0.0435	-0.0110
	(0.070)	(0.019)	(0.058)	(0.125)	(0.116)
1.pandemicyear#4.refmonth	-0.0483	-0.0289	-0.0200	0.000827	-0.0509
	(0.072)	(0.018)	(0.056)	(0.108)	(0.125)
1.pandemicyear#5.refmonth	0.0254	-0.0132	0.0474	0.119	-0.118
	(0.078)	(0.019)	(0.056)	(0.125)	(0.123)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.552***	0.390***	0.555***	0.759***	0.342***
	(0.080)	(0.018)	(0.056)	(0.119)	(0.120)
1.pandemicyear#8.refmonth	0.631***	0.357***	0.596***	0.809***	0.364***
	(0.075)	(0.020)	(0.066)	(0.117)	(0.130)
1.pandemicyear#9.refmonth	0.654***	0.451***	0.784***	1.031***	0.363***
	(0.086)	(0.020)	(0.066)	(0.112)	(0.127)
1.pandemicyear#10.refmonth	0.493***	0.273***	0.541***	0.922***	0.241**
	(0.085)	(0.020)	(0.063)	(0.122)	(0.119)
1.pandemicyear#11.refmonth	0.301***	0.180***	0.430***	0.737***	0.190
	(0.084)	(0.020)	(0.060)	(0.121)	(0.119)
1.pandemicyear#12.refmonth	0.390***	0.207***	0.528***	0.654***	0.130
	(0.085)	(0.019)	(0.068)	(0.127)	(0.130)
1.pandemicyear#13.refmonth	0.290***	0.149***	0.313***	0.539***	0.0624
	(0.078)	(0.019)	(0.066)	(0.122)	(0.138)
1.pandemicyear	-0.128**	-0.0995***	-0.0783*	-0.0862	0.0428
	(0.064)	(0.014)	(0.044)	(0.085)	(0.093)
1.refmonth	-0.161***	-0.182***	-0.0923**	-0.258***	-0.120
	(0.062)	(0.015)	(0.041)	(0.080)	(0.088)
2.refmonth	-0.110*	-0.0856***	-0.123***	-0.200***	-0.0807
	(0.063)	(0.015)	(0.040)	(0.076)	(0.085)
3.refmonth	0.00699	0.0128	0.0740*	-0.0525	-0.0801
	(0.055)	(0.014)	(0.038)	(0.082)	(0.079)
4.refmonth	-0.158***	-0.0403***	-0.0462	-0.254***	-0.191**
	(0.052)	(0.014)	(0.043)	(0.087)	(0.095)
5.refmonth	0.0872	0.0806***	0.115***	-0.0345	0.0851
	(0.057)	(0.014)	(0.040)	(0.087)	(0.088)
6.refmonth			(omitted)		
7.refmonth	0.0193	-0.0207	-0.0402	0.0102	0.0348
	(0.056)	(0.013)	(0.038)	(0.084)	(0.083)
8.refmonth	-0.111*	-0.0574***	-0.00439	-0.144*	-0.0281
	(0.061)	(0.014)	(0.041)	(0.081)	(0.088)
9.refmonth	-0.177***	-0.128***	-0.144***	-0.169**	-0.0611
	(0.065)	(0.015)	(0.046)	(0.075)	(0.087)
10.refmonth	-0.172**	-0.0884***	-0.108**	-0.194**	-0.0215
	(0.067)	(0.015)	(0.044)	(0.090)	(0.088)
11.refmonth	-0.0718	-0.0363**	-0.0367	-0.158*	-0.0988
	(0.069)	(0.015)	(0.044)	(0.084)	(0.085)
12.refmonth	-0.244***	-0.193***	-0.209***	-0.338***	-0.155*
	(0.067)	(0.015)	(0.044)	(0.084)	(0.092)
13.refmonth	-0.258***	-0.230***	-0.132***	-0.353***	-0.160*
	(0.064)	(0.015)	(0.041)	(0.085)	(0.088)
_cons	6.855***	6.511***	6.349***	6.928***	6.513***
	(0.081)	(0.018)	(0.043)	(0.113)	(0.107)
N	67079	823708	112689	37483	25979

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-19: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment using split household sample based on number of income sources

	Dependent variable: USDA Score1 of monthly aggregated household food purchases	
Independent variable	(1) Dual income	(2) Single or no income
1.pandemicyear#1.refmonth	-0.0634*	0.0578***
	(0.036)	(0.020)
1.pandemicyear#2.refmonth	-0.00942	-0.0138
	(0.037)	(0.020)
1.pandemicyear#3.refmonth	0.0368	0.0475**
	(0.038)	(0.019)
1.pandemicyear#4.refmonth	-0.0254	-0.0300
	(0.035)	(0.020)
1.pandemicyear#5.refmonth	-0.0180	0.00305
	(0.036)	(0.020)
1.pandemicyear#6.refmonth	(omitted)	
1.pandemicyear#7.refmonth	0.472***	0.414***
	(0.037)	(0.019)
1.pandemicyear#8.refmonth	0.464***	0.398***
	(0.037)	(0.020)
1.pandemicyear#9.refmonth	0.586***	0.491***
	(0.037)	(0.020)
1.pandemicyear#10.refmonth	0.390***	0.317***
	(0.039)	(0.021)
1.pandemicyear#11.refmonth	0.233***	0.234***
	(0.039)	(0.021)
1.pandemicyear#12.refmonth	0.272***	0.264***
	(0.041)	(0.020)
1.pandemicyear#13.refmonth	0.175***	0.191***
	(0.040)	(0.020)
1.pandemicyear	-0.0757***	-0.102***
	(0.027)	(0.015)
1.refmonth	-0.200***	-0.162***
	(0.027)	(0.016)
2.refmonth	-0.156***	-0.0718***
	(0.027)	(0.015)
3.refmonth	-0.0217	0.0277**
	(0.027)	(0.014)
4.refmonth	-0.0725***	-0.0546***
	(0.025)	(0.014)
5.refmonth	0.109***	0.0704***
	(0.025)	(0.014)
6.refmonth	(omitted)	
7.refmonth	-0.0152	-0.0185
	(0.025)	(0.014)
8.refmonth	-0.0480*	-0.0608***
	(0.026)	(0.014)
9.refmonth	-0.165***	-0.119***
	(0.027)	(0.015)
10.refmonth	-0.118***	-0.0897***
	(0.028)	(0.015)
11.refmonth	-0.0694**	-0.0347**
	(0.029)	(0.016)
12.refmonth	-0.256***	-0.182***
	(0.030)	(0.016)
13.refmonth	-0.291***	-0.199***
	(0.029)	(0.015)
_cons	7.100***	6.317***
	(0.030)	(0.019)
N	290658	776280

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-20: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment using split household sample based on vehicle ownership

	Dependent variable: USDA Score1 of monthly aggregated household food purchases	
Independent variable	(1) Vehicle owner	(2) Without vehicle
1.pandemicyear#1.refmonth	0.0256	0.0243
	(0.029)	(0.022)
1.pandemicyear#2.refmonth	-0.0275	-0.00427
	(0.029)	(0.021)
1.pandemicyear#3.refmonth	0.0341	0.0499**
	(0.029)	(0.022)
1.pandemicyear#4.refmonth	-0.0169	-0.0348*
	(0.027)	(0.021)
1.pandemicyear#5.refmonth	0.00463	-0.00601
	(0.028)	(0.021)
1.pandemicyear#6.refmonth	(omitted)	
1.pandemicyear#7.refmonth	0.489***	0.399***
	(0.029)	(0.022)
1.pandemicyear#8.refmonth	0.515***	0.363***
	(0.031)	(0.023)
1.pandemicyear#9.refmonth	0.566***	0.492***
	(0.031)	(0.023)
1.pandemicyear#10.refmonth	0.342***	0.334***
	(0.032)	(0.024)
1.pandemicyear#11.refmonth	0.249***	0.226***
	(0.029)	(0.024)
1.pandemicyear#12.refmonth	0.276***	0.261***
	(0.030)	(0.023)
1.pandemicyear#13.refmonth	0.200***	0.180***
	(0.031)	(0.024)
1.pandemicyear	-0.108***	-0.0884***
	(0.023)	(0.016)
1.refmonth	-0.194***	-0.161***
	(0.020)	(0.017)
2.refmonth	-0.0900***	-0.0978***
	(0.021)	(0.017)
3.refmonth	0.0331*	0.00433
	(0.020)	(0.015)
4.refmonth	-0.0328*	-0.0738***
	(0.019)	(0.016)
5.refmonth	0.0781***	0.0821***
	(0.020)	(0.016)
6.refmonth	(omitted)	
7.refmonth	-0.0534***	0.000805
	(0.020)	(0.016)
8.refmonth	-0.0589***	-0.0567***
	(0.020)	(0.016)
9.refmonth	-0.139***	-0.129***
	(0.022)	(0.017)
10.refmonth	-0.105***	-0.0941***
	(0.022)	(0.017)
11.refmonth	-0.0591***	-0.0367**
	(0.021)	(0.018)
12.refmonth	-0.212***	-0.197***
	(0.021)	(0.019)
13.refmonth	-0.249***	-0.212***
	(0.022)	(0.018)
_cons	6.588***	6.500***
	(0.024)	(0.021)
N	367602	699336

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-21: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment among White households across income groups

	Dependent variable: USDA Score1 of monthly aggregated household food purchases			
Independent	(1)	(2)	(3)	(4)
variable	Low income	Low-Medium income	Medium-High income	High income
1.pandemicyear#1.refmonth	0.0323	0.0702*	0.0553	-0.0845**
	(0.040)	(0.036)	(0.035)	(0.043)
1.pandemicyear#2.refmonth	-0.00900	-0.0393	0.0312	-0.0441
	(0.039)	(0.032)	(0.034)	(0.045)
1.pandemicyear#3.refmonth	0.0509	0.0415	0.0847**	0.0163
	(0.039)	(0.032)	(0.033)	(0.043)
1.pandemicyear#4.refmonth	-0.0619	-0.0294	0.0257	-0.0777*
	(0.041)	(0.033)	(0.033)	(0.044)
1.pandemicyear#5.refmonth	0.0150	-0.0123	-0.0116	-0.0373
	(0.039)	(0.031)	(0.032)	(0.042)
1.pandemicyear#6.refmonth			(omitted)	
1.pandemicyear#7.refmonth	0.280***	0.331***	0.472***	0.456***
	(0.040)	(0.033)	(0.034)	(0.045)
1.pandemicyear#8.refmonth	0.246***	0.319***	0.413***	0.434***
	(0.042)	(0.034)	(0.035)	(0.048)
1.pandemicyear#9.refmonth	0.339***	0.402***	0.530***	0.508***
	(0.042)	(0.034)	(0.037)	(0.046)
1.pandemicyear#10.refmonth	0.154***	0.256***	0.354***	0.282***
	(0.042)	(0.035)	(0.036)	(0.047)
1.pandemicyear#11.refmonth	0.132***	0.195***	0.169***	0.216***
	(0.042)	(0.035)	(0.037)	(0.048)
1.pandemicyear#12.refmonth	0.117***	0.186***	0.253***	0.249***
	(0.042)	(0.033)	(0.036)	(0.046)
1.pandemicyear#13.refmonth	0.105**	0.116***	0.200***	0.164***
	(0.042)	(0.033)	(0.036)	(0.047)
1.pandemicyear	-0.0762**	-0.107***	-0.141***	-0.0514
	(0.030)	(0.025)	(0.024)	(0.033)
1.refmonth	-0.109***	-0.187***	-0.241***	-0.149***
	(0.030)	(0.025)	(0.026)	(0.034)
2.refmonth	-0.0257	-0.0521**	-0.134***	-0.115***
	(0.029)	(0.024)	(0.025)	(0.033)
3.refmonth	0.0290	0.0462**	-0.0410*	0.0263
	(0.029)	(0.023)	(0.024)	(0.032)
4.refmonth	-0.0136	-0.0209	-0.0876***	-0.0226
	(0.030)	(0.024)	(0.025)	(0.034)
5.refmonth	0.0287	0.0803***	0.0676***	0.140***
	(0.028)	(0.023)	(0.024)	(0.030)
6.refmonth			(omitted)	
7.refmonth	-0.00289	0.0159	-0.0721***	-0.0157
	(0.028)	(0.023)	(0.025)	(0.033)
8.refmonth	-0.0162	-0.0385	-0.0922***	-0.0681**
	(0.028)	(0.024)	(0.024)	(0.034)
9.refmonth	-0.0496*	-0.0988***	-0.163***	-0.183***
	(0.029)	(0.023)	(0.026)	(0.031)
10.refmonth	-0.0261	-0.0925***	-0.128***	-0.0766**
	(0.030)	(0.023)	(0.025)	(0.034)
11.refmonth	0.0160	-0.0346	-0.0540**	-0.0568
	(0.030)	(0.025)	(0.026)	(0.035)
12.refmonth	-0.101***	-0.180***	-0.245***	-0.216***
	(0.030)	(0.025)	(0.026)	(0.035)
13.refmonth	-0.124***	-0.208***	-0.285***	-0.274***
	(0.029)	(0.024)	(0.026)	(0.035)
_cons	5.759***	6.322***	6.755***	7.056***
	(0.032)	(0.029)	(0.032)	(0.036)
N	144311	254786	248237	176374

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-22: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment among Black households across income groups

	Dependent variable: USDA Score1 of monthly aggregated household food purchases			
Independent	(1)	(2)	(3)	(4)
variable	Low income	Low-Medium income	Medium-High income	High income
1.pandemicyear#1.refmonth	0.168	0.0196	-0.148	-0.0247
	(0.120)	(0.108)	(0.109)	(0.132)
1.pandemicyear#2.refmonth	0.142	-0.0167	0.140	-0.109
	(0.119)	(0.102)	(0.114)	(0.144)
1.pandemicyear#3.refmonth	0.114	0.0384	-0.0484	0.0641
	(0.126)	(0.109)	(0.111)	(0.145)
1.pandemicyear#4.refmonth	0.0627	-0.102	-0.142	0.193
	(0.130)	(0.095)	(0.101)	(0.138)
1.pandemicyear#5.refmonth	0.173	0.0579	-0.0837	0.115
	(0.120)	(0.102)	(0.110)	(0.140)
1.pandemicyear#6.refmonth			(omitted)	
1.pandemicyear#7.refmonth	0.534***	0.380***	0.639***	0.683***
	(0.115)	(0.096)	(0.107)	(0.133)
1.pandemicyear#8.refmonth	0.683***	0.495***	0.536***	0.744***
	(0.131)	(0.114)	(0.125)	(0.134)
1.pandemicyear#9.refmonth	0.573***	0.653***	0.792***	1.129***
	(0.149)	(0.114)	(0.124)	(0.134)
1.pandemicyear#10.refmonth	0.525***	0.340***	0.599***	0.751***
	(0.140)	(0.107)	(0.123)	(0.157)
1.pandemicyear#11.refmonth	0.309**	0.350***	0.464***	0.581***
	(0.137)	(0.097)	(0.123)	(0.142)
1.pandemicyear#12.refmonth	0.440***	0.336***	0.535***	0.850***
	(0.134)	(0.107)	(0.115)	(0.149)
1.pandemicyear#13.refmonth	0.312**	0.259**	0.279**	0.431***
	(0.143)	(0.112)	(0.124)	(0.164)
1.pandemicyear	-0.198**	-0.0626	-0.0302	-0.0589
	(0.098)	(0.074)	(0.085)	(0.104)
1.refmonth	-0.106	-0.131*	-0.0185	-0.126
	(0.082)	(0.077)	(0.073)	(0.107)
2.refmonth	-0.111	-0.106	-0.197***	-0.0394
	(0.088)	(0.070)	(0.075)	(0.104)
3.refmonth	0.0743	0.0730	0.0993	0.0499
	(0.091)	(0.072)	(0.079)	(0.104)
4.refmonth	-0.0969	-0.00237	0.0677	-0.224**
	(0.096)	(0.073)	(0.078)	(0.109)
5.refmonth	-0.0366	0.0912	0.211***	0.139
	(0.088)	(0.077)	(0.072)	(0.095)
6.refmonth			(omitted)	
7.refmonth	-0.183**	-0.0405	-0.0588	0.119
	(0.086)	(0.068)	(0.072)	(0.099)
8.refmonth	-0.132	-0.0122	0.130*	-0.0705
	(0.083)	(0.078)	(0.074)	(0.104)
9.refmonth	-0.0880	-0.143*	-0.115	-0.225**
	(0.091)	(0.075)	(0.078)	(0.101)
10.refmonth	-0.199**	-0.0392	-0.0514	-0.208*
	(0.098)	(0.074)	(0.085)	(0.110)
11.refmonth	-0.0322	-0.0462	-0.0717	0.0358
	(0.099)	(0.071)	(0.085)	(0.103)
12.refmonth	-0.223**	-0.152**	-0.195***	-0.287***
	(0.094)	(0.072)	(0.075)	(0.107)
13.refmonth	-0.126	-0.215***	-0.0132	-0.181*
	(0.105)	(0.078)	(0.076)	(0.107)
_cons	5.980***	6.157***	6.483***	6.739***
	(0.105)	(0.074)	(0.076)	(0.107)
N	20060	34350	34685	23594

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-23: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment among Hispanic households across income groups

	Dependent variable: USDA Score1 of monthly aggregated household food purchases			
Independent	(1)	(2)	(3)	(4)
variable	Low income	Low-Medium income	Medium-High income	High income
1.pandemicyear#1.refmonth	0.172	0.266**	-0.120	0.361**
	(0.220)	(0.133)	(0.140)	(0.176)
1.pandemicyear#2.refmonth	-0.0647	0.141	-0.162	0.184
	(0.190)	(0.146)	(0.143)	(0.173)
1.pandemicyear#3.refmonth	-0.189	0.245**	-0.0736	-0.0117
	(0.182)	(0.121)	(0.136)	(0.159)
1.pandemicyear#4.refmonth	-0.262	0.104	-0.213	0.102
	(0.193)	(0.145)	(0.142)	(0.160)
1.pandemicyear#5.refmonth	-0.122	0.0467	-0.107	0.242
	(0.197)	(0.134)	(0.142)	(0.165)
1.pandemicyear#6.refmonth			(omitted)	
1.pandemicyear#7.refmonth	0.311	0.605***	0.586***	0.564***
	(0.193)	(0.139)	(0.149)	(0.178)
1.pandemicyear#8.refmonth	0.641***	0.856***	0.439***	0.630***
	(0.173)	(0.149)	(0.138)	(0.169)
1.pandemicyear#9.refmonth	0.494***	0.739***	0.504***	0.820***
	(0.173)	(0.153)	(0.160)	(0.168)
1.pandemicyear#10.refmonth	0.261	0.479***	0.488***	0.629***
	(0.202)	(0.150)	(0.152)	(0.181)
1.pandemicyear#11.refmonth	0.0301	0.217	0.333**	0.483***
	(0.194)	(0.135)	(0.144)	(0.173)
1.pandemicyear#12.refmonth	0.166	0.401***	0.237	0.688***
	(0.222)	(0.133)	(0.145)	(0.181)
1.pandemicyear#13.refmonth	0.402**	0.354***	0.172	0.314*
	(0.183)	(0.133)	(0.159)	(0.160)
1.pandemicyear	-0.0582	-0.250**	-0.00473	-0.186
	(0.147)	(0.103)	(0.105)	(0.134)
1.refmonth	-0.119	-0.116	-0.0145	-0.415***
	(0.151)	(0.098)	(0.098)	(0.138)
2.refmonth	-0.0732	-0.173	0.0466	-0.258**
	(0.149)	(0.107)	(0.111)	(0.124)
3.refmonth	0.125	-0.0699	0.0659	-0.0463
	(0.148)	(0.092)	(0.094)	(0.127)
4.refmonth	-0.146	-0.285***	0.00681	-0.236**
	(0.148)	(0.101)	(0.094)	(0.112)
5.refmonth	0.135	-0.0266	0.180*	0.0676
	(0.155)	(0.093)	(0.092)	(0.116)
6.refmonth			(omitted)	
7.refmonth	0.0599	0.0581	-0.0266	0.0146
	(0.136)	(0.100)	(0.095)	(0.123)
8.refmonth	-0.193	-0.265**	-0.0198	-0.0192
	(0.147)	(0.107)	(0.088)	(0.123)
9.refmonth	-0.0683	-0.185	-0.116	-0.297**
	(0.135)	(0.114)	(0.109)	(0.118)
10.refmonth	-0.0756	-0.173	-0.191*	-0.195
	(0.135)	(0.107)	(0.106)	(0.139)
11.refmonth	-0.0580	-0.0787	-0.0578	-0.0858
	(0.137)	(0.106)	(0.098)	(0.144)
12.refmonth	-0.332**	-0.298***	-0.117	-0.306**
	(0.156)	(0.107)	(0.106)	(0.126)
13.refmonth	-0.317**	-0.292***	-0.180*	-0.293**
	(0.154)	(0.108)	(0.105)	(0.124)
_cons	6.162***	6.798***	7.046***	7.029***
	(0.154)	(0.145)	(0.115)	(0.125)
N	8814	18966	21886	17413

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-24: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment among Asian households across income groups

	Dependent variable: USDA Score1 of monthly aggregated household food purchases			
Independent	(1)	(2)	(3)	(4)
variable	Low income	Low-Medium income	Medium-High income	High income
1.pandemicyear#1.refmonth	-0.111	-0.416**	-0.240	0.210
	(0.326)	(0.207)	(0.200)	(0.170)
1.pandemicyear#2.refmonth	0.0168	-0.546**	-0.0918	0.121
	(0.293)	(0.243)	(0.183)	(0.184)
1.pandemicyear#3.refmonth	-0.295	-0.402	0.184	0.221
	(0.354)	(0.251)	(0.206)	(0.195)
1.pandemicyear#4.refmonth	0.322	-0.518**	0.0242	0.156
	(0.289)	(0.200)	(0.210)	(0.176)
1.pandemicyear#5.refmonth	0.0393	-0.379	0.0735	0.388**
	(0.391)	(0.256)	(0.205)	(0.183)
1.pandemicyear#6.refmonth			(omitted)	
1.pandemicyear#7.refmonth	0.944**	0.0312	0.775***	1.044***
	(0.393)	(0.224)	(0.188)	(0.223)
1.pandemicyear#8.refmonth	0.716**	0.0320	0.829***	1.169***
	(0.335)	(0.298)	(0.207)	(0.220)
1.pandemicyear#9.refmonth	0.916**	0.372	0.798***	1.506***
	(0.394)	(0.292)	(0.229)	(0.187)
1.pandemicyear#10.refmonth	0.986***	0.117	0.803***	1.354***
	(0.370)	(0.294)	(0.201)	(0.191)
1.pandemicyear#11.refmonth	0.687*	-0.0473	0.838***	1.030***
	(0.353)	(0.261)	(0.234)	(0.204)
1.pandemicyear#12.refmonth	0.140	0.264	0.585***	0.979***
	(0.346)	(0.254)	(0.218)	(0.201)
1.pandemicyear#13.refmonth	0.872**	-0.202	0.702***	0.709***
	(0.337)	(0.214)	(0.251)	(0.192)
1.pandemicyear	-0.436*	0.365**	-0.112	-0.207
	(0.240)	(0.169)	(0.151)	(0.138)
1.refmonth	0.232	-0.259*	-0.207	-0.388***
	(0.242)	(0.147)	(0.152)	(0.133)
2.refmonth	0.330	0.0169	-0.147	-0.434***
	(0.242)	(0.181)	(0.125)	(0.127)
3.refmonth	0.421	0.0368	-0.192	-0.0905
	(0.279)	(0.163)	(0.136)	(0.139)
4.refmonth	0.0372	0.0250	-0.258*	-0.433***
	(0.240)	(0.148)	(0.136)	(0.145)
5.refmonth	0.279	-0.0674	0.0112	-0.110
	(0.314)	(0.179)	(0.151)	(0.142)
6.refmonth			(omitted)	
7.refmonth	-0.0321	0.408**	0.0116	-0.162
	(0.341)	(0.162)	(0.139)	(0.155)
8.refmonth	0.0573	0.185	-0.219*	-0.284*
	(0.258)	(0.186)	(0.125)	(0.151)
9.refmonth	-0.0779	0.0484	-0.0344	-0.374***
	(0.310)	(0.183)	(0.151)	(0.129)
10.refmonth	-0.254	0.0593	-0.0879	-0.366***
	(0.306)	(0.196)	(0.148)	(0.140)
11.refmonth	0.344	-0.0830	-0.198	-0.261*
	(0.281)	(0.162)	(0.150)	(0.142)
12.refmonth	0.138	-0.259	-0.298*	-0.493***
	(0.276)	(0.162)	(0.151)	(0.137)
13.refmonth	-0.340	-0.119	-0.447***	-0.406***
	(0.253)	(0.143)	(0.156)	(0.140)
_cons	5.984***	6.494***	6.877***	7.343***
	(0.292)	(0.174)	(0.185)	(0.157)
N	3139	7376	10731	16237

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-25: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment among Other households across income groups

	Dependent variable: USDA Score1 of monthly aggregated household food purchases			
Independent	(1)	(2)	(3)	(4)
variable	Low income	Low-Medium income	Medium-High income	High income
1.pandemicyear#1.refmonth	-0.00322	-0.173	-0.0847	0.155
	(0.232)	(0.214)	(0.273)	(0.227)
1.pandemicyear#2.refmonth	-0.629**	-0.374*	0.185	-0.000590
	(0.247)	(0.200)	(0.268)	(0.289)
1.pandemicyear#3.refmonth	0.0105	-0.216	0.0575	0.128
	(0.219)	(0.200)	(0.229)	(0.282)
1.pandemicyear#4.refmonth	-0.183	-0.161	0.269	-0.224
	(0.212)	(0.217)	(0.270)	(0.260)
1.pandemicyear#5.refmonth	-0.116	-0.291	0.0299	-0.104
	(0.209)	(0.229)	(0.241)	(0.279)
1.pandemicyear#6.refmonth			(omitted)	
1.pandemicyear#7.refmonth	-0.0201	0.330	0.404	0.626**
	(0.210)	(0.211)	(0.252)	(0.287)
1.pandemicyear#8.refmonth	0.250	0.196	0.329	0.750**
	(0.239)	(0.254)	(0.248)	(0.313)
1.pandemicyear#9.refmonth	0.253	0.212	0.374	0.644**
	(0.225)	(0.234)	(0.264)	(0.311)
1.pandemicyear#10.refmonth	-0.0488	0.104	0.309	0.583**
	(0.258)	(0.230)	(0.250)	(0.271)
1.pandemicyear#11.refmonth	-0.353	0.0751	0.279	0.739**
	(0.236)	(0.205)	(0.258)	(0.295)
1.pandemicyear#12.refmonth	-0.230	-0.254	0.411	0.641**
	(0.245)	(0.279)	(0.258)	(0.293)
1.pandemicyear#13.refmonth	-0.238	-0.0829	0.319	0.214
	(0.228)	(0.271)	(0.239)	(0.307)
1.pandemicyear	0.171	0.222	-0.103	-0.127
	(0.171)	(0.168)	(0.204)	(0.189)
1.refmonth	0.0164	-0.178	0.00939	-0.345**
	(0.164)	(0.169)	(0.174)	(0.151)
2.refmonth	0.167	0.0915	-0.306	-0.265
	(0.154)	(0.158)	(0.189)	(0.187)
3.refmonth	-0.00967	-0.0317	-0.0971	-0.178
	(0.168)	(0.144)	(0.171)	(0.181)
4.refmonth	0.0178	-0.271*	-0.324*	-0.0946
	(0.142)	(0.162)	(0.187)	(0.203)
5.refmonth	0.0633	0.274	-0.00995	-0.0129
	(0.138)	(0.167)	(0.173)	(0.182)
6.refmonth			(omitted)	
7.refmonth	0.242*	-0.0767	0.0386	-0.0255
	(0.146)	(0.159)	(0.175)	(0.198)
8.refmonth	-0.0307	0.0407	-0.0692	-0.0560
	(0.156)	(0.144)	(0.166)	(0.223)
9.refmonth	-0.0295	0.0418	-0.187	-0.0563
	(0.154)	(0.156)	(0.187)	(0.200)
10.refmonth	0.109	-0.0697	0.0565	-0.161
	(0.178)	(0.182)	(0.178)	(0.187)
11.refmonth	0.201	-0.0551	-0.240	-0.269
	(0.168)	(0.151)	(0.173)	(0.204)
12.refmonth	0.253	-0.0511	-0.393**	-0.384*
	(0.175)	(0.194)	(0.167)	(0.204)
13.refmonth	0.170	-0.0565	-0.368**	-0.354*
	(0.178)	(0.165)	(0.169)	(0.198)
_cons	5.641***	6.429***	6.911***	6.972***
	(0.182)	(0.173)	(0.206)	(0.218)
N	5531	7682	7269	5497

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-26: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment among households of Low income across race groups

	Dependent variable: USDA Score1 of monthly aggregated household food purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.172	0.0323	0.168	-0.111	-0.00322
	(0.220)	(0.040)	(0.120)	(0.326)	(0.232)
1.pandemicyear#2.refmonth	-0.0647	-0.00900	0.142	0.0168	-0.629**
	(0.190)	(0.039)	(0.119)	(0.293)	(0.247)
1.pandemicyear#3.refmonth	-0.189	0.0509	0.114	-0.295	0.0105
	(0.182)	(0.039)	(0.126)	(0.354)	(0.219)
1.pandemicyear#4.refmonth	-0.262	-0.0619	0.0627	0.322	-0.183
	(0.193)	(0.041)	(0.130)	(0.289)	(0.212)
1.pandemicyear#5.refmonth	-0.122	0.0150	0.173	0.0393	-0.116
	(0.197)	(0.039)	(0.120)	(0.391)	(0.209)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.311	0.280***	0.534***	0.944**	-0.0201
	(0.193)	(0.040)	(0.115)	(0.393)	(0.210)
1.pandemicyear#8.refmonth	0.641***	0.246***	0.683***	0.716**	0.250
	(0.173)	(0.042)	(0.131)	(0.335)	(0.239)
1.pandemicyear#9.refmonth	0.494***	0.339***	0.573***	0.916**	0.253
	(0.173)	(0.042)	(0.149)	(0.394)	(0.225)
1.pandemicyear#10.refmonth	0.261	0.154***	0.525***	0.986***	-0.0488
	(0.202)	(0.042)	(0.140)	(0.370)	(0.258)
1.pandemicyear#11.refmonth	0.0301	0.132***	0.309**	0.687*	-0.353
	(0.194)	(0.042)	(0.137)	(0.353)	(0.236)
1.pandemicyear#12.refmonth	0.166	0.117***	0.440***	0.140	-0.230
	(0.222)	(0.042)	(0.134)	(0.346)	(0.245)
1.pandemicyear#13.refmonth	0.402**	0.105**	0.312**	0.872**	-0.238
	(0.183)	(0.042)	(0.143)	(0.337)	(0.228)
1.pandemicyear	-0.0582	-0.0762**	-0.198**	-0.436*	0.171
	(0.147)	(0.030)	(0.098)	(0.240)	(0.171)
1.refmonth	-0.119	-0.109***	-0.106	0.232	0.0164
	(0.151)	(0.030)	(0.082)	(0.242)	(0.164)
2.refmonth	-0.0732	-0.0257	-0.111	0.330	0.167
	(0.149)	(0.029)	(0.088)	(0.242)	(0.154)
3.refmonth	0.125	0.0290	0.0743	0.421	-0.00967
	(0.148)	(0.029)	(0.091)	(0.279)	(0.168)
4.refmonth	-0.146	-0.0136	-0.0969	0.0372	0.0178
	(0.148)	(0.030)	(0.096)	(0.240)	(0.142)
5.refmonth	0.135	0.0287	-0.0366	0.279	0.0633
	(0.155)	(0.028)	(0.088)	(0.314)	(0.138)
6.refmonth			(omitted)		
7.refmonth	0.0599	-0.00289	-0.183**	-0.0321	0.242*
	(0.136)	(0.028)	(0.086)	(0.341)	(0.146)
8.refmonth	-0.193	-0.0162	-0.132	0.0573	-0.0307
	(0.147)	(0.028)	(0.083)	(0.258)	(0.156)
9.refmonth	-0.0683	-0.0496*	-0.0880	-0.0779	-0.0295
	(0.135)	(0.029)	(0.091)	(0.310)	(0.154)
10.refmonth	-0.0756	-0.0261	-0.199**	-0.254	0.109
	(0.135)	(0.030)	(0.098)	(0.306)	(0.178)
11.refmonth	-0.0580	0.0160	-0.0322	0.344	0.201
	(0.137)	(0.030)	(0.099)	(0.281)	(0.168)
12.refmonth	-0.332**	-0.101***	-0.223**	0.138	0.253
	(0.156)	(0.030)	(0.094)	(0.276)	(0.175)
13.refmonth	-0.317**	-0.124***	-0.126	-0.340	0.170
	(0.154)	(0.029)	(0.105)	(0.253)	(0.178)
_cons	6.162***	5.759***	5.980***	5.984***	5.641***
	(0.154)	(0.032)	(0.105)	(0.292)	(0.182)
N	8814	144311	20060	3139	5531

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-27: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment among households of Low-Medium income across race groups

	Dependent variable: USDA Score1 of monthly aggregated household food purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.266**	0.0702*	0.0196	-0.416**	-0.173
	(0.133)	(0.036)	(0.108)	(0.207)	(0.214)
1.pandemicyear#2.refmonth	0.141	-0.0393	-0.0167	-0.546**	-0.374*
	(0.146)	(0.032)	(0.102)	(0.243)	(0.200)
1.pandemicyear#3.refmonth	0.245**	0.0415	0.0384	-0.402	-0.216
	(0.121)	(0.032)	(0.109)	(0.251)	(0.200)
1.pandemicyear#4.refmonth	0.104	-0.0294	-0.102	-0.518**	-0.161
	(0.145)	(0.033)	(0.095)	(0.200)	(0.217)
1.pandemicyear#5.refmonth	0.0467	-0.0123	0.0579	-0.379	-0.291
	(0.134)	(0.031)	(0.102)	(0.256)	(0.229)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.605***	0.331***	0.380***	0.0312	0.330
	(0.139)	(0.033)	(0.096)	(0.224)	(0.211)
1.pandemicyear#8.refmonth	0.856***	0.319***	0.495***	0.0320	0.196
	(0.149)	(0.034)	(0.114)	(0.298)	(0.254)
1.pandemicyear#9.refmonth	0.739***	0.402***	0.653***	0.372	0.212
	(0.153)	(0.034)	(0.114)	(0.292)	(0.234)
1.pandemicyear#10.refmonth	0.479***	0.256***	0.340***	0.117	0.104
	(0.150)	(0.035)	(0.107)	(0.294)	(0.230)
1.pandemicyear#11.refmonth	0.217	0.195***	0.350***	-0.0473	0.0751
	(0.135)	(0.035)	(0.097)	(0.261)	(0.205)
1.pandemicyear#12.refmonth	0.401***	0.186***	0.336***	0.264	-0.254
	(0.133)	(0.033)	(0.107)	(0.254)	(0.279)
1.pandemicyear#13.refmonth	0.354***	0.116***	0.259**	-0.202	-0.0829
	(0.133)	(0.033)	(0.112)	(0.214)	(0.271)
1.pandemicyear	-0.250**	-0.107***	-0.0626	0.365**	0.222
	(0.103)	(0.025)	(0.074)	(0.169)	(0.168)
1.refmonth	-0.116	-0.187***	-0.131*	-0.259*	-0.178
	(0.098)	(0.025)	(0.077)	(0.147)	(0.169)
2.refmonth	-0.173	-0.0521**	-0.106	0.0169	0.0915
	(0.107)	(0.024)	(0.070)	(0.181)	(0.158)
3.refmonth	-0.0699	0.0462**	0.0730	0.0368	-0.0317
	(0.092)	(0.023)	(0.072)	(0.163)	(0.144)
4.refmonth	-0.285***	-0.0209	-0.00237	0.0250	-0.271*
	(0.101)	(0.024)	(0.073)	(0.148)	(0.162)
5.refmonth	-0.0266	0.0803***	0.0912	-0.0674	0.274
	(0.093)	(0.023)	(0.077)	(0.179)	(0.167)
6.refmonth			(omitted)		
7.refmonth	0.0581	0.0159	-0.0405	0.408**	-0.0767
	(0.100)	(0.023)	(0.068)	(0.162)	(0.159)
8.refmonth	-0.265**	-0.0385	-0.0122	0.185	0.0407
	(0.107)	(0.024)	(0.078)	(0.186)	(0.144)
9.refmonth	-0.185	-0.0988***	-0.143*	0.0484	0.0418
	(0.114)	(0.023)	(0.075)	(0.183)	(0.156)
10.refmonth	-0.173	-0.0925***	-0.0392	0.0593	-0.0697
	(0.107)	(0.023)	(0.074)	(0.196)	(0.182)
11.refmonth	-0.0787	-0.0346	-0.0462	-0.0830	-0.0551
	(0.106)	(0.025)	(0.071)	(0.162)	(0.151)
12.refmonth	-0.298***	-0.180***	-0.152**	-0.259	-0.0511
	(0.107)	(0.025)	(0.072)	(0.162)	(0.194)
13.refmonth	-0.292***	-0.208***	-0.215***	-0.119	-0.0565
	(0.108)	(0.024)	(0.078)	(0.143)	(0.165)
_cons	6.798***	6.322***	6.157***	6.494***	6.429***
	(0.145)	(0.029)	(0.074)	(0.174)	(0.173)
N	18966	254786	34350	7376	7682

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-28: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment among households of Medium-High income across race groups

	Dependent variable: USDA Score1 of monthly aggregated household food purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.120	0.0553	-0.148	-0.240	-0.0847
	(0.140)	(0.035)	(0.109)	(0.200)	(0.273)
1.pandemicyear#2.refmonth	-0.162	0.0312	0.140	-0.0918	0.185
	(0.143)	(0.034)	(0.114)	(0.183)	(0.268)
1.pandemicyear#3.refmonth	-0.0736	0.0847**	-0.0484	0.184	0.0575
	(0.136)	(0.033)	(0.111)	(0.206)	(0.229)
1.pandemicyear#4.refmonth	-0.213	0.0257	-0.142	0.0242	0.269
	(0.142)	(0.033)	(0.101)	(0.210)	(0.270)
1.pandemicyear#5.refmonth	-0.107	-0.0116	-0.0837	0.0735	0.0299
	(0.142)	(0.032)	(0.110)	(0.205)	(0.241)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.586***	0.472***	0.639***	0.775***	0.404
	(0.149)	(0.034)	(0.107)	(0.188)	(0.252)
1.pandemicyear#8.refmonth	0.439***	0.413***	0.536***	0.829***	0.329
	(0.138)	(0.035)	(0.125)	(0.207)	(0.248)
1.pandemicyear#9.refmonth	0.504***	0.530***	0.792***	0.798***	0.374
	(0.160)	(0.037)	(0.124)	(0.229)	(0.264)
1.pandemicyear#10.refmonth	0.488***	0.354***	0.599***	0.803***	0.309
	(0.152)	(0.036)	(0.123)	(0.201)	(0.250)
1.pandemicyear#11.refmonth	0.333**	0.169***	0.464***	0.838***	0.279
	(0.144)	(0.037)	(0.123)	(0.234)	(0.258)
1.pandemicyear#12.refmonth	0.237	0.253***	0.535***	0.585***	0.411
	(0.145)	(0.036)	(0.115)	(0.218)	(0.258)
1.pandemicyear#13.refmonth	0.172	0.200***	0.279**	0.702***	0.319
	(0.159)	(0.036)	(0.124)	(0.251)	(0.239)
1.pandemicyear	-0.00473	-0.141***	-0.0302	-0.112	-0.103
	(0.105)	(0.024)	(0.085)	(0.151)	(0.204)
1.refmonth	-0.0145	-0.241***	-0.0185	-0.207	0.00939
	(0.098)	(0.026)	(0.073)	(0.152)	(0.174)
2.refmonth	0.0466	-0.134***	-0.197***	-0.147	-0.306
	(0.111)	(0.025)	(0.075)	(0.125)	(0.189)
3.refmonth	0.0659	-0.0410*	0.0993	-0.192	-0.0971
	(0.094)	(0.024)	(0.079)	(0.136)	(0.171)
4.refmonth	0.00681	-0.0876***	0.0677	-0.258*	-0.324*
	(0.094)	(0.025)	(0.078)	(0.136)	(0.187)
5.refmonth	0.180*	0.0676***	0.211***	0.0112	-0.00995
	(0.092)	(0.024)	(0.072)	(0.151)	(0.173)
6.refmonth			(omitted)		
7.refmonth	-0.0266	-0.0721***	-0.0588	0.0116	0.0386
	(0.095)	(0.025)	(0.072)	(0.139)	(0.175)
8.refmonth	-0.0198	-0.0922***	0.130*	-0.219*	-0.0692
	(0.088)	(0.024)	(0.074)	(0.125)	(0.166)
9.refmonth	-0.116	-0.163***	-0.115	-0.0344	-0.187
	(0.109)	(0.026)	(0.078)	(0.151)	(0.187)
10.refmonth	-0.191*	-0.128***	-0.0514	-0.0879	0.0565
	(0.106)	(0.025)	(0.085)	(0.148)	(0.178)
11.refmonth	-0.0578	-0.0540**	-0.0717	-0.198	-0.240
	(0.098)	(0.026)	(0.085)	(0.150)	(0.173)
12.refmonth	-0.117	-0.245***	-0.195***	-0.298*	-0.393**
	(0.106)	(0.026)	(0.075)	(0.151)	(0.167)
13.refmonth	-0.180*	-0.285***	-0.0132	-0.447***	-0.368**
	(0.105)	(0.026)	(0.076)	(0.156)	(0.169)
_cons	7.046***	6.755***	6.483***	6.877***	6.911***
	(0.115)	(0.032)	(0.076)	(0.185)	(0.206)
N	21886	248237	34685	10731	7269

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-29: Regression results of household food healthfulness (using USDA Score1) during the early pandemic response environment among households of High income across race groups

	Dependent variable: USDA Score1 of monthly aggregated household food purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.361**	-0.0845**	-0.0247	0.210	0.155
	(0.176)	(0.043)	(0.132)	(0.170)	(0.227)
1.pandemicyear#2.refmonth	0.184	-0.0441	-0.109	0.121	-0.000590
	(0.173)	(0.045)	(0.144)	(0.184)	(0.289)
1.pandemicyear#3.refmonth	-0.0117	0.0163	0.0641	0.221	0.128
	(0.159)	(0.043)	(0.145)	(0.195)	(0.282)
1.pandemicyear#4.refmonth	0.102	-0.0777*	0.193	0.156	-0.224
	(0.160)	(0.044)	(0.138)	(0.176)	(0.260)
1.pandemicyear#5.refmonth	0.242	-0.0373	0.115	0.388**	-0.104
	(0.165)	(0.042)	(0.140)	(0.183)	(0.279)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.564***	0.456***	0.683***	1.044***	0.626**
	(0.178)	(0.045)	(0.133)	(0.223)	(0.287)
1.pandemicyear#8.refmonth	0.630***	0.434***	0.744***	1.169***	0.750**
	(0.169)	(0.048)	(0.134)	(0.220)	(0.313)
1.pandemicyear#9.refmonth	0.820***	0.508***	1.129***	1.506***	0.644**
	(0.168)	(0.046)	(0.134)	(0.187)	(0.311)
1.pandemicyear#10.refmonth	0.629***	0.282***	0.751***	1.354***	0.583**
	(0.181)	(0.047)	(0.157)	(0.191)	(0.271)
1.pandemicyear#11.refmonth	0.483***	0.216***	0.581***	1.030***	0.739**
	(0.173)	(0.048)	(0.142)	(0.204)	(0.295)
1.pandemicyear#12.refmonth	0.688***	0.249***	0.850***	0.979***	0.641**
	(0.181)	(0.046)	(0.149)	(0.201)	(0.293)
1.pandemicyear#13.refmonth	0.314*	0.164***	0.431***	0.709***	0.214
	(0.160)	(0.047)	(0.164)	(0.192)	(0.307)
1.pandemicyear	-0.186	-0.0514	-0.0589	-0.207	-0.127
	(0.134)	(0.033)	(0.104)	(0.138)	(0.189)
1.refmonth	-0.415***	-0.149***	-0.126	-0.388***	-0.345**
	(0.138)	(0.034)	(0.107)	(0.133)	(0.151)
2.refmonth	-0.258**	-0.115***	-0.0394	-0.434***	-0.265
	(0.124)	(0.033)	(0.104)	(0.127)	(0.187)
3.refmonth	-0.0463	0.0263	0.0499	-0.0905	-0.178
	(0.127)	(0.032)	(0.104)	(0.139)	(0.181)
4.refmonth	-0.236**	-0.0226	-0.224**	-0.433***	-0.0946
	(0.112)	(0.034)	(0.109)	(0.145)	(0.203)
5.refmonth	0.0676	0.140***	0.139	-0.110	-0.0129
	(0.116)	(0.030)	(0.095)	(0.142)	(0.182)
6.refmonth			(omitted)		
7.refmonth	0.0146	-0.0157	0.119	-0.162	-0.0255
	(0.123)	(0.033)	(0.099)	(0.155)	(0.198)
8.refmonth	-0.0192	-0.0681**	-0.0705	-0.284*	-0.0560
	(0.123)	(0.034)	(0.104)	(0.151)	(0.223)
9.refmonth	-0.297**	-0.183***	-0.225**	-0.374***	-0.0563
	(0.118)	(0.031)	(0.101)	(0.129)	(0.200)
10.refmonth	-0.195	-0.0766**	-0.208*	-0.366***	-0.161
	(0.139)	(0.034)	(0.110)	(0.140)	(0.187)
11.refmonth	-0.0858	-0.0568	0.0358	-0.261*	-0.269
	(0.144)	(0.035)	(0.103)	(0.142)	(0.204)
12.refmonth	-0.306**	-0.216***	-0.287***	-0.493***	-0.384*
	(0.126)	(0.035)	(0.107)	(0.137)	(0.204)
13.refmonth	-0.293**	-0.274***	-0.181*	-0.406***	-0.354*
	(0.124)	(0.035)	(0.107)	(0.140)	(0.198)
_cons	7.029***	7.056***	6.739***	7.343***	6.972***
	(0.125)	(0.036)	(0.107)	(0.157)	(0.218)
N	17413	176374	23594	16237	5497

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-30: Regression results of household food evenness (using Berry Index) during the early pandemic response environment using split household sample based on census region

	Dependent variable: 24-category Berry Index of monthly aggregated household food purchases			
Independent	(1)	(2)	(3)	(4)
variable	Northeast	Midwest	South	West
1.pandemicyear#1.refmonth	-0.00344*	-0.00283*	-0.00385***	-0.000607
	(0.002)	(0.002)	(0.001)	(0.002)
1.pandemicyear#2.refmonth	-0.00511**	0.00102	-0.00316**	-0.00185
	(0.002)	(0.001)	(0.001)	(0.002)
1.pandemicyear#3.refmonth	-0.0000259	-0.0000773	-0.00327**	0.00107
	(0.002)	(0.002)	(0.001)	(0.002)
1.pandemicyear#4.refmonth	-0.000776	0.000757	-0.00370**	-0.00413**
	(0.002)	(0.002)	(0.001)	(0.002)
1.pandemicyear#5.refmonth	-0.000886	0.000689	-0.00386***	-0.000201
	(0.002)	(0.002)	(0.001)	(0.002)
1.pandemicyear#6.refmonth			(omitted)	
1.pandemicyear#7.refmonth	0.0178***	0.0175***	0.0178***	0.0183***
	(0.002)	(0.002)	(0.001)	(0.002)
1.pandemicyear#8.refmonth	0.00749***	0.0126***	0.0159***	0.0157***
	(0.002)	(0.002)	(0.002)	(0.002)
1.pandemicyear#9.refmonth	0.0147***	0.0188***	0.0173***	0.0151***
	(0.002)	(0.002)	(0.002)	(0.002)
1.pandemicyear#10.refmonth	0.0123***	0.0108***	0.0103***	0.0135***
	(0.002)	(0.002)	(0.002)	(0.002)
1.pandemicyear#11.refmonth	0.00916***	0.00727***	0.00831***	0.0106***
	(0.002)	(0.001)	(0.001)	(0.002)
1.pandemicyear#12.refmonth	0.00757***	0.00925***	0.00933***	0.0106***
	(0.003)	(0.002)	(0.002)	(0.002)
1.pandemicyear#13.refmonth	0.00538**	0.00555***	0.00707***	0.0104***
	(0.002)	(0.002)	(0.002)	(0.002)
1.pandemicyear	-0.00303**	-0.00376***	-0.000774	-0.00224**
	(0.002)	(0.001)	(0.001)	(0.001)
1.refmonth	-0.00422***	-0.00345***	0.00111	-0.00365***
	(0.001)	(0.001)	(0.001)	(0.001)
2.refmonth	0.000501	-0.00000935	0.00468***	0.000364
	(0.001)	(0.001)	(0.001)	(0.001)
3.refmonth	0.00319**	0.00640***	0.00822***	0.00477***
	(0.002)	(0.001)	(0.001)	(0.001)
4.refmonth	0.00184	0.00328***	0.00547***	0.00397***
	(0.001)	(0.001)	(0.001)	(0.001)
5.refmonth	0.00442***	0.00349***	0.00664***	0.00228*
	(0.001)	(0.001)	(0.001)	(0.001)
6.refmonth			(omitted)	
7.refmonth	-0.00251	-0.00257**	-0.00107	-0.00237*
	(0.002)	(0.001)	(0.001)	(0.001)
8.refmonth	-0.00207	-0.00211**	-0.000412	-0.00445***
	(0.001)	(0.001)	(0.001)	(0.001)
9.refmonth	-0.00749***	-0.00933***	-0.00633***	-0.00654***
	(0.001)	(0.001)	(0.001)	(0.001)
10.refmonth	-0.0112***	-0.00960***	-0.00561***	-0.00850***
	(0.002)	(0.001)	(0.001)	(0.001)
11.refmonth	-0.00760***	-0.00940***	-0.00474***	-0.00631***
	(0.001)	(0.001)	(0.001)	(0.002)
12.refmonth	-0.0125***	-0.0127***	-0.00758***	-0.00993***
	(0.002)	(0.001)	(0.001)	(0.001)
13.refmonth	-0.0114***	-0.00976***	-0.00519***	-0.00896***
	(0.002)	(0.001)	(0.001)	(0.001)
_cons	0.827***	0.824***	0.818***	0.820***
	(0.002)	(0.001)	(0.001)	(0.003)
N	187382	277992	406952	208728

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-31: Regression results of household food evenness (using Berry Index) during the early pandemic response environment using split household sample based on presence of school-age children

	Dependent variable: USDA Score1 of monthly aggregated household food purchases	
Independent variable	(1) With school-age children	(2) No school-age children
1.pandemicyear#1.refmonth	-0.0725	0.0433**
	(0.047)	(0.019)
1.pandemicyear#2.refmonth	-0.0161	-0.0118
	(0.048)	(0.018)
1.pandemicyear#3.refmonth	-0.0266	0.0576***
	(0.047)	(0.018)
1.pandemicyear#4.refmonth	-0.0928**	-0.0169
	(0.047)	(0.018)
1.pandemicyear#5.refmonth	0.0240	-0.00686
	(0.045)	(0.018)
1.pandemicyear#6.refmonth	(omitted)	
1.pandemicyear#7.refmonth	0.519***	0.414***
	(0.050)	(0.018)
1.pandemicyear#8.refmonth	0.519***	0.397***
	(0.052)	(0.019)
1.pandemicyear#9.refmonth	0.546***	0.512***
	(0.052)	(0.019)
1.pandemicyear#10.refmonth	0.397***	0.326***
	(0.049)	(0.020)
1.pandemicyear#11.refmonth	0.347***	0.213***
	(0.054)	(0.019)
1.pandemicyear#12.refmonth	0.318***	0.257***
	(0.050)	(0.019)
1.pandemicyear#13.refmonth	0.151***	0.194***
	(0.051)	(0.020)
1.pandemicyear	-0.0664*	-0.100***
	(0.036)	(0.014)
1.refmonth	-0.135***	-0.179***
	(0.034)	(0.014)
2.refmonth	-0.110***	-0.0922***
	(0.035)	(0.014)
3.refmonth	0.00606	0.0161
	(0.032)	(0.013)
4.refmonth	-0.0955***	-0.0527***
	(0.035)	(0.014)
5.refmonth	0.121***	0.0731***
	(0.033)	(0.013)
6.refmonth	(omitted)	
7.refmonth	-0.0507	-0.0119
	(0.035)	(0.012)
8.refmonth	-0.111***	-0.0476***
	(0.034)	(0.013)
9.refmonth	-0.132***	-0.132***
	(0.036)	(0.014)
10.refmonth	-0.153***	-0.0873***
	(0.035)	(0.014)
11.refmonth	-0.162***	-0.0223
	(0.038)	(0.015)
12.refmonth	-0.307***	-0.183***
	(0.036)	(0.015)
13.refmonth	-0.259***	-0.218***
	(0.038)	(0.015)
_cons	7.105***	6.424***
	(0.038)	(0.019)
N	166625	900313

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-32: Control year observation means of food healthfulness (USDA Score1) for household samples based on characteristics

Control year		USDAScore1
Census region		*Mean*
Northeast		6.59
Midwest		6.33
South		6.46
West		6.49
Children status		*Mean*
No children under 18		6.33
Any young children		7.25
Mix of school-age children		6.91
Only middle-school children or older		7.03
Household income	*Income range*	*Mean*
Low	$29,999 and below	5.77
Low-Medium	$30,000-$59,999	6.28
Medium-High	$60,000-$99,999	6.65
High	$100,000 and above	6.94
Household race		*Mean*
Others		6.45
Hispanic		6.75
White		6.44
Black		6.29
Asian		6.76
Household income status		*Mean*
Single or no income		6.25
Dual income		7.00
Household vehicle ownership		*Mean*
No vehicle		6.43
Vehicle owner		6.50

Table C-33: Regression results of household food healthfulness (using USDA Score1) for Florida household sample around the early pandemic environment in 2020 and around Hurricane Irma 2017

	Dependent variable: USDA Score1 at monthly aggregation of household purchases	
Independent variable	(1) Pandemic 2020	(2) Hurricane Irma 2017
1.pandemicyear#1.refmonth	-0.0251	-0.200**
	(0.070)	(0.086)
1.pandemicyear#2.refmonth	-0.0930	-0.104
	(0.063)	(0.076)
1.pandemicyear#3.refmonth	-0.0168	-0.221**
	(0.049)	(0.092)
1.pandemicyear#4.refmonth	-0.0133	-0.101
	(0.072)	(0.074)
1.pandemicyear#5.refmonth	-0.0491	-0.0634
	(0.069)	(0.086)
1.pandemicyear#6.refmonth	(omitted)	
1.pandemicyear#7.refmonth	0.393***	-0.169**
	(0.064)	(0.083)
1.pandemicyear#8.refmonth	0.485***	-0.0383
	(0.069)	(0.094)
1.pandemicyear#9.refmonth	0.497***	-0.00913
	(0.063)	(0.082)
1.pandemicyear#10.refmonth	0.288***	-0.0269
	(0.067)	(0.081)
1.pandemicyear#11.refmonth	0.309***	-0.109
	(0.080)	(0.099)
1.pandemicyear#12.refmonth	0.299***	-0.262**
	(0.077)	(0.099)
1.pandemicyear#13.refmonth	0.178**	-0.115
	(0.070)	(0.085)
1.pandemicyear	-0.0612	0.110
	(0.051)	(0.070)
1.refmonth	0.0302	0.0381
	(0.048)	(0.056)
2.refmonth	0.0117	0.0366
	(0.053)	(0.051)
3.refmonth	0.0249	0.186***
	(0.036)	(0.054)
4.refmonth	-0.0931*	0.0994**
	(0.050)	(0.048)
5.refmonth	0.105**	0.132**
	(0.050)	(0.053)
6.refmonth	(omitted)	
7.refmonth	0.00670	0.0295
	(0.052)	(0.046)
8.refmonth	-0.00885	-0.0174
	(0.047)	(0.052)
9.refmonth	-0.0962**	0.0171
	(0.048)	(0.051)
10.refmonth	-0.0497	-0.112*
	(0.046)	(0.057)
11.refmonth	-0.0376	0.0580
	(0.061)	(0.053)
12.refmonth	-0.0940*	0.188***
	(0.056)	(0.067)
13.refmonth	-0.0119	0.107*
	(0.047)	(0.057)
_cons	6.715***	6.727***
	(0.048)	(0.056)
N	77917	60018

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-34: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 1: WHOLE GRAINS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0568	-0.0855**	0.135	-0.0485	0.121
	(0.095)	(0.033)	(0.097)	(0.147)	(0.192)
1.pandemicyear#2.refmonth	0.0944	-0.0672**	0.0934	0.0743	0.274
	(0.098)	(0.034)	(0.086)	(0.159)	(0.198)
1.pandemicyear#3.refmonth	-0.0136	-0.0278	0.00339	-0.335**	-0.102
	(0.085)	(0.034)	(0.095)	(0.154)	(0.211)
1.pandemicyear#4.refmonth	-0.0134	-0.0282	0.0585	0.112	0.259
	(0.100)	(0.035)	(0.101)	(0.161)	(0.210)
1.pandemicyear#5.refmonth	0.0262	-0.0669**	0.0928	-0.0394	-0.00841
	(0.086)	(0.032)	(0.093)	(0.145)	(0.224)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.243***	0.133***	0.252***	0.0526	0.0651
	(0.085)	(0.033)	(0.093)	(0.141)	(0.199)
1.pandemicyear#8.refmonth	0.0814	0.0991***	0.244***	0.174	0.0588
	(0.084)	(0.034)	(0.087)	(0.194)	(0.217)
1.pandemicyear#9.refmonth	0.361***	0.144***	0.234**	0.178	-0.124
	(0.100)	(0.036)	(0.107)	(0.157)	(0.214)
1.pandemicyear#10.refmonth	0.153	0.0930***	0.331***	-0.151	0.104
	(0.107)	(0.035)	(0.104)	(0.161)	(0.224)
1.pandemicyear#11.refmonth	0.183*	0.0396	0.273***	0.0803	0.126
	(0.096)	(0.035)	(0.092)	(0.143)	(0.207)
1.pandemicyear#12.refmonth	0.129	0.0270	0.171*	0.0417	-0.0867
	(0.095)	(0.033)	(0.093)	(0.143)	(0.220)
1.pandemicyear#13.refmonth	0.264***	0.0112	0.249***	0.129	-0.00611
	(0.098)	(0.035)	(0.096)	(0.158)	(0.213)
1.pandemicyear	-0.0245	0.0482*	-0.0835	0.0510	0.00540
	(0.069)	(0.025)	(0.068)	(0.111)	(0.149)
1.refmonth	-0.0672	0.0149	-0.115*	-0.00402	-0.156
	(0.069)	(0.024)	(0.067)	(0.109)	(0.143)
2.refmonth	-0.0405	0.00846	-0.123**	0.0125	0.0161
	(0.070)	(0.024)	(0.059)	(0.106)	(0.130)
3.refmonth	-0.0447	0.0415*	-0.0890	0.177*	0.0475
	(0.065)	(0.024)	(0.062)	(0.103)	(0.124)
4.refmonth	-0.0104	0.0394	0.0438	-0.0351	-0.110
	(0.071)	(0.026)	(0.069)	(0.123)	(0.136)
5.refmonth	-0.0611	-0.00462	-0.0398	0.0102	0.0938
	(0.062)	(0.024)	(0.062)	(0.116)	(0.153)
6.refmonth			(omitted)		
7.refmonth	-0.00826	-0.0206	-0.0901	0.0957	0.0276
	(0.060)	(0.025)	(0.064)	(0.094)	(0.148)
8.refmonth	0.0310	-0.00801	-0.0635	-0.0965	0.0739
	(0.063)	(0.026)	(0.061)	(0.135)	(0.140)
9.refmonth	-0.222***	-0.0130	-0.104	-0.0589	0.103
	(0.069)	(0.026)	(0.067)	(0.118)	(0.156)
10.refmonth	-0.0276	0.0151	-0.137**	0.123	-0.0590
	(0.073)	(0.025)	(0.069)	(0.115)	(0.168)
11.refmonth	-0.144**	0.0156	-0.115*	-0.0122	-0.0591
	(0.067)	(0.026)	(0.062)	(0.105)	(0.143)
12.refmonth	-0.0264	0.0239	-0.0567	-0.0483	0.101
	(0.067)	(0.026)	(0.062)	(0.111)	(0.143)
13.refmonth	-0.196***	0.0247	-0.114*	0.0536	0.121
	(0.070)	(0.027)	(0.064)	(0.104)	(0.145)
_cons	1.590***	1.437***	1.528***	1.980***	1.560***
	(0.056)	(0.020)	(0.049)	(0.084)	(0.113)
N	6740	37790	7221	3004	1351

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-35: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 2: NON-WHOLE GRAINS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.00760	-0.0394**	-0.0158	0.131*	0.232**
	(0.049)	(0.018)	(0.044)	(0.068)	(0.107)
1.pandemicyear#2.refmonth	-0.137***	-0.0314*	0.00758	0.0427	0.130
	(0.048)	(0.017)	(0.044)	(0.070)	(0.091)
1.pandemicyear#3.refmonth	-0.0496	0.00269	0.00182	0.0328	0.164*
	(0.046)	(0.018)	(0.042)	(0.065)	(0.085)
1.pandemicyear#4.refmonth	-0.0401	-0.00657	-0.00861	-0.0158	-0.0249
	(0.045)	(0.018)	(0.046)	(0.080)	(0.100)
1.pandemicyear#5.refmonth	-0.0368	-0.0565***	-0.0274	0.136**	0.0242
	(0.044)	(0.018)	(0.044)	(0.056)	(0.091)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.153***	0.118***	0.212***	0.257***	0.255***
	(0.048)	(0.017)	(0.045)	(0.064)	(0.096)
1.pandemicyear#8.refmonth	0.0318	0.0616***	0.184***	0.161**	0.194*
	(0.050)	(0.018)	(0.051)	(0.074)	(0.111)
1.pandemicyear#9.refmonth	0.111**	0.112***	0.190***	0.109*	0.289***
	(0.051)	(0.018)	(0.051)	(0.062)	(0.092)
1.pandemicyear#10.refmonth	0.174***	0.0770***	0.148***	0.203***	0.310***
	(0.049)	(0.019)	(0.051)	(0.067)	(0.111)
1.pandemicyear#11.refmonth	0.0665	0.0796***	0.0526	0.244***	0.186*
	(0.047)	(0.019)	(0.047)	(0.077)	(0.103)
1.pandemicyear#12.refmonth	0.0339	0.0584***	0.142***	0.278***	0.263**
	(0.048)	(0.019)	(0.048)	(0.070)	(0.109)
1.pandemicyear#13.refmonth	0.00181	0.00567	0.118**	0.140**	0.174
	(0.050)	(0.019)	(0.048)	(0.064)	(0.109)
1.pandemicyear	0.000908	0.00345	-0.0352	-0.0939**	-0.170**
	(0.035)	(0.013)	(0.035)	(0.044)	(0.074)
1.refmonth	-0.0223	-0.000710	-0.0147	-0.0910**	-0.158**
	(0.034)	(0.013)	(0.032)	(0.042)	(0.071)
2.refmonth	0.0532	-0.00618	-0.0365	-0.0473	-0.0629
	(0.035)	(0.012)	(0.033)	(0.044)	(0.068)
3.refmonth	0.0168	-0.0384***	-0.0673**	-0.113***	-0.0786
	(0.038)	(0.012)	(0.032)	(0.042)	(0.061)
4.refmonth	-0.0879**	-0.109***	-0.0831**	-0.0963**	-0.00410
	(0.035)	(0.013)	(0.036)	(0.041)	(0.059)
5.refmonth	0.0745**	0.0659***	0.0476	-0.0163	0.0171
	(0.036)	(0.012)	(0.031)	(0.039)	(0.058)
6.refmonth			(omitted)		
7.refmonth	-0.000237	-0.00339	0.00785	-0.0623	-0.0264
	(0.034)	(0.012)	(0.033)	(0.042)	(0.060)
8.refmonth	0.00659	-0.0578***	-0.0280	-0.108**	-0.124*
	(0.035)	(0.013)	(0.033)	(0.046)	(0.068)
9.refmonth	-0.0658	-0.0624***	-0.0679*	-0.0476	-0.164**
	(0.041)	(0.013)	(0.038)	(0.036)	(0.074)
10.refmonth	-0.112***	-0.0919***	-0.0919***	-0.178***	-0.237***
	(0.038)	(0.013)	(0.035)	(0.044)	(0.074)
11.refmonth	-0.111***	-0.112***	-0.0646*	-0.250***	-0.132*
	(0.033)	(0.013)	(0.036)	(0.049)	(0.068)
12.refmonth	-0.0501	-0.0824***	-0.107***	-0.174***	-0.215***
	(0.036)	(0.013)	(0.035)	(0.046)	(0.071)
13.refmonth	-0.000983	-0.00597	-0.0541	-0.0345	-0.150*
	(0.035)	(0.013)	(0.035)	(0.041)	(0.084)
_cons	4.139***	4.215***	4.018***	4.142***	4.135***
	(0.036)	(0.013)	(0.036)	(0.045)	(0.069)
N	18563	113434	18955	9506	4260

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-36: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 3: STARCHY VEGETABLES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.160**	-0.0157	-0.0328	0.0810	-0.0393
	(0.066)	(0.025)	(0.066)	(0.101)	(0.144)
1.pandemicyear#2.refmonth	-0.0426	-0.0333	0.0132	0.0177	0.0974
	(0.063)	(0.026)	(0.064)	(0.110)	(0.141)
1.pandemicyear#3.refmonth	-0.0890	-0.0179	0.0472	0.291***	-0.0825
	(0.061)	(0.026)	(0.067)	(0.108)	(0.131)
1.pandemicyear#4.refmonth	-0.103	-0.0420*	0.0230	-0.0166	0.0405
	(0.062)	(0.025)	(0.066)	(0.108)	(0.127)
1.pandemicyear#5.refmonth	-0.0470	0.000444	-0.0300	0.0800	-0.0000392
	(0.066)	(0.026)	(0.064)	(0.091)	(0.115)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.252***	0.195***	0.323***	0.316***	0.265**
	(0.058)	(0.026)	(0.068)	(0.113)	(0.126)
1.pandemicyear#8.refmonth	0.139**	0.241***	0.286***	0.237**	0.192
	(0.067)	(0.026)	(0.067)	(0.093)	(0.140)
1.pandemicyear#9.refmonth	0.160**	0.209***	0.319***	0.229**	0.332**
	(0.069)	(0.027)	(0.072)	(0.112)	(0.136)
1.pandemicyear#10.refmonth	0.0976	0.131***	0.237***	0.122	0.221
	(0.063)	(0.026)	(0.068)	(0.106)	(0.134)
1.pandemicyear#11.refmonth	0.0961	0.103***	0.0828	0.199*	0.111
	(0.067)	(0.026)	(0.074)	(0.114)	(0.145)
1.pandemicyear#12.refmonth	0.0766	0.0951***	0.155**	0.283***	0.109
	(0.068)	(0.027)	(0.067)	(0.105)	(0.149)
1.pandemicyear#13.refmonth	0.0293	0.136***	0.175**	0.362***	0.0939
	(0.066)	(0.027)	(0.069)	(0.097)	(0.167)
1.pandemicyear	0.0642	0.00281	-0.0138	-0.0577	-0.0296
	(0.046)	(0.019)	(0.047)	(0.074)	(0.094)
1.refmonth	0.0579	-0.0230	-0.0210	-0.0675	-0.0342
	(0.049)	(0.018)	(0.048)	(0.072)	(0.108)
2.refmonth	-0.00935	-0.00896	-0.0208	0.00214	-0.197**
	(0.046)	(0.019)	(0.049)	(0.087)	(0.092)
3.refmonth	0.0718	0.0183	-0.0515	-0.179*	-0.0133
	(0.046)	(0.019)	(0.052)	(0.092)	(0.101)
4.refmonth	0.0469	0.0196	-0.0524	0.0317	-0.00955
	(0.045)	(0.019)	(0.051)	(0.071)	(0.089)
5.refmonth	0.0276	0.0138	0.00556	-0.0160	0.0381
	(0.044)	(0.018)	(0.049)	(0.066)	(0.093)
6.refmonth			(omitted)		
7.refmonth	-0.0626	-0.0244	-0.127***	-0.0905	-0.0649
	(0.044)	(0.019)	(0.049)	(0.077)	(0.080)
8.refmonth	-0.00989	-0.0427**	-0.0500	0.0195	-0.0508
	(0.048)	(0.019)	(0.050)	(0.070)	(0.103)
9.refmonth	-0.0588	-0.0542***	-0.110**	-0.0412	-0.151*
	(0.049)	(0.020)	(0.054)	(0.088)	(0.090)
10.refmonth	0.0152	-0.0531***	-0.0677	-0.0567	-0.125
	(0.046)	(0.019)	(0.050)	(0.071)	(0.098)
11.refmonth	-0.0225	-0.0563***	-0.0461	-0.133	-0.0285
	(0.045)	(0.019)	(0.056)	(0.085)	(0.116)
12.refmonth	0.00505	-0.0170	-0.100**	-0.157**	-0.0761
	(0.048)	(0.019)	(0.047)	(0.077)	(0.110)
13.refmonth	0.0380	-0.0254	-0.0603	-0.0803	0.0815
	(0.049)	(0.020)	(0.053)	(0.072)	(0.116)
_cons	1.545***	1.647***	1.608***	1.498***	1.616***
	(0.039)	(0.016)	(0.040)	(0.056)	(0.074)
N	9013	64274	9545	3643	2082

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-37: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 4: GREEN VEGETABLES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0601	0.0345	0.0329	-0.0655	0.232
	(0.072)	(0.029)	(0.077)	(0.115)	(0.177)
1.pandemicyear#2.refmonth	0.0939	0.0328	0.0123	0.152	0.351**
	(0.075)	(0.031)	(0.074)	(0.108)	(0.166)
1.pandemicyear#3.refmonth	0.131*	0.0512*	0.0853	-0.0259	0.214
	(0.079)	(0.030)	(0.081)	(0.110)	(0.166)
1.pandemicyear#4.refmonth	0.0977	0.0286	0.0562	-0.00905	0.171
	(0.072)	(0.030)	(0.085)	(0.108)	(0.187)
1.pandemicyear#5.refmonth	0.0490	0.0437	0.0348	0.0388	0.122
	(0.069)	(0.028)	(0.079)	(0.111)	(0.171)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.0442	-0.00264	0.0911	0.104	0.142
	(0.073)	(0.028)	(0.081)	(0.114)	(0.178)
1.pandemicyear#8.refmonth	0.0341	0.0224	0.0895	0.0829	0.287
	(0.076)	(0.028)	(0.085)	(0.098)	(0.199)
1.pandemicyear#9.refmonth	0.0593	0.0751***	0.0910	0.0510	0.306
	(0.076)	(0.028)	(0.074)	(0.114)	(0.206)
1.pandemicyear#10.refmonth	0.141*	0.0942***	0.131	-0.0335	0.303*
	(0.080)	(0.029)	(0.081)	(0.100)	(0.169)
1.pandemicyear#11.refmonth	0.150**	0.0408	0.0182	0.291***	0.603***
	(0.076)	(0.030)	(0.084)	(0.112)	(0.176)
1.pandemicyear#12.refmonth	0.133*	0.0816***	0.0372	0.169	0.271
	(0.076)	(0.030)	(0.088)	(0.105)	(0.174)
1.pandemicyear#13.refmonth	0.163**	0.0483	0.114	0.207*	0.323*
	(0.076)	(0.029)	(0.090)	(0.111)	(0.166)
1.pandemicyear	-0.0845	-0.00771	-0.00414	0.00381	-0.158
	(0.051)	(0.022)	(0.060)	(0.083)	(0.129)
1.refmonth	-0.0888*	-0.0655***	-0.00680	-0.105	-0.171
	(0.051)	(0.021)	(0.059)	(0.080)	(0.125)
2.refmonth	-0.0827	-0.0523**	0.0296	-0.205***	-0.268**
	(0.053)	(0.021)	(0.053)	(0.073)	(0.126)
3.refmonth	-0.151***	-0.0808***	-0.0484	-0.0903	-0.120
	(0.058)	(0.021)	(0.056)	(0.079)	(0.125)
4.refmonth	-0.135**	-0.0432**	-0.0898	-0.0134	-0.206*
	(0.055)	(0.020)	(0.062)	(0.078)	(0.124)
5.refmonth	0.0236	0.0422**	0.0332	-0.0899	-0.0726
	(0.052)	(0.019)	(0.055)	(0.077)	(0.116)
6.refmonth			(omitted)		
7.refmonth	0.0217	0.0383**	0.0581	-0.0584	0.0287
	(0.051)	(0.019)	(0.061)	(0.074)	(0.110)
8.refmonth	-0.0101	0.0403**	-0.00842	0.00779	-0.0542
	(0.053)	(0.019)	(0.058)	(0.068)	(0.142)
9.refmonth	-0.000868	-0.00114	0.0258	0.0535	-0.0775
	(0.056)	(0.019)	(0.057)	(0.078)	(0.137)
10.refmonth	-0.0571	-0.0488**	-0.0301	-0.00791	-0.146
	(0.055)	(0.021)	(0.055)	(0.070)	(0.122)
11.refmonth	-0.0818	0.00286	0.0612	-0.144*	-0.294**
	(0.052)	(0.021)	(0.059)	(0.079)	(0.119)
12.refmonth	-0.0805	-0.0455**	0.0246	-0.110	-0.0805
	(0.054)	(0.021)	(0.062)	(0.084)	(0.120)
13.refmonth	-0.0847	0.0158	-0.0337	-0.0952	-0.111
	(0.055)	(0.021)	(0.062)	(0.072)	(0.116)
_cons	1.329***	1.308***	1.183***	1.397***	1.359***
	(0.045)	(0.016)	(0.048)	(0.063)	(0.097)
N	8070	56471	8126	4082	1844

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-38: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 5: ORANGE VEGETABLES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0646	-0.0305	-0.0742	0.0543	-0.113
	(0.071)	(0.028)	(0.064)	(0.103)	(0.164)
1.pandemicyear#2.refmonth	0.0438	-0.0458	-0.0359	0.0687	-0.215
	(0.065)	(0.028)	(0.069)	(0.093)	(0.158)
1.pandemicyear#3.refmonth	-0.0494	-0.0157	-0.0486	0.169	-0.125
	(0.070)	(0.027)	(0.071)	(0.104)	(0.149)
1.pandemicyear#4.refmonth	-0.00346	-0.0318	-0.0178	0.0339	0.0175
	(0.066)	(0.027)	(0.072)	(0.098)	(0.166)
1.pandemicyear#5.refmonth	-0.0590	-0.0314	0.0123	0.147	-0.140
	(0.072)	(0.029)	(0.070)	(0.098)	(0.134)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.272***	0.146***	0.140*	0.409***	0.132
	(0.070)	(0.028)	(0.075)	(0.104)	(0.147)
1.pandemicyear#8.refmonth	0.286***	0.147***	0.0683	0.333***	0.349**
	(0.067)	(0.027)	(0.067)	(0.104)	(0.142)
1.pandemicyear#9.refmonth	0.176**	0.114***	0.152**	0.454***	0.258*
	(0.070)	(0.027)	(0.074)	(0.113)	(0.140)
1.pandemicyear#10.refmonth	0.216***	0.138***	0.0612	0.515***	0.191
	(0.069)	(0.028)	(0.082)	(0.102)	(0.136)
1.pandemicyear#11.refmonth	0.170**	0.0826***	0.217***	0.435***	0.292*
	(0.075)	(0.029)	(0.077)	(0.102)	(0.150)
1.pandemicyear#12.refmonth	0.137**	0.102***	0.0847	0.381***	0.219
	(0.068)	(0.028)	(0.074)	(0.100)	(0.155)
1.pandemicyear#13.refmonth	0.191***	0.0261	0.109	0.418***	0.132
	(0.073)	(0.028)	(0.072)	(0.099)	(0.160)
1.pandemicyear	-0.0448	0.00939	0.0471	-0.166**	0.0890
	(0.049)	(0.020)	(0.052)	(0.076)	(0.101)
1.refmonth	-0.0636	-0.0206	0.0184	-0.0979	-0.181
	(0.052)	(0.020)	(0.054)	(0.072)	(0.119)
2.refmonth	0.00521	0.0590***	0.0460	0.0116	0.00364
	(0.046)	(0.021)	(0.053)	(0.072)	(0.108)
3.refmonth	0.0808	0.0698***	0.0598	-0.0249	-0.0145
	(0.050)	(0.020)	(0.052)	(0.072)	(0.108)
4.refmonth	0.00134	0.0193	0.00389	0.0433	-0.116
	(0.050)	(0.020)	(0.054)	(0.071)	(0.100)
5.refmonth	0.121**	0.118***	0.0444	-0.0126	-0.0963
	(0.052)	(0.020)	(0.050)	(0.067)	(0.097)
6.refmonth			(omitted)		
7.refmonth	-0.0317	0.0277	0.0611	-0.134*	-0.0326
	(0.048)	(0.020)	(0.057)	(0.074)	(0.100)
8.refmonth	-0.0477	-0.0149	0.0436	0.0106	-0.257***
	(0.054)	(0.020)	(0.052)	(0.065)	(0.098)
9.refmonth	-0.0463	-0.0216	0.0158	-0.136*	-0.235**
	(0.054)	(0.020)	(0.057)	(0.075)	(0.097)
10.refmonth	-0.110**	-0.102***	-0.0153	-0.224***	-0.252**
	(0.050)	(0.021)	(0.052)	(0.080)	(0.107)
11.refmonth	-0.128**	-0.112***	-0.139**	-0.251***	-0.288***
	(0.056)	(0.021)	(0.059)	(0.076)	(0.108)
12.refmonth	-0.0802	-0.148***	-0.0533	-0.209***	-0.275**
	(0.053)	(0.021)	(0.056)	(0.070)	(0.108)
13.refmonth	-0.166***	-0.0722***	-0.0588	-0.210***	-0.196*
	(0.056)	(0.021)	(0.052)	(0.069)	(0.110)
_cons	1.410***	1.453***	1.235***	1.459***	1.470***
	(0.043)	(0.018)	(0.044)	(0.057)	(0.086)
N	11688	77115	10733	5662	2624

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-39: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 6: LEGUMES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0585	-0.0252	-0.114	-0.0722	0.0114
	(0.090)	(0.034)	(0.085)	(0.133)	(0.187)
1.pandemicyear#2.refmonth	-0.0448	-0.0331	0.171**	-0.275*	-0.194
	(0.080)	(0.033)	(0.086)	(0.146)	(0.197)
1.pandemicyear#3.refmonth	-0.0527	-0.0554*	0.0348	-0.123	-0.0926
	(0.079)	(0.033)	(0.083)	(0.147)	(0.178)
1.pandemicyear#4.refmonth	-0.189**	-0.0373	-0.0382	-0.209	-0.230
	(0.082)	(0.033)	(0.086)	(0.140)	(0.228)
1.pandemicyear#5.refmonth	-0.109	-0.0689**	0.0244	-0.00699	-0.151
	(0.077)	(0.033)	(0.091)	(0.147)	(0.198)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.272***	0.195***	0.304***	0.290*	0.366**
	(0.082)	(0.034)	(0.083)	(0.159)	(0.184)
1.pandemicyear#8.refmonth	-0.0154	0.0742**	0.0860	-0.0956	-0.00915
	(0.079)	(0.034)	(0.088)	(0.146)	(0.197)
1.pandemicyear#9.refmonth	0.0794	0.0659**	0.150	0.172	-0.0396
	(0.081)	(0.034)	(0.097)	(0.145)	(0.203)
1.pandemicyear#10.refmonth	0.116	0.0127	0.0626	0.148	-0.168
	(0.091)	(0.034)	(0.102)	(0.157)	(0.210)
1.pandemicyear#11.refmonth	0.111	0.0398	0.0213	0.0291	-0.240
	(0.088)	(0.035)	(0.086)	(0.151)	(0.199)
1.pandemicyear#12.refmonth	0.111	0.0734**	0.0425	-0.111	-0.207
	(0.089)	(0.036)	(0.088)	(0.147)	(0.205)
1.pandemicyear#13.refmonth	0.0860	0.0181	0.175**	0.167	0.0866
	(0.086)	(0.034)	(0.084)	(0.139)	(0.208)
1.pandemicyear	0.0365	0.0224	0.00426	0.00849	0.156
	(0.061)	(0.024)	(0.062)	(0.110)	(0.140)
1.refmonth	-0.00525	-0.00230	0.0632	-0.0238	-0.0446
	(0.066)	(0.024)	(0.064)	(0.100)	(0.128)
2.refmonth	0.0175	0.0194	-0.0515	0.197*	0.107
	(0.062)	(0.024)	(0.061)	(0.102)	(0.140)
3.refmonth	0.0311	0.0644***	0.0418	0.0468	0.0936
	(0.059)	(0.025)	(0.066)	(0.102)	(0.143)
4.refmonth	0.101*	0.0450*	0.106*	0.272**	0.222*
	(0.055)	(0.023)	(0.064)	(0.116)	(0.131)
5.refmonth	0.0596	0.0151	0.00870	0.0900	0.0148
	(0.059)	(0.024)	(0.061)	(0.112)	(0.122)
6.refmonth			(omitted)		
7.refmonth	0.0536	-0.0118	0.0501	0.0480	-0.210
	(0.061)	(0.026)	(0.066)	(0.106)	(0.137)
8.refmonth	0.0211	0.00154	0.107	0.0417	-0.0358
	(0.059)	(0.024)	(0.067)	(0.105)	(0.138)
9.refmonth	-0.0183	-0.0319	0.124*	-0.0325	0.0556
	(0.064)	(0.025)	(0.072)	(0.114)	(0.144)
10.refmonth	-0.0606	0.00461	0.107	-0.0945	0.100
	(0.069)	(0.025)	(0.073)	(0.097)	(0.148)
11.refmonth	-0.0763	-0.0399	0.128**	-0.0494	0.0326
	(0.067)	(0.026)	(0.061)	(0.102)	(0.138)
12.refmonth	-0.0734	-0.0673**	0.0369	0.118	-0.0135
	(0.061)	(0.027)	(0.062)	(0.114)	(0.134)
13.refmonth	-0.0525	0.0110	0.0178	-0.0663	-0.116
	(0.064)	(0.025)	(0.060)	(0.112)	(0.154)
_cons	1.255***	1.237***	1.164***	1.179***	1.250***
	(0.049)	(0.020)	(0.054)	(0.077)	(0.106)
N	8686	55511	8751	3423	1899

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-40: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 7: OTHER VEGETABLES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0468	0.00833	0.0307	-0.0295	0.0672
	(0.064)	(0.027)	(0.065)	(0.084)	(0.140)
1.pandemicyear#2.refmonth	0.0865	-0.0479*	-0.0299	0.0292	-0.155
	(0.068)	(0.027)	(0.063)	(0.087)	(0.136)
1.pandemicyear#3.refmonth	0.0484	0.0217	0.0565	0.0443	-0.0476
	(0.057)	(0.025)	(0.068)	(0.098)	(0.153)
1.pandemicyear#4.refmonth	0.101	-0.0288	0.0146	-0.124	-0.0272
	(0.063)	(0.027)	(0.067)	(0.094)	(0.140)
1.pandemicyear#5.refmonth	-0.0159	0.00118	0.0144	0.0295	-0.0888
	(0.058)	(0.025)	(0.060)	(0.084)	(0.133)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.277***	0.119***	0.212***	0.240**	0.161
	(0.063)	(0.026)	(0.065)	(0.098)	(0.129)
1.pandemicyear#8.refmonth	0.202***	0.0932***	0.255***	0.248**	0.161
	(0.066)	(0.026)	(0.070)	(0.101)	(0.135)
1.pandemicyear#9.refmonth	0.211***	0.136***	0.229***	0.282***	-0.0166
	(0.060)	(0.026)	(0.068)	(0.087)	(0.145)
1.pandemicyear#10.refmonth	0.234***	0.123***	0.234***	0.328***	0.244*
	(0.063)	(0.026)	(0.068)	(0.088)	(0.129)
1.pandemicyear#11.refmonth	0.0922	0.155***	0.216***	0.362***	0.189
	(0.065)	(0.027)	(0.066)	(0.092)	(0.159)
1.pandemicyear#12.refmonth	0.235***	0.0910***	0.173***	0.294***	0.126
	(0.066)	(0.027)	(0.066)	(0.093)	(0.147)
1.pandemicyear#13.refmonth	0.202***	0.0360	0.144**	0.165*	0.0657
	(0.065)	(0.027)	(0.064)	(0.086)	(0.157)
1.pandemicyear	-0.0699	0.0173	-0.00116	-0.0335	0.0805
	(0.045)	(0.019)	(0.048)	(0.070)	(0.102)
1.refmonth	-0.0822*	-0.0778***	-0.0445	-0.0283	-0.220**
	(0.047)	(0.020)	(0.047)	(0.058)	(0.099)
2.refmonth	-0.0598	-0.0371**	-0.0295	-0.0382	-0.0628
	(0.046)	(0.019)	(0.046)	(0.056)	(0.096)
3.refmonth	-0.158***	-0.138***	-0.0693	-0.119*	-0.169*
	(0.041)	(0.018)	(0.046)	(0.070)	(0.102)
4.refmonth	-0.173***	-0.126***	-0.0446	0.0151	-0.188*
	(0.047)	(0.019)	(0.050)	(0.063)	(0.100)
5.refmonth	0.00640	0.0364**	0.0664	0.0206	-0.0442
	(0.045)	(0.018)	(0.045)	(0.066)	(0.083)
6.refmonth			(omitted)		
7.refmonth	-0.0715	-0.0252	0.00151	0.00450	-0.0337
	(0.045)	(0.019)	(0.047)	(0.064)	(0.086)
8.refmonth	-0.0520	-0.000645	-0.0464	0.0294	-0.0750
	(0.046)	(0.018)	(0.051)	(0.060)	(0.090)
9.refmonth	-0.0956**	0.0159	0.00781	0.000516	0.0227
	(0.048)	(0.018)	(0.046)	(0.070)	(0.099)
10.refmonth	-0.0933**	-0.0245	-0.0710	-0.155**	-0.124
	(0.047)	(0.019)	(0.047)	(0.061)	(0.088)
11.refmonth	-0.0470	-0.0738***	-0.0522	-0.145**	-0.141
	(0.048)	(0.020)	(0.048)	(0.065)	(0.103)
12.refmonth	-0.121**	-0.0629***	-0.00460	-0.162**	-0.0860
	(0.050)	(0.019)	(0.050)	(0.074)	(0.098)
13.refmonth	-0.123***	-0.0375**	-0.0108	-0.00150	0.0190
	(0.047)	(0.019)	(0.044)	(0.065)	(0.115)
_cons	2.328***	2.290***	2.125***	2.498***	2.271***
	(0.041)	(0.018)	(0.041)	(0.057)	(0.092)
N	14866	92846	14968	8069	3395

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-41: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 8: WHOLE FRUITS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.115*	-0.0114	-0.00296	0.0145	0.103
	(0.062)	(0.025)	(0.067)	(0.082)	(0.130)
1.pandemicyear#2.refmonth	0.0572	-0.0238	0.0236	-0.0749	0.0240
	(0.064)	(0.025)	(0.072)	(0.086)	(0.134)
1.pandemicyear#3.refmonth	0.0552	-0.0266	-0.0147	0.0655	-0.0115
	(0.063)	(0.026)	(0.069)	(0.081)	(0.131)
1.pandemicyear#4.refmonth	-0.104*	-0.0302	-0.0871	-0.0300	-0.0464
	(0.061)	(0.027)	(0.071)	(0.091)	(0.139)
1.pandemicyear#5.refmonth	0.0410	-0.0237	0.00607	0.00309	0.0862
	(0.058)	(0.025)	(0.068)	(0.091)	(0.126)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.142**	0.0908***	0.140**	0.0943	0.178
	(0.058)	(0.024)	(0.067)	(0.081)	(0.144)
1.pandemicyear#8.refmonth	0.223***	0.0823***	0.170**	0.263***	0.133
	(0.058)	(0.026)	(0.068)	(0.083)	(0.118)
1.pandemicyear#9.refmonth	0.286***	0.161***	0.260***	0.298***	0.258*
	(0.059)	(0.026)	(0.067)	(0.092)	(0.149)
1.pandemicyear#10.refmonth	0.256***	0.0940***	0.192***	0.392***	0.251*
	(0.058)	(0.026)	(0.066)	(0.095)	(0.134)
1.pandemicyear#11.refmonth	0.207***	0.124***	0.271***	0.319***	0.185
	(0.060)	(0.026)	(0.066)	(0.095)	(0.148)
1.pandemicyear#12.refmonth	0.305***	0.0937***	0.239***	0.346***	0.241
	(0.072)	(0.027)	(0.065)	(0.089)	(0.157)
1.pandemicyear#13.refmonth	0.272***	0.0351	0.108	0.210**	0.0327
	(0.070)	(0.026)	(0.069)	(0.084)	(0.148)
1.pandemicyear	-0.106**	-0.0236	-0.0246	-0.0491	-0.110
	(0.047)	(0.018)	(0.047)	(0.065)	(0.104)
1.refmonth	-0.0893**	-0.0595***	-0.121**	-0.150**	-0.0401
	(0.042)	(0.019)	(0.048)	(0.061)	(0.099)
2.refmonth	-0.147***	-0.101***	-0.140***	-0.0744	-0.0970
	(0.048)	(0.018)	(0.050)	(0.057)	(0.103)
3.refmonth	-0.186***	-0.130***	-0.142***	-0.121*	-0.0123
	(0.045)	(0.018)	(0.049)	(0.062)	(0.098)
4.refmonth	-0.186***	-0.204***	-0.141***	-0.152**	-0.118
	(0.045)	(0.019)	(0.051)	(0.064)	(0.096)
5.refmonth	-0.0507	0.0201	-0.0273	-0.0341	-0.139
	(0.047)	(0.018)	(0.052)	(0.055)	(0.089)
6.refmonth			(omitted)		
7.refmonth	-0.0362	-0.0171	-0.0671	-0.00141	-0.0133
	(0.044)	(0.018)	(0.047)	(0.057)	(0.095)
8.refmonth	-0.0482	-0.00641	0.00445	-0.126**	0.0188
	(0.042)	(0.019)	(0.048)	(0.059)	(0.092)
9.refmonth	-0.0395	0.0270	-0.0151	-0.0245	-0.0113
	(0.048)	(0.019)	(0.053)	(0.072)	(0.108)
10.refmonth	-0.0285	0.0564***	0.0306	-0.130**	0.0695
	(0.048)	(0.019)	(0.046)	(0.064)	(0.099)
11.refmonth	-0.0371	0.0329*	-0.0476	-0.0826	0.0696
	(0.051)	(0.019)	(0.053)	(0.063)	(0.104)
12.refmonth	-0.131**	-0.0145	-0.0275	-0.163**	0.00661
	(0.053)	(0.020)	(0.050)	(0.063)	(0.112)
13.refmonth	-0.109**	-0.0218	-0.0139	-0.0980	0.0585
	(0.054)	(0.019)	(0.046)	(0.062)	(0.108)
_cons	2.723***	2.630***	2.472***	2.875***	2.601***
	(0.044)	(0.019)	(0.047)	(0.057)	(0.098)
N	16096	97178	15478	8583	3550

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-42: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 9: JUICES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0190	-0.00501	0.0428	0.0528	0.159
	(0.063)	(0.030)	(0.067)	(0.115)	(0.156)
1.pandemicyear#2.refmonth	-0.0407	-0.0143	0.0541	-0.0347	0.147
	(0.066)	(0.029)	(0.064)	(0.105)	(0.133)
1.pandemicyear#3.refmonth	-0.0500	-0.00140	0.0316	0.0485	0.254*
	(0.067)	(0.029)	(0.066)	(0.091)	(0.135)
1.pandemicyear#4.refmonth	0.0348	-0.0429	0.0428	-0.113	0.171
	(0.062)	(0.028)	(0.062)	(0.104)	(0.157)
1.pandemicyear#5.refmonth	-0.0264	-0.0143	0.0544	0.0122	0.0671
	(0.061)	(0.027)	(0.061)	(0.117)	(0.133)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.107*	0.117***	0.193***	0.0978	0.274*
	(0.058)	(0.028)	(0.071)	(0.107)	(0.146)
1.pandemicyear#8.refmonth	0.0691	0.0420	0.323***	0.0518	0.313**
	(0.070)	(0.030)	(0.065)	(0.103)	(0.134)
1.pandemicyear#9.refmonth	0.187***	0.0736**	0.215***	0.0485	0.233
	(0.071)	(0.029)	(0.074)	(0.118)	(0.145)
1.pandemicyear#10.refmonth	0.169**	0.0944***	0.346***	0.201*	0.281*
	(0.066)	(0.029)	(0.062)	(0.109)	(0.153)
1.pandemicyear#11.refmonth	0.189***	0.0975***	0.298***	0.206**	0.323**
	(0.069)	(0.031)	(0.061)	(0.104)	(0.145)
1.pandemicyear#12.refmonth	0.136*	0.0582**	0.147**	0.0719	0.248*
	(0.077)	(0.029)	(0.071)	(0.107)	(0.149)
1.pandemicyear#13.refmonth	0.0779	-0.000270	0.199***	0.0507	0.287*
	(0.073)	(0.030)	(0.070)	(0.100)	(0.145)
1.pandemicyear	-0.0112	0.0145	-0.0829*	-0.0418	-0.181*
	(0.048)	(0.021)	(0.050)	(0.079)	(0.102)
1.refmonth	0.0300	0.0279	-0.0725*	-0.0644	-0.0615
	(0.047)	(0.020)	(0.042)	(0.080)	(0.109)
2.refmonth	-0.0300	-0.00575	-0.0386	-0.0612	-0.185*
	(0.046)	(0.020)	(0.044)	(0.083)	(0.099)
3.refmonth	-0.0167	-0.0636***	-0.0668	-0.119*	-0.227**
	(0.045)	(0.019)	(0.048)	(0.069)	(0.095)
4.refmonth	-0.106**	-0.0376*	-0.0328	-0.0321	-0.148
	(0.045)	(0.020)	(0.042)	(0.075)	(0.101)
5.refmonth	0.0227	0.0401**	0.0210	-0.0732	0.0200
	(0.046)	(0.018)	(0.045)	(0.082)	(0.099)
6.refmonth			(omitted)		
7.refmonth	0.0500	0.0111	0.0279	-0.0656	-0.00336
	(0.043)	(0.019)	(0.048)	(0.083)	(0.104)
8.refmonth	0.0391	0.0462**	-0.0830*	0.00900	-0.192*
	(0.047)	(0.020)	(0.045)	(0.078)	(0.103)
9.refmonth	-0.00868	0.0114	-0.0408	-0.0400	-0.210*
	(0.054)	(0.020)	(0.052)	(0.079)	(0.108)
10.refmonth	-0.0853*	0.00624	-0.0715	-0.136*	-0.120
	(0.046)	(0.020)	(0.047)	(0.075)	(0.117)
11.refmonth	-0.0709	0.0232	-0.0975**	-0.126*	-0.172
	(0.052)	(0.021)	(0.045)	(0.073)	(0.114)
12.refmonth	-0.0397	0.0408**	-0.0334	-0.00310	-0.127
	(0.049)	(0.020)	(0.049)	(0.087)	(0.110)
13.refmonth	-0.0137	0.0737***	-0.0583	-0.0643	-0.127
	(0.052)	(0.021)	(0.047)	(0.080)	(0.111)
_cons	2.184***	2.051***	2.316***	2.107***	2.271***
	(0.041)	(0.017)	(0.043)	(0.061)	(0.089)
N	12969	76903	14487	5871	2730

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-43: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 10: WHOLE MILK PRODUCTS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.00332	-0.0203	-0.0337	0.0151	-0.138
	(0.049)	(0.020)	(0.062)	(0.070)	(0.125)
1.pandemicyear#2.refmonth	-0.00542	-0.0265	0.00154	0.0243	-0.0631
	(0.056)	(0.020)	(0.057)	(0.072)	(0.106)
1.pandemicyear#3.refmonth	0.0718	-0.000736	-0.0342	0.0743	-0.0981
	(0.045)	(0.019)	(0.061)	(0.074)	(0.107)
1.pandemicyear#4.refmonth	-0.0148	-0.00723	0.0443	0.00916	-0.115
	(0.048)	(0.019)	(0.054)	(0.077)	(0.107)
1.pandemicyear#5.refmonth	-0.00199	-0.0133	-0.0104	0.0879	0.0193
	(0.047)	(0.020)	(0.050)	(0.070)	(0.099)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.101*	0.140***	0.181***	0.253***	0.0629
	(0.051)	(0.019)	(0.057)	(0.068)	(0.107)
1.pandemicyear#8.refmonth	0.175***	0.170***	0.190***	0.315***	0.173
	(0.051)	(0.021)	(0.056)	(0.078)	(0.123)
1.pandemicyear#9.refmonth	0.222***	0.256***	0.199***	0.325***	-0.0659
	(0.050)	(0.021)	(0.061)	(0.073)	(0.119)
1.pandemicyear#10.refmonth	0.199***	0.122***	0.210***	0.338***	0.125
	(0.052)	(0.021)	(0.059)	(0.088)	(0.109)
1.pandemicyear#11.refmonth	0.121*	0.111***	0.158***	0.260***	-0.00734
	(0.062)	(0.022)	(0.058)	(0.088)	(0.107)
1.pandemicyear#12.refmonth	0.108**	0.101***	0.202***	0.364***	0.0215
	(0.051)	(0.022)	(0.061)	(0.081)	(0.112)
1.pandemicyear#13.refmonth	0.210***	0.0798***	0.193***	0.148**	0.0302
	(0.055)	(0.021)	(0.060)	(0.071)	(0.111)
1.pandemicyear	-0.0164	0.00803	0.0198	-0.0598	0.0770
	(0.035)	(0.015)	(0.043)	(0.055)	(0.078)
1.refmonth	0.0289	0.00947	-0.0503	-0.00662	0.0213
	(0.034)	(0.014)	(0.044)	(0.055)	(0.090)
2.refmonth	-0.0563	-0.00841	-0.0989**	0.00466	-0.0322
	(0.035)	(0.014)	(0.039)	(0.054)	(0.077)
3.refmonth	-0.0928**	-0.0242*	-0.0103	-0.154***	-0.00216
	(0.036)	(0.013)	(0.039)	(0.054)	(0.067)
4.refmonth	-0.117***	-0.103***	-0.103**	-0.158***	-0.0585
	(0.037)	(0.014)	(0.040)	(0.060)	(0.071)
5.refmonth	0.0211	0.0346**	0.0226	-0.0700	-0.0733
	(0.035)	(0.014)	(0.039)	(0.044)	(0.075)
6.refmonth			(omitted)		
7.refmonth	0.00598	-0.00600	-0.00501	-0.0645	0.0667
	(0.034)	(0.014)	(0.040)	(0.052)	(0.089)
8.refmonth	0.0103	-0.0144	0.0117	-0.0364	-0.0524
	(0.034)	(0.014)	(0.041)	(0.047)	(0.090)
9.refmonth	0.00612	-0.0433***	0.0160	-0.00719	0.106
	(0.034)	(0.014)	(0.042)	(0.048)	(0.087)
10.refmonth	-0.0204	0.0147	0.0358	-0.0390	0.0126
	(0.038)	(0.015)	(0.042)	(0.059)	(0.075)
11.refmonth	0.00129	-0.00851	0.0118	-0.0882	0.105
	(0.042)	(0.015)	(0.039)	(0.071)	(0.081)
12.refmonth	-0.0260	-0.00321	-0.00829	-0.144**	0.00342
	(0.040)	(0.015)	(0.045)	(0.060)	(0.079)
13.refmonth	-0.0485	0.0120	0.00743	-0.000313	0.0176
	(0.038)	(0.014)	(0.041)	(0.053)	(0.079)
_cons	2.825***	2.966***	2.479***	2.893***	2.767***
	(0.030)	(0.014)	(0.041)	(0.050)	(0.078)
N	17069	107145	16510	8601	3870

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-44: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 11: LOW FAT MILK PRODUCTS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0404	0.0290	-0.0136	-0.0746	0.0773
	(0.087)	(0.039)	(0.095)	(0.140)	(0.181)
1.pandemicyear#2.refmonth	-0.00831	0.0316	-0.00259	-0.0780	0.266
	(0.092)	(0.038)	(0.094)	(0.162)	(0.175)
1.pandemicyear#3.refmonth	0.00738	0.0710**	-0.0348	0.0836	0.372**
	(0.075)	(0.036)	(0.091)	(0.145)	(0.165)
1.pandemicyear#4.refmonth	0.169*	0.0560	-0.0570	-0.0895	0.308
	(0.087)	(0.036)	(0.094)	(0.160)	(0.187)
1.pandemicyear#5.refmonth	0.0716	0.0149	0.0868	-0.182	0.313*
	(0.091)	(0.037)	(0.098)	(0.149)	(0.167)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.221**	0.128***	0.127	0.139	0.440**
	(0.089)	(0.036)	(0.089)	(0.137)	(0.172)
1.pandemicyear#8.refmonth	0.181**	0.0693*	0.0506	-0.105	0.535***
	(0.088)	(0.035)	(0.101)	(0.160)	(0.184)
1.pandemicyear#9.refmonth	0.216**	0.0788**	0.0193	-0.0722	0.0677
	(0.099)	(0.039)	(0.098)	(0.156)	(0.193)
1.pandemicyear#10.refmonth	0.145	0.0619	0.113	0.000347	0.363**
	(0.092)	(0.040)	(0.094)	(0.137)	(0.171)
1.pandemicyear#11.refmonth	0.296***	0.0831**	0.0558	-0.0499	0.166
	(0.094)	(0.040)	(0.109)	(0.166)	(0.218)
1.pandemicyear#12.refmonth	0.144	0.0800**	0.0424	-0.149	0.413**
	(0.095)	(0.037)	(0.122)	(0.159)	(0.204)
1.pandemicyear#13.refmonth	0.105	0.0340	-0.0354	-0.00935	0.365**
	(0.092)	(0.039)	(0.106)	(0.161)	(0.158)
1.pandemicyear	-0.0936	-0.0474*	0.0342	0.0636	-0.240*
	(0.067)	(0.028)	(0.069)	(0.108)	(0.134)
1.refmonth	-0.00781	-0.0136	-0.00422	0.137	-0.0614
	(0.069)	(0.027)	(0.069)	(0.099)	(0.134)
2.refmonth	-0.0410	-0.0208	-0.0223	-0.00195	-0.124
	(0.064)	(0.028)	(0.067)	(0.100)	(0.137)
3.refmonth	-0.0634	-0.0889***	-0.0113	-0.126	-0.267**
	(0.064)	(0.026)	(0.065)	(0.094)	(0.125)
4.refmonth	-0.148**	-0.0743***	0.0126	-0.0347	-0.183
	(0.068)	(0.026)	(0.065)	(0.105)	(0.137)
5.refmonth	-0.0345	0.00108	-0.0227	0.0353	-0.141
	(0.066)	(0.025)	(0.063)	(0.096)	(0.125)
6.refmonth			(omitted)		
7.refmonth	-0.0118	0.000827	0.0542	0.0269	-0.161
	(0.072)	(0.025)	(0.058)	(0.104)	(0.125)
8.refmonth	-0.0776	0.00645	0.00170	0.0168	-0.272**
	(0.065)	(0.024)	(0.065)	(0.117)	(0.128)
9.refmonth	-0.0711	0.00231	0.0257	0.0446	-0.00593
	(0.071)	(0.027)	(0.070)	(0.099)	(0.129)
10.refmonth	-0.0941	-0.00941	-0.0130	0.0491	-0.136
	(0.071)	(0.027)	(0.067)	(0.093)	(0.124)
11.refmonth	-0.217***	-0.0541*	-0.00108	0.0438	-0.0692
	(0.075)	(0.030)	(0.071)	(0.105)	(0.144)
12.refmonth	-0.0970	0.0141	0.0428	-0.00635	-0.0921
	(0.073)	(0.028)	(0.084)	(0.131)	(0.144)
13.refmonth	-0.0557	0.0115	0.0361	-0.0816	-0.252**
	(0.071)	(0.028)	(0.065)	(0.107)	(0.119)
_cons	1.839***	1.758***	1.534***	1.843***	1.862***
	(0.062)	(0.024)	(0.055)	(0.085)	(0.120)
N	7195	41916	6700	3226	1615

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-45: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 12: CHEESE

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0732	-0.00981	-0.0488	-0.0504	-0.142
	(0.059)	(0.022)	(0.066)	(0.082)	(0.117)
1.pandemicyear#2.refmonth	-0.0152	-0.0304	-0.101	0.116	-0.0483
	(0.061)	(0.022)	(0.063)	(0.081)	(0.121)
1.pandemicyear#3.refmonth	-0.0316	0.00520	0.00440	-0.0154	-0.0275
	(0.055)	(0.023)	(0.061)	(0.094)	(0.126)
1.pandemicyear#4.refmonth	0.00135	0.0319	-0.0748	-0.0332	0.0236
	(0.057)	(0.023)	(0.066)	(0.089)	(0.113)
1.pandemicyear#5.refmonth	-0.0119	0.00509	-0.0342	0.133	-0.126
	(0.057)	(0.021)	(0.067)	(0.091)	(0.125)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.205***	0.196***	0.194***	0.158*	0.0644
	(0.059)	(0.022)	(0.059)	(0.089)	(0.138)
1.pandemicyear#8.refmonth	0.204***	0.221***	0.207***	0.300***	0.281**
	(0.056)	(0.022)	(0.063)	(0.096)	(0.125)
1.pandemicyear#9.refmonth	0.254***	0.263***	0.193***	0.290***	0.178
	(0.061)	(0.022)	(0.063)	(0.084)	(0.128)
1.pandemicyear#10.refmonth	0.255***	0.156***	0.157**	0.262***	0.167
	(0.062)	(0.022)	(0.064)	(0.099)	(0.131)
1.pandemicyear#11.refmonth	0.140**	0.159***	0.154**	0.312***	0.0922
	(0.063)	(0.023)	(0.063)	(0.092)	(0.137)
1.pandemicyear#12.refmonth	0.110**	0.134***	0.109*	0.177*	0.0893
	(0.053)	(0.023)	(0.062)	(0.105)	(0.122)
1.pandemicyear#13.refmonth	0.111*	0.0958***	0.238***	0.127	0.161
	(0.059)	(0.022)	(0.064)	(0.088)	(0.134)
1.pandemicyear	0.0133	0.00758	0.0242	0.0164	0.0152
	(0.044)	(0.015)	(0.046)	(0.063)	(0.084)
1.refmonth	0.0483	-0.00840	0.0700	-0.0234	0.0119
	(0.039)	(0.015)	(0.046)	(0.064)	(0.085)
2.refmonth	-0.00881	0.0247	0.0889*	-0.0301	-0.0414
	(0.045)	(0.016)	(0.045)	(0.059)	(0.087)
3.refmonth	0.106**	0.0410**	0.178***	0.0475	0.0753
	(0.043)	(0.016)	(0.046)	(0.068)	(0.083)
4.refmonth	0.0229	0.0560***	0.175***	0.0743	0.0778
	(0.040)	(0.016)	(0.048)	(0.056)	(0.092)
5.refmonth	0.105**	0.0672***	0.129***	-0.0375	0.0991
	(0.042)	(0.016)	(0.047)	(0.061)	(0.085)
6.refmonth			(omitted)		
7.refmonth	0.0113	-0.00474	0.0242	0.00288	0.0144
	(0.042)	(0.016)	(0.042)	(0.062)	(0.088)
8.refmonth	0.0422	-0.0302*	0.109**	-0.0288	-0.112
	(0.042)	(0.016)	(0.045)	(0.061)	(0.085)
9.refmonth	-0.0588	-0.0756***	0.0303	-0.0394	-0.0186
	(0.049)	(0.016)	(0.043)	(0.061)	(0.086)
10.refmonth	-0.0734*	-0.0508***	0.00109	-0.104*	-0.0150
	(0.040)	(0.016)	(0.045)	(0.061)	(0.087)
11.refmonth	-0.0696	-0.0964***	0.0211	-0.116*	-0.132
	(0.044)	(0.017)	(0.045)	(0.066)	(0.087)
12.refmonth	-0.0254	-0.0517***	0.0333	-0.0468	-0.0572
	(0.043)	(0.016)	(0.045)	(0.073)	(0.086)
13.refmonth	-0.000192	-0.0217	-0.0531	-0.00370	-0.138
	(0.042)	(0.016)	(0.043)	(0.062)	(0.090)
_cons	2.535***	2.667***	2.101***	2.232***	2.527***
	(0.037)	(0.014)	(0.040)	(0.051)	(0.071)
N	15583	99835	14269	6831	3451

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-46: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 13: MEATS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.121*	0.0340	0.0309	0.0682	-0.000569
	(0.064)	(0.029)	(0.069)	(0.104)	(0.133)
1.pandemicyear#2.refmonth	-0.0350	0.0425	0.0444	-0.00410	0.0579
	(0.073)	(0.029)	(0.065)	(0.105)	(0.144)
1.pandemicyear#3.refmonth	-0.116*	0.0367	0.0439	0.102	-0.0817
	(0.060)	(0.028)	(0.075)	(0.100)	(0.140)
1.pandemicyear#4.refmonth	-0.125*	0.0117	-0.0140	0.0268	-0.140
	(0.068)	(0.028)	(0.069)	(0.126)	(0.152)
1.pandemicyear#5.refmonth	-0.0748	0.0189	0.0918	0.0475	-0.186
	(0.070)	(0.028)	(0.061)	(0.098)	(0.130)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.193**	0.227***	0.291***	0.247**	0.141
	(0.077)	(0.029)	(0.073)	(0.102)	(0.125)
1.pandemicyear#8.refmonth	0.227***	0.283***	0.317***	0.397***	0.223
	(0.080)	(0.030)	(0.069)	(0.121)	(0.137)
1.pandemicyear#9.refmonth	0.241***	0.331***	0.317***	0.497***	0.141
	(0.063)	(0.028)	(0.075)	(0.105)	(0.137)
1.pandemicyear#10.refmonth	0.199***	0.191***	0.224***	0.288***	0.169
	(0.074)	(0.030)	(0.076)	(0.106)	(0.158)
1.pandemicyear#11.refmonth	0.147**	0.219***	0.377***	0.332***	0.0886
	(0.071)	(0.027)	(0.072)	(0.101)	(0.150)
1.pandemicyear#12.refmonth	0.119*	0.195***	0.248***	0.438***	0.0710
	(0.072)	(0.029)	(0.077)	(0.093)	(0.151)
1.pandemicyear#13.refmonth	0.159**	0.108***	0.152**	0.428***	0.222
	(0.075)	(0.028)	(0.072)	(0.095)	(0.148)
1.pandemicyear	0.0309	-0.0291	-0.0323	-0.0192	0.0635
	(0.050)	(0.020)	(0.050)	(0.077)	(0.095)
1.refmonth	0.0557	-0.0373*	-0.0239	-0.0287	-0.0392
	(0.046)	(0.019)	(0.049)	(0.076)	(0.098)
2.refmonth	0.0255	-0.0419**	0.0304	0.0828	-0.131
	(0.049)	(0.020)	(0.045)	(0.071)	(0.102)
3.refmonth	0.0239	-0.0839***	-0.0101	-0.0101	0.0229
	(0.042)	(0.020)	(0.055)	(0.072)	(0.117)
4.refmonth	0.0610	0.000197	0.0626	0.0677	0.0433
	(0.049)	(0.021)	(0.049)	(0.083)	(0.118)
5.refmonth	0.0764	-0.00746	-0.0274	0.0281	0.0666
	(0.048)	(0.020)	(0.046)	(0.075)	(0.096)
6.refmonth			(omitted)		
7.refmonth	-0.0179	-0.00656	-0.0208	0.0166	-0.0501
	(0.052)	(0.019)	(0.050)	(0.079)	(0.105)
8.refmonth	0.0584	0.0153	0.0322	0.0434	-0.0985
	(0.048)	(0.019)	(0.054)	(0.079)	(0.105)
9.refmonth	0.0315	-0.0202	0.0164	-0.119	0.0560
	(0.044)	(0.019)	(0.054)	(0.081)	(0.103)
10.refmonth	0.0431	0.00510	0.0271	-0.0583	0.0607
	(0.046)	(0.020)	(0.050)	(0.077)	(0.116)
11.refmonth	0.0485	-0.0119	0.0144	-0.0787	0.0889
	(0.050)	(0.019)	(0.047)	(0.075)	(0.106)
12.refmonth	0.00737	-0.0350*	-0.0737	-0.110	0.0447
	(0.050)	(0.020)	(0.054)	(0.074)	(0.117)
13.refmonth	0.0132	-0.0103	0.0314	-0.109	-0.0892
	(0.050)	(0.020)	(0.055)	(0.073)	(0.117)
_cons	3.037***	2.987***	2.832***	3.070***	2.980***
	(0.037)	(0.017)	(0.042)	(0.066)	(0.097)
N	11983	73136	12079	6020	2616

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-47: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 14: POULTRY

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.00724	0.00111	-0.0589	0.0449	0.0833
	(0.069)	(0.031)	(0.073)	(0.112)	(0.187)
1.pandemicyear#2.refmonth	-0.0673	-0.0310	0.0478	-0.0854	-0.102
	(0.065)	(0.030)	(0.085)	(0.099)	(0.151)
1.pandemicyear#3.refmonth	-0.0746	-0.00125	0.0600	0.0162	0.0860
	(0.063)	(0.031)	(0.071)	(0.106)	(0.184)
1.pandemicyear#4.refmonth	-0.105	-0.0172	0.0147	-0.0627	-0.242
	(0.070)	(0.032)	(0.079)	(0.119)	(0.162)
1.pandemicyear#5.refmonth	0.0341	-0.0560*	0.0424	-0.0154	-0.0215
	(0.072)	(0.030)	(0.080)	(0.114)	(0.165)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.0976	0.115***	0.180**	-0.0198	0.0274
	(0.077)	(0.030)	(0.075)	(0.093)	(0.153)
1.pandemicyear#8.refmonth	0.141**	0.114***	0.240***	0.149	0.243
	(0.068)	(0.031)	(0.069)	(0.112)	(0.205)
1.pandemicyear#9.refmonth	0.141**	0.155***	0.154**	0.179**	0.0517
	(0.067)	(0.032)	(0.078)	(0.084)	(0.185)
1.pandemicyear#10.refmonth	0.153**	0.127***	0.168**	0.165	0.174
	(0.068)	(0.032)	(0.073)	(0.101)	(0.196)
1.pandemicyear#11.refmonth	0.0803	0.120***	0.179**	0.0698	0.0844
	(0.077)	(0.031)	(0.076)	(0.088)	(0.169)
1.pandemicyear#12.refmonth	0.0241	0.0778**	0.00940	-0.0153	0.0435
	(0.074)	(0.032)	(0.070)	(0.099)	(0.172)
1.pandemicyear#13.refmonth	0.141**	0.0825***	0.139*	-0.0274	0.163
	(0.070)	(0.032)	(0.071)	(0.108)	(0.187)
1.pandemicyear	0.00990	-0.00598	-0.0157	0.0519	0.0126
	(0.049)	(0.023)	(0.052)	(0.069)	(0.129)
1.refmonth	-0.0104	0.0202	0.0702	-0.0105	-0.0473
	(0.049)	(0.022)	(0.055)	(0.081)	(0.133)
2.refmonth	-0.00348	0.0694***	0.0474	0.172**	0.0571
	(0.046)	(0.022)	(0.057)	(0.076)	(0.115)
3.refmonth	0.130***	0.167***	0.146***	0.185**	0.163
	(0.047)	(0.023)	(0.050)	(0.085)	(0.139)
4.refmonth	-0.0567	-0.00405	0.0643	-0.0126	0.126
	(0.054)	(0.022)	(0.054)	(0.088)	(0.120)
5.refmonth	-0.0129	0.0964***	0.0154	0.0365	-0.0493
	(0.046)	(0.021)	(0.057)	(0.088)	(0.127)
6.refmonth			(omitted)		
7.refmonth	-0.0410	0.0289	0.00692	0.0458	0.0497
	(0.055)	(0.022)	(0.051)	(0.078)	(0.117)
8.refmonth	-0.0141	0.0292	-0.0277	-0.000233	-0.0688
	(0.049)	(0.022)	(0.048)	(0.080)	(0.143)
9.refmonth	-0.0181	0.0169	0.0130	-0.00350	0.125
	(0.047)	(0.023)	(0.056)	(0.066)	(0.134)
10.refmonth	-0.0848*	-0.00351	0.0123	-0.00502	-0.0688
	(0.050)	(0.023)	(0.049)	(0.080)	(0.127)
11.refmonth	-0.0285	-0.0184	-0.0392	0.0356	0.0512
	(0.054)	(0.023)	(0.052)	(0.077)	(0.130)
12.refmonth	-0.0574	0.0204	0.0511	-0.00731	-0.00403
	(0.049)	(0.022)	(0.048)	(0.085)	(0.120)
13.refmonth	-0.116**	0.0114	0.0206	0.0876	0.0454
	(0.049)	(0.021)	(0.050)	(0.080)	(0.138)
_cons	2.611***	2.461***	2.491***	2.487***	2.530***
	(0.043)	(0.018)	(0.037)	(0.069)	(0.118)
N	8763	50175	9049	4396	1806

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-48: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 15: FISH

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.00935	0.0730	0.0856	-0.149	-0.327
	(0.112)	(0.049)	(0.088)	(0.136)	(0.245)
1.pandemicyear#2.refmonth	-0.107	-0.0874*	0.119	-0.104	0.0768
	(0.118)	(0.045)	(0.096)	(0.127)	(0.231)
1.pandemicyear#3.refmonth	0.151	-0.0922**	0.0549	-0.322**	0.0864
	(0.109)	(0.044)	(0.095)	(0.158)	(0.262)
1.pandemicyear#4.refmonth	0.0514	-0.0962**	0.00492	-0.342***	0.433*
	(0.116)	(0.047)	(0.096)	(0.119)	(0.220)
1.pandemicyear#5.refmonth	0.00417	-0.114***	0.0501	-0.264**	-0.194
	(0.097)	(0.041)	(0.082)	(0.130)	(0.227)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.0724	-0.0591	0.198**	-0.152	0.183
	(0.099)	(0.040)	(0.088)	(0.125)	(0.228)
1.pandemicyear#8.refmonth	0.0174	0.0825*	0.125	-0.190	0.230
	(0.113)	(0.043)	(0.098)	(0.127)	(0.233)
1.pandemicyear#9.refmonth	0.355***	0.114***	0.391***	0.0192	0.428*
	(0.098)	(0.043)	(0.088)	(0.112)	(0.250)
1.pandemicyear#10.refmonth	0.221*	0.116***	0.294***	0.0839	-0.173
	(0.120)	(0.045)	(0.097)	(0.125)	(0.224)
1.pandemicyear#11.refmonth	0.153	0.107**	0.320***	-0.0225	0.104
	(0.109)	(0.044)	(0.094)	(0.136)	(0.201)
1.pandemicyear#12.refmonth	0.177	0.0667	0.286***	0.0771	-0.252
	(0.117)	(0.042)	(0.092)	(0.143)	(0.244)
1.pandemicyear#13.refmonth	0.0908	0.0349	0.273***	0.1000	0.165
	(0.117)	(0.043)	(0.094)	(0.130)	(0.206)
1.pandemicyear	0.0459	0.0976***	-0.0301	0.230**	0.0252
	(0.077)	(0.030)	(0.061)	(0.088)	(0.171)
1.refmonth	-0.136*	-0.226***	-0.139**	0.000112	-0.0259
	(0.079)	(0.036)	(0.068)	(0.102)	(0.165)
2.refmonth	-0.0814	-0.0829***	-0.225***	-0.0482	-0.356**
	(0.081)	(0.031)	(0.068)	(0.099)	(0.175)
3.refmonth	-0.208***	-0.0632**	-0.0699	0.165	-0.0539
	(0.077)	(0.031)	(0.069)	(0.106)	(0.167)
4.refmonth	-0.0118	0.0963***	-0.0141	0.202**	-0.229
	(0.082)	(0.033)	(0.064)	(0.093)	(0.160)
5.refmonth	-0.0573	-0.00423	-0.0706	0.106	0.0197
	(0.075)	(0.030)	(0.064)	(0.096)	(0.146)
6.refmonth			(omitted)		
7.refmonth	0.0601	0.0649**	-0.0639	0.199**	-0.180
	(0.071)	(0.029)	(0.066)	(0.097)	(0.150)
8.refmonth	0.0558	-0.0244	-0.0209	0.0867	-0.0984
	(0.074)	(0.031)	(0.069)	(0.093)	(0.144)
9.refmonth	-0.0969	0.0140	-0.102	0.174*	-0.141
	(0.071)	(0.032)	(0.066)	(0.089)	(0.161)
10.refmonth	-0.00816	-0.0406	-0.0920	-0.0714	0.0344
	(0.073)	(0.032)	(0.068)	(0.089)	(0.141)
11.refmonth	0.0165	-0.0105	-0.121*	0.128	0.000432
	(0.077)	(0.032)	(0.065)	(0.106)	(0.156)
12.refmonth	-0.0456	-0.0263	-0.150**	0.0356	0.196
	(0.085)	(0.029)	(0.066)	(0.105)	(0.144)
13.refmonth	-0.0247	-0.0363	-0.143**	0.0353	-0.268
	(0.074)	(0.031)	(0.064)	(0.092)	(0.173)
_cons	2.364***	2.158***	2.566***	2.594***	2.372***
	(0.056)	(0.024)	(0.049)	(0.078)	(0.128)
N	6608	37882	8351	4388	1518

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-49: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 16: PROCESSED MEATS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0317	0.0202	-0.0520	0.105	-0.144
	(0.059)	(0.024)	(0.064)	(0.098)	(0.135)
1.pandemicyear#2.refmonth	0.0753	-0.00636	0.0152	0.00653	-0.235*
	(0.066)	(0.025)	(0.069)	(0.089)	(0.133)
1.pandemicyear#3.refmonth	0.0744	-0.0126	-0.0173	0.106	-0.0539
	(0.064)	(0.025)	(0.060)	(0.077)	(0.117)
1.pandemicyear#4.refmonth	0.0714	-0.00576	-0.0436	-0.0564	-0.0874
	(0.065)	(0.024)	(0.064)	(0.095)	(0.133)
1.pandemicyear#5.refmonth	0.0829	-0.0162	-0.0287	0.117	-0.128
	(0.058)	(0.024)	(0.068)	(0.079)	(0.131)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.213***	0.196***	0.286***	0.290***	-0.0628
	(0.054)	(0.024)	(0.060)	(0.105)	(0.129)
1.pandemicyear#8.refmonth	0.252***	0.186***	0.275***	0.252***	0.142
	(0.062)	(0.025)	(0.059)	(0.093)	(0.140)
1.pandemicyear#9.refmonth	0.268***	0.170***	0.185***	0.248***	0.173
	(0.066)	(0.026)	(0.064)	(0.091)	(0.125)
1.pandemicyear#10.refmonth	0.139**	0.0760***	0.132**	0.228***	0.0418
	(0.068)	(0.026)	(0.064)	(0.083)	(0.118)
1.pandemicyear#11.refmonth	0.170**	0.127***	0.114*	0.0795	-0.0824
	(0.067)	(0.025)	(0.065)	(0.084)	(0.137)
1.pandemicyear#12.refmonth	0.187**	0.107***	0.125*	0.215**	-0.0990
	(0.078)	(0.025)	(0.065)	(0.102)	(0.145)
1.pandemicyear#13.refmonth	0.224***	0.102***	0.178***	0.150*	-0.0242
	(0.066)	(0.025)	(0.059)	(0.084)	(0.147)
1.pandemicyear	-0.0793	0.00120	0.0258	-0.0779	0.0960
	(0.049)	(0.018)	(0.045)	(0.059)	(0.099)
1.refmonth	-0.0346	-0.00615	-0.0199	0.00232	0.0752
	(0.045)	(0.017)	(0.045)	(0.068)	(0.104)
2.refmonth	-0.0410	0.0138	0.0101	-0.0278	0.105
	(0.049)	(0.018)	(0.047)	(0.068)	(0.095)
3.refmonth	-0.0671*	-0.0179	-0.0579	-0.108*	0.00915
	(0.039)	(0.017)	(0.045)	(0.064)	(0.087)
4.refmonth	-0.0301	0.00694	0.00795	0.0360	-0.00185
	(0.043)	(0.018)	(0.047)	(0.065)	(0.093)
5.refmonth	0.0104	0.0608***	0.0635	-0.0349	0.0381
	(0.042)	(0.017)	(0.045)	(0.062)	(0.093)
6.refmonth			(omitted)		
7.refmonth	0.0267	-0.00502	-0.0279	-0.0190	0.138
	(0.039)	(0.017)	(0.044)	(0.072)	(0.092)
8.refmonth	-0.0319	-0.0216	-0.0112	0.0362	0.0291
	(0.042)	(0.017)	(0.043)	(0.065)	(0.100)
9.refmonth	0.00227	0.0293*	0.0312	-0.0993	0.0130
	(0.048)	(0.016)	(0.043)	(0.067)	(0.088)
10.refmonth	0.0372	0.0375**	0.00945	-0.124**	0.0943
	(0.046)	(0.018)	(0.047)	(0.061)	(0.089)
11.refmonth	0.0386	0.0193	0.0238	0.0159	0.100
	(0.049)	(0.018)	(0.047)	(0.059)	(0.095)
12.refmonth	0.000944	0.0357**	0.0234	-0.0993	0.111
	(0.050)	(0.018)	(0.047)	(0.071)	(0.106)
13.refmonth	0.0129	0.0401**	-0.0180	0.0460	0.0500
	(0.042)	(0.017)	(0.046)	(0.060)	(0.105)
_cons	2.665***	2.675***	2.561***	2.582***	2.539***
	(0.038)	(0.015)	(0.036)	(0.052)	(0.085)
N	14687	92592	14704	6806	3257

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-50: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 17: NUTS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0269	-0.000928	-0.00929	0.122	-0.384*
	(0.111)	(0.037)	(0.090)	(0.174)	(0.208)
1.pandemicyear#2.refmonth	0.0387	-0.00734	0.155	0.245*	-0.178
	(0.098)	(0.035)	(0.105)	(0.139)	(0.203)
1.pandemicyear#3.refmonth	-0.0719	-0.0360	0.0573	-0.0220	0.0268
	(0.097)	(0.034)	(0.100)	(0.162)	(0.193)
1.pandemicyear#4.refmonth	0.0465	-0.00863	-0.0332	0.0740	0.0925
	(0.093)	(0.036)	(0.096)	(0.163)	(0.201)
1.pandemicyear#5.refmonth	0.00569	-0.0590*	0.0401	-0.0768	-0.0338
	(0.096)	(0.034)	(0.098)	(0.151)	(0.197)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.0270	0.104***	0.0217	0.191	0.0516
	(0.089)	(0.035)	(0.093)	(0.161)	(0.178)
1.pandemicyear#8.refmonth	0.183*	0.0383	0.0253	0.190	-0.00810
	(0.097)	(0.033)	(0.098)	(0.170)	(0.182)
1.pandemicyear#9.refmonth	0.0627	0.174***	0.170	0.168	0.191
	(0.101)	(0.035)	(0.104)	(0.149)	(0.186)
1.pandemicyear#10.refmonth	0.142	0.126***	0.167*	0.0901	-0.193
	(0.087)	(0.035)	(0.100)	(0.156)	(0.198)
1.pandemicyear#11.refmonth	0.0824	0.124***	0.193*	0.450***	-0.154
	(0.114)	(0.038)	(0.105)	(0.167)	(0.219)
1.pandemicyear#12.refmonth	-0.0378	0.105***	0.0761	0.245	0.0703
	(0.097)	(0.036)	(0.095)	(0.155)	(0.201)
1.pandemicyear#13.refmonth	0.0438	0.0971***	0.0672	0.325**	-0.0613
	(0.100)	(0.037)	(0.104)	(0.153)	(0.197)
1.pandemicyear	0.0490	-0.00463	0.0289	-0.154	0.00345
	(0.075)	(0.027)	(0.074)	(0.117)	(0.146)
1.refmonth	-0.0852	-0.0454*	-0.0580	-0.0754	0.230
	(0.069)	(0.026)	(0.069)	(0.114)	(0.139)
2.refmonth	-0.0940	0.00171	-0.110	-0.0780	0.0576
	(0.068)	(0.025)	(0.076)	(0.104)	(0.131)
3.refmonth	0.125**	0.0928***	0.0128	0.190*	0.166
	(0.063)	(0.024)	(0.078)	(0.110)	(0.140)
4.refmonth	-0.0496	0.0467*	0.0257	0.0527	-0.111
	(0.060)	(0.024)	(0.065)	(0.110)	(0.143)
5.refmonth	0.0349	0.0176	0.0390	0.147	0.0680
	(0.067)	(0.025)	(0.067)	(0.094)	(0.127)
6.refmonth			(omitted)		
7.refmonth	0.0235	-0.0117	0.00845	0.0128	0.00909
	(0.064)	(0.025)	(0.067)	(0.101)	(0.129)
8.refmonth	-0.0368	-0.0160	0.0458	0.0304	0.0686
	(0.065)	(0.024)	(0.065)	(0.101)	(0.118)
9.refmonth	0.0167	-0.0725***	-0.0373	-0.0638	-0.0102
	(0.070)	(0.025)	(0.073)	(0.101)	(0.144)
10.refmonth	-0.0836	-0.0729***	-0.0420	-0.0139	0.175
	(0.060)	(0.024)	(0.073)	(0.111)	(0.124)
11.refmonth	-0.0719	-0.0935***	-0.0684	-0.175	-0.00518
	(0.074)	(0.026)	(0.068)	(0.120)	(0.168)
12.refmonth	0.0198	-0.0653***	-0.0454	-0.0618	0.0376
	(0.062)	(0.025)	(0.064)	(0.113)	(0.135)
13.refmonth	-0.0444	-0.0565**	-0.0112	0.0164	0.124
	(0.066)	(0.026)	(0.069)	(0.095)	(0.141)
_cons	1.872***	1.930***	1.811***	2.022***	1.841***
	(0.052)	(0.021)	(0.058)	(0.076)	(0.106)
N	7278	50283	7338	3331	1748

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-51: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 18: EGGS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0103	-0.0354	-0.105*	-0.0955	-0.0545
	(0.058)	(0.025)	(0.057)	(0.094)	(0.137)
1.pandemicyear#2.refmonth	-0.0870	-0.0452*	-0.0534	-0.153*	0.102
	(0.060)	(0.024)	(0.058)	(0.089)	(0.138)
1.pandemicyear#3.refmonth	-0.0583	-0.0107	0.0282	-0.119	0.165
	(0.060)	(0.023)	(0.062)	(0.084)	(0.121)
1.pandemicyear#4.refmonth	-0.0124	0.0824***	0.0394	0.0334	0.00230
	(0.061)	(0.024)	(0.062)	(0.091)	(0.119)
1.pandemicyear#5.refmonth	-0.0833	0.0291	0.0609	0.00277	0.0823
	(0.057)	(0.023)	(0.057)	(0.093)	(0.127)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.261***	0.209***	0.114**	0.201**	0.261**
	(0.059)	(0.023)	(0.053)	(0.081)	(0.130)
1.pandemicyear#8.refmonth	0.384***	0.370***	0.334***	0.340***	0.474***
	(0.061)	(0.026)	(0.059)	(0.103)	(0.121)
1.pandemicyear#9.refmonth	0.467***	0.436***	0.422***	0.410***	0.484***
	(0.066)	(0.027)	(0.065)	(0.098)	(0.133)
1.pandemicyear#10.refmonth	0.479***	0.409***	0.268***	0.388***	0.496***
	(0.065)	(0.025)	(0.063)	(0.086)	(0.116)
1.pandemicyear#11.refmonth	0.341***	0.364***	0.284***	0.366***	0.475***
	(0.061)	(0.026)	(0.064)	(0.097)	(0.111)
1.pandemicyear#12.refmonth	0.249***	0.325***	0.303***	0.432***	0.368***
	(0.065)	(0.026)	(0.060)	(0.083)	(0.129)
1.pandemicyear#13.refmonth	0.301***	0.277***	0.230***	0.300***	0.411***
	(0.057)	(0.025)	(0.064)	(0.085)	(0.136)
1.pandemicyear	-0.0710*	-0.0949***	-0.0630	-0.0441	-0.204**
	(0.042)	(0.018)	(0.044)	(0.064)	(0.094)
1.refmonth	-0.0799**	-0.0163	0.0000322	-0.00858	-0.163*
	(0.038)	(0.018)	(0.038)	(0.066)	(0.091)
2.refmonth	-0.0164	0.0165	0.00378	-0.0172	-0.0904
	(0.042)	(0.017)	(0.040)	(0.058)	(0.099)
3.refmonth	0.0879**	0.127***	0.0943**	0.0641	0.0211
	(0.044)	(0.016)	(0.044)	(0.061)	(0.081)
4.refmonth	0.0795**	0.136***	0.108**	-0.0281	0.189**
	(0.040)	(0.017)	(0.043)	(0.062)	(0.096)
5.refmonth	0.0575	0.0104	-0.0239	-0.0231	-0.0810
	(0.043)	(0.016)	(0.040)	(0.061)	(0.081)
6.refmonth			(omitted)		
7.refmonth	-0.0592	-0.0624***	-0.0383	-0.0298	-0.0676
	(0.039)	(0.017)	(0.040)	(0.056)	(0.084)
8.refmonth	-0.0522	-0.0173	-0.0790**	-0.127**	-0.146*
	(0.037)	(0.018)	(0.037)	(0.061)	(0.080)
9.refmonth	-0.203***	-0.168***	-0.162***	-0.127*	-0.154*
	(0.041)	(0.019)	(0.044)	(0.067)	(0.089)
10.refmonth	-0.273***	-0.273***	-0.147***	-0.232***	-0.271***
	(0.046)	(0.019)	(0.045)	(0.061)	(0.098)
11.refmonth	-0.253***	-0.290***	-0.245***	-0.228***	-0.348***
	(0.041)	(0.019)	(0.048)	(0.070)	(0.083)
12.refmonth	-0.252***	-0.282***	-0.244***	-0.313***	-0.360***
	(0.045)	(0.019)	(0.046)	(0.066)	(0.092)
13.refmonth	-0.234***	-0.256***	-0.222***	-0.239***	-0.350***
	(0.044)	(0.018)	(0.045)	(0.061)	(0.087)
_cons	1.473***	1.234***	1.290***	1.543***	1.391***
	(0.038)	(0.018)	(0.042)	(0.062)	(0.089)
N	11571	67063	10855	5672	2353

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-52: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 19: CONDIMENTS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0415	-0.0374	-0.128**	-0.159	-0.271**
	(0.060)	(0.025)	(0.064)	(0.098)	(0.130)
1.pandemicyear#2.refmonth	-0.0668	-0.0110	-0.0401	-0.103	-0.0594
	(0.070)	(0.024)	(0.060)	(0.095)	(0.138)
1.pandemicyear#3.refmonth	-0.0499	-0.00176	-0.0787	-0.00703	-0.394***
	(0.067)	(0.023)	(0.063)	(0.093)	(0.136)
1.pandemicyear#4.refmonth	-0.0601	-0.00922	-0.149**	-0.163*	-0.313**
	(0.072)	(0.023)	(0.060)	(0.089)	(0.139)
1.pandemicyear#5.refmonth	0.0147	0.00616	-0.0967	0.0215	-0.304**
	(0.062)	(0.025)	(0.063)	(0.086)	(0.140)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.317***	0.234***	0.213***	0.295***	0.0650
	(0.069)	(0.026)	(0.062)	(0.102)	(0.128)
1.pandemicyear#8.refmonth	0.243***	0.296***	0.271***	0.300***	0.0591
	(0.071)	(0.024)	(0.062)	(0.096)	(0.137)
1.pandemicyear#9.refmonth	0.307***	0.284***	0.283***	0.349***	-0.167
	(0.064)	(0.024)	(0.062)	(0.089)	(0.146)
1.pandemicyear#10.refmonth	0.200***	0.226***	0.170***	0.222**	-0.0286
	(0.069)	(0.027)	(0.060)	(0.106)	(0.129)
1.pandemicyear#11.refmonth	0.177***	0.168***	0.171***	0.349***	-0.0567
	(0.066)	(0.026)	(0.064)	(0.105)	(0.130)
1.pandemicyear#12.refmonth	0.224***	0.209***	0.115	0.275***	-0.0711
	(0.071)	(0.026)	(0.070)	(0.100)	(0.134)
1.pandemicyear#13.refmonth	0.182***	0.154***	0.0925	0.290***	-0.0578
	(0.070)	(0.025)	(0.061)	(0.097)	(0.124)
1.pandemicyear	0.0147	-0.00574	0.104**	0.0486	0.210**
	(0.049)	(0.018)	(0.045)	(0.068)	(0.095)
1.refmonth	-0.0181	-0.0162	0.0211	0.0894	0.0121
	(0.040)	(0.018)	(0.046)	(0.069)	(0.105)
2.refmonth	-0.0125	-0.0236	-0.0121	0.0810	0.0194
	(0.046)	(0.017)	(0.048)	(0.074)	(0.102)
3.refmonth	0.0798*	0.0653***	0.0635	0.0156	0.251**
	(0.042)	(0.017)	(0.046)	(0.073)	(0.097)
4.refmonth	0.0576	0.0456***	0.0884*	0.188***	0.138
	(0.049)	(0.017)	(0.047)	(0.068)	(0.090)
5.refmonth	0.0657	0.0871***	0.138***	0.112*	0.210*
	(0.043)	(0.018)	(0.044)	(0.061)	(0.109)
6.refmonth			(omitted)		
7.refmonth	-0.0175	-0.0192	0.0211	0.0267	0.107
	(0.047)	(0.018)	(0.045)	(0.068)	(0.098)
8.refmonth	0.00605	-0.0306*	0.0165	0.0304	0.0426
	(0.048)	(0.017)	(0.047)	(0.064)	(0.107)
9.refmonth	-0.0252	-0.0116	0.0581	-0.0425	0.199*
	(0.043)	(0.017)	(0.045)	(0.066)	(0.110)
10.refmonth	-0.0538	-0.0553***	0.00494	0.0351	-0.00603
	(0.048)	(0.018)	(0.044)	(0.074)	(0.107)
11.refmonth	0.00244	-0.0384**	0.0145	-0.0419	0.0255
	(0.045)	(0.019)	(0.045)	(0.083)	(0.100)
12.refmonth	-0.0764*	-0.0788***	-0.0174	-0.0482	-0.0239
	(0.045)	(0.018)	(0.050)	(0.072)	(0.114)
13.refmonth	-0.0273	-0.0310*	0.0373	-0.0752	0.0164
	(0.044)	(0.019)	(0.047)	(0.070)	(0.093)
_cons	2.427***	2.502***	2.345***	2.273***	2.348***
	(0.037)	(0.015)	(0.038)	(0.061)	(0.089)
N	15991	101364	16548	7725	3687

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-53: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 20: COFFEE AND TEA

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0251	-0.0310	-0.0763	0.00881	-0.0576
	(0.084)	(0.030)	(0.081)	(0.126)	(0.169)
1.pandemicyear#2.refmonth	-0.114	-0.00338	-0.0366	0.0550	-0.0983
	(0.088)	(0.031)	(0.087)	(0.112)	(0.160)
1.pandemicyear#3.refmonth	0.0159	0.00135	-0.0734	-0.162	0.119
	(0.089)	(0.033)	(0.081)	(0.127)	(0.153)
1.pandemicyear#4.refmonth	-0.0457	0.0384	-0.00836	0.160	-0.0727
	(0.093)	(0.031)	(0.087)	(0.121)	(0.176)
1.pandemicyear#5.refmonth	-0.0641	-0.00206	-0.00624	0.119	0.0795
	(0.078)	(0.032)	(0.084)	(0.119)	(0.160)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.0814	0.0616*	0.0805	0.106	0.112
	(0.083)	(0.031)	(0.087)	(0.127)	(0.166)
1.pandemicyear#8.refmonth	0.0222	0.0804***	0.0303	0.0452	-0.0805
	(0.079)	(0.031)	(0.075)	(0.128)	(0.179)
1.pandemicyear#9.refmonth	0.0609	0.111***	0.174**	0.0713	0.0689
	(0.090)	(0.031)	(0.085)	(0.135)	(0.157)
1.pandemicyear#10.refmonth	-0.154*	0.0740**	0.0850	0.0311	0.0998
	(0.085)	(0.033)	(0.086)	(0.115)	(0.157)
1.pandemicyear#11.refmonth	0.103	0.0845***	0.0429	0.144	-0.0777
	(0.083)	(0.032)	(0.078)	(0.138)	(0.170)
1.pandemicyear#12.refmonth	0.0366	0.0607*	0.0683	0.228	-0.00359
	(0.088)	(0.032)	(0.082)	(0.153)	(0.165)
1.pandemicyear#13.refmonth	0.101	0.0765**	0.0813	0.254*	0.101
	(0.087)	(0.033)	(0.085)	(0.129)	(0.180)
1.pandemicyear	0.0553	0.0171	0.0455	-0.0126	0.0443
	(0.064)	(0.022)	(0.062)	(0.090)	(0.120)
1.refmonth	-0.0191	-0.00119	0.0336	-0.167**	0.0532
	(0.059)	(0.022)	(0.056)	(0.083)	(0.108)
2.refmonth	0.0592	-0.0188	-0.0722	-0.0217	0.00580
	(0.058)	(0.023)	(0.055)	(0.084)	(0.107)
3.refmonth	0.0107	-0.0234	-0.0253	0.0390	-0.102
	(0.062)	(0.023)	(0.053)	(0.080)	(0.105)
4.refmonth	0.000943	-0.0582**	-0.0437	-0.205**	-0.0362
	(0.066)	(0.025)	(0.066)	(0.095)	(0.113)
5.refmonth	0.0668	-0.0646***	-0.0374	-0.0967	-0.0495
	(0.060)	(0.024)	(0.058)	(0.076)	(0.123)
6.refmonth			(omitted)		
7.refmonth	-0.00875	-0.00962	-0.0428	-0.0687	0.00647
	(0.059)	(0.023)	(0.058)	(0.082)	(0.096)
8.refmonth	-0.0257	-0.0501**	-0.0546	-0.115	0.0908
	(0.057)	(0.022)	(0.055)	(0.085)	(0.105)
9.refmonth	0.0243	-0.0628***	-0.0515	-0.000116	0.0759
	(0.058)	(0.023)	(0.064)	(0.084)	(0.114)
10.refmonth	0.154***	-0.0535**	-0.0721	-0.0479	-0.00475
	(0.056)	(0.024)	(0.060)	(0.089)	(0.109)
11.refmonth	0.0178	-0.0991***	-0.0121	-0.0464	0.0714
	(0.059)	(0.024)	(0.058)	(0.080)	(0.110)
12.refmonth	-0.00493	-0.0595***	-0.0389	-0.171*	0.0564
	(0.059)	(0.023)	(0.060)	(0.091)	(0.113)
13.refmonth	-0.0427	-0.0335	-0.0740	-0.204**	-0.0414
	(0.062)	(0.024)	(0.060)	(0.099)	(0.107)
_cons	2.206***	2.354***	2.037***	2.295***	2.308***
	(0.047)	(0.019)	(0.053)	(0.076)	(0.098)
N	10236	64143	9956	4746	2567

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-54: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 21: SOFT DRINKS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.00117	-0.0554**	0.113	0.236*	0.149
	(0.074)	(0.028)	(0.074)	(0.128)	(0.140)
1.pandemicyear#2.refmonth	-0.0599	-0.0225	0.0665	0.0208	0.107
	(0.077)	(0.029)	(0.077)	(0.118)	(0.150)
1.pandemicyear#3.refmonth	0.0265	-0.00322	0.212***	0.247**	-0.00976
	(0.073)	(0.029)	(0.062)	(0.124)	(0.129)
1.pandemicyear#4.refmonth	-0.0968	-0.0240	0.0564	0.139	0.0997
	(0.069)	(0.029)	(0.076)	(0.117)	(0.163)
1.pandemicyear#5.refmonth	-0.123*	-0.0501*	-0.00686	0.0372	-0.134
	(0.067)	(0.029)	(0.067)	(0.120)	(0.148)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.0922	0.110***	0.308***	0.328***	0.190
	(0.076)	(0.030)	(0.073)	(0.109)	(0.151)
1.pandemicyear#8.refmonth	0.0455	0.127***	0.226***	0.263**	0.219
	(0.080)	(0.030)	(0.067)	(0.122)	(0.149)
1.pandemicyear#9.refmonth	0.196***	0.162***	0.251***	0.536***	0.268*
	(0.075)	(0.029)	(0.068)	(0.119)	(0.147)
1.pandemicyear#10.refmonth	0.154**	0.141***	0.307***	0.263**	-0.0174
	(0.077)	(0.029)	(0.076)	(0.114)	(0.144)
1.pandemicyear#11.refmonth	0.170**	0.0969***	0.307***	0.201	0.189
	(0.074)	(0.031)	(0.070)	(0.130)	(0.148)
1.pandemicyear#12.refmonth	0.203**	0.140***	0.396***	0.360***	0.0502
	(0.080)	(0.029)	(0.075)	(0.127)	(0.143)
1.pandemicyear#13.refmonth	0.0852	0.108***	0.200***	0.435***	0.203
	(0.073)	(0.029)	(0.074)	(0.116)	(0.151)
1.pandemicyear	0.0557	0.0508**	-0.0448	-0.153*	-0.0393
	(0.056)	(0.021)	(0.051)	(0.084)	(0.104)
1.refmonth	-0.0157	0.0351*	-0.0773	-0.0236	-0.0598
	(0.053)	(0.021)	(0.050)	(0.084)	(0.107)
2.refmonth	-0.0534	-0.00654	-0.0661	0.0791	-0.109
	(0.052)	(0.021)	(0.054)	(0.092)	(0.102)
3.refmonth	0.000374	-0.0162	-0.107**	-0.00379	0.0714
	(0.051)	(0.021)	(0.045)	(0.078)	(0.095)
4.refmonth	-0.0205	-0.0164	-0.0609	0.0502	-0.143
	(0.048)	(0.020)	(0.048)	(0.086)	(0.099)
5.refmonth	0.0269	0.0659***	0.0268	0.0498	0.0436
	(0.048)	(0.021)	(0.047)	(0.089)	(0.101)
6.refmonth			(omitted)		
7.refmonth	0.0702	0.0500**	-0.0282	0.0507	0.0746
	(0.048)	(0.022)	(0.054)	(0.082)	(0.100)
8.refmonth	0.0392	0.0510**	0.0314	0.00972	0.0533
	(0.049)	(0.021)	(0.051)	(0.075)	(0.117)
9.refmonth	-0.00119	0.0539**	0.0522	-0.0577	0.00294
	(0.052)	(0.021)	(0.049)	(0.098)	(0.100)
10.refmonth	-0.00154	0.0583***	0.0228	0.166*	0.0749
	(0.057)	(0.021)	(0.055)	(0.095)	(0.103)
11.refmonth	0.0168	0.102***	0.0448	0.206**	0.153
	(0.055)	(0.022)	(0.049)	(0.090)	(0.095)
12.refmonth	-0.00233	0.0322	-0.0338	-0.0337	0.136
	(0.048)	(0.020)	(0.055)	(0.085)	(0.105)
13.refmonth	0.0492	0.0809***	0.0520	0.0950	0.0808
	(0.051)	(0.022)	(0.050)	(0.078)	(0.109)
_cons	2.433***	2.510***	2.341***	2.200***	2.492***
	(0.044)	(0.021)	(0.043)	(0.071)	(0.091)
N	14301	89792	15030	6100	3427

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-55: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 22: SWEETS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0968	-0.0215	0.00870	0.0371	0.0181
	(0.061)	(0.026)	(0.061)	(0.099)	(0.152)
1.pandemicyear#2.refmonth	-0.125*	-0.0786***	0.106	0.101	0.0534
	(0.069)	(0.026)	(0.069)	(0.103)	(0.135)
1.pandemicyear#3.refmonth	0.0359	-0.0589**	-0.0632	0.0586	0.00156
	(0.061)	(0.025)	(0.059)	(0.108)	(0.143)
1.pandemicyear#4.refmonth	0.0738	0.0366	0.0244	0.0411	0.105
	(0.074)	(0.026)	(0.067)	(0.106)	(0.140)
1.pandemicyear#5.refmonth	-0.0249	-0.0466*	0.0980	0.0666	0.0604
	(0.067)	(0.025)	(0.061)	(0.106)	(0.133)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.277***	0.216***	0.268***	0.261**	0.316**
	(0.065)	(0.026)	(0.063)	(0.109)	(0.140)
1.pandemicyear#8.refmonth	0.182***	0.155***	0.282***	0.0784	0.201
	(0.063)	(0.026)	(0.064)	(0.108)	(0.146)
1.pandemicyear#9.refmonth	0.254***	0.221***	0.323***	0.236**	0.304**
	(0.062)	(0.027)	(0.065)	(0.109)	(0.129)
1.pandemicyear#10.refmonth	0.213***	0.178***	0.271***	0.296***	0.272*
	(0.068)	(0.026)	(0.061)	(0.097)	(0.143)
1.pandemicyear#11.refmonth	0.173***	0.148***	0.196***	0.196*	0.294**
	(0.065)	(0.025)	(0.063)	(0.105)	(0.135)
1.pandemicyear#12.refmonth	0.229***	0.117***	0.168**	0.296***	0.134
	(0.063)	(0.027)	(0.065)	(0.108)	(0.153)
1.pandemicyear#13.refmonth	0.225***	0.0975***	0.214***	0.260***	0.114
	(0.065)	(0.027)	(0.062)	(0.096)	(0.130)
1.pandemicyear	-0.0342	0.0118	-0.0292	-0.0722	-0.0662
	(0.046)	(0.019)	(0.044)	(0.077)	(0.093)
1.refmonth	-0.165***	-0.0500**	-0.117***	-0.0918	-0.0785
	(0.045)	(0.020)	(0.045)	(0.078)	(0.105)
2.refmonth	0.213***	0.162***	-0.00478	0.165**	0.176*
	(0.047)	(0.019)	(0.050)	(0.071)	(0.105)
3.refmonth	0.00839	0.108***	-0.0524	0.0489	-0.00149
	(0.046)	(0.019)	(0.042)	(0.074)	(0.111)
4.refmonth	0.146***	0.203***	0.0933**	0.257***	0.197*
	(0.051)	(0.019)	(0.043)	(0.071)	(0.106)
5.refmonth	-0.121***	-0.160***	-0.245***	-0.246***	-0.187*
	(0.046)	(0.019)	(0.043)	(0.073)	(0.107)
6.refmonth			(omitted)		
7.refmonth	-0.172***	-0.0852***	-0.213***	-0.264***	-0.147
	(0.049)	(0.018)	(0.046)	(0.088)	(0.103)
8.refmonth	0.0892*	0.157***	-0.00415	0.106	0.110
	(0.047)	(0.019)	(0.052)	(0.077)	(0.110)
9.refmonth	-0.190***	-0.224***	-0.229***	-0.229***	-0.212**
	(0.052)	(0.019)	(0.049)	(0.076)	(0.089)
10.refmonth	-0.238***	-0.245***	-0.274***	-0.313***	-0.244**
	(0.050)	(0.018)	(0.045)	(0.078)	(0.102)
11.refmonth	-0.210***	-0.253***	-0.268***	-0.293***	-0.286***
	(0.046)	(0.019)	(0.048)	(0.077)	(0.079)
12.refmonth	-0.271***	-0.234***	-0.299***	-0.371***	-0.235**
	(0.047)	(0.020)	(0.047)	(0.080)	(0.110)
13.refmonth	-0.237***	-0.203***	-0.224***	-0.243***	-0.191*
	(0.049)	(0.020)	(0.048)	(0.079)	(0.104)
_cons	2.481***	2.634***	2.393***	2.455***	2.605***
	(0.038)	(0.017)	(0.038)	(0.060)	(0.081)
N	15843	101455	16328	7388	3685

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-56: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 23: SOUPS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0878	-0.0637*	-0.0776	-0.0381	-0.00575
	(0.092)	(0.034)	(0.091)	(0.129)	(0.174)
1.pandemicyear#2.refmonth	0.0860	-0.0514	0.0375	0.149	-0.197
	(0.086)	(0.033)	(0.089)	(0.125)	(0.184)
1.pandemicyear#3.refmonth	0.0627	-0.0649**	0.0120	-0.194*	0.0760
	(0.083)	(0.031)	(0.079)	(0.109)	(0.180)
1.pandemicyear#4.refmonth	0.151	-0.0427	-0.00251	-0.0607	0.0486
	(0.093)	(0.033)	(0.089)	(0.114)	(0.162)
1.pandemicyear#5.refmonth	0.0996	-0.0696**	0.0959	0.0917	-0.173
	(0.083)	(0.032)	(0.087)	(0.119)	(0.187)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.495***	0.341***	0.315***	0.365***	0.235
	(0.096)	(0.035)	(0.089)	(0.133)	(0.190)
1.pandemicyear#8.refmonth	0.261***	0.173***	0.426***	0.0669	0.261
	(0.088)	(0.036)	(0.093)	(0.162)	(0.177)
1.pandemicyear#9.refmonth	0.321***	0.145***	0.303***	0.136	0.531***
	(0.098)	(0.036)	(0.099)	(0.117)	(0.192)
1.pandemicyear#10.refmonth	0.247**	0.104***	0.360***	0.134	0.243
	(0.098)	(0.036)	(0.097)	(0.131)	(0.207)
1.pandemicyear#11.refmonth	0.364***	0.107***	0.213**	-0.0613	-0.142
	(0.096)	(0.038)	(0.094)	(0.131)	(0.160)
1.pandemicyear#12.refmonth	0.284***	0.0613	0.343***	0.126	-0.106
	(0.098)	(0.039)	(0.103)	(0.145)	(0.194)
1.pandemicyear#13.refmonth	0.271***	0.00448	0.243***	0.0179	0.0294
	(0.096)	(0.037)	(0.089)	(0.129)	(0.201)
1.pandemicyear	-0.0872	0.0427*	-0.0445	0.0457	0.0242
	(0.065)	(0.024)	(0.063)	(0.092)	(0.129)
1.refmonth	-0.113*	0.0253	-0.0914	0.0861	0.0213
	(0.059)	(0.024)	(0.064)	(0.093)	(0.126)
2.refmonth	0.0606	0.121***	0.00732	-0.0155	0.266**
	(0.063)	(0.024)	(0.064)	(0.081)	(0.115)
3.refmonth	0.0170	0.104***	0.121**	0.171**	-0.0172
	(0.057)	(0.022)	(0.056)	(0.083)	(0.128)
4.refmonth	-0.0877	0.0197	0.00381	0.0394	-0.00473
	(0.065)	(0.023)	(0.066)	(0.094)	(0.123)
5.refmonth	0.00768	0.112***	-0.0611	-0.0617	0.194
	(0.058)	(0.023)	(0.060)	(0.087)	(0.118)
6.refmonth			(omitted)		
7.refmonth	-0.153**	-0.114***	-0.116*	-0.147	0.0253
	(0.064)	(0.024)	(0.060)	(0.098)	(0.128)
8.refmonth	-0.199***	-0.195***	-0.275***	-0.129	-0.107
	(0.067)	(0.025)	(0.064)	(0.113)	(0.135)
9.refmonth	-0.283***	-0.261***	-0.248***	-0.141	-0.286**
	(0.069)	(0.026)	(0.071)	(0.095)	(0.139)
10.refmonth	-0.295***	-0.319***	-0.307***	-0.241**	-0.332**
	(0.063)	(0.027)	(0.068)	(0.096)	(0.134)
11.refmonth	-0.405***	-0.329***	-0.238***	-0.135	-0.0228
	(0.068)	(0.027)	(0.066)	(0.100)	(0.123)
12.refmonth	-0.289***	-0.269***	-0.261***	-0.195*	-0.111
	(0.073)	(0.028)	(0.068)	(0.117)	(0.139)
13.refmonth	-0.273***	-0.151***	-0.186***	-0.0657	-0.126
	(0.071)	(0.027)	(0.061)	(0.094)	(0.137)
_cons	1.605***	1.594***	1.508***	1.768***	1.634***
	(0.048)	(0.019)	(0.049)	(0.074)	(0.097)
N	8789	58889	8792	4313	1999

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-57: Regression results of household spending during the early pandemic response environment among households with school-age children across race groups for CATEGORY 24: ENTREES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0475	0.0183	0.0401	0.0782	-0.0122
	(0.066)	(0.026)	(0.067)	(0.088)	(0.136)
1.pandemicyear#2.refmonth	-0.0880	-0.00679	0.00418	0.0710	-0.130
	(0.067)	(0.025)	(0.070)	(0.086)	(0.129)
1.pandemicyear#3.refmonth	-0.0972	0.0126	0.0504	0.114	-0.00164
	(0.071)	(0.025)	(0.069)	(0.091)	(0.123)
1.pandemicyear#4.refmonth	-0.0357	-0.00830	0.116	0.174*	-0.0919
	(0.066)	(0.025)	(0.074)	(0.093)	(0.127)
1.pandemicyear#5.refmonth	-0.119*	-0.0268	0.0309	0.0899	-0.135
	(0.063)	(0.024)	(0.066)	(0.081)	(0.127)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.175***	0.169***	0.306***	0.211**	-0.0492
	(0.067)	(0.025)	(0.067)	(0.083)	(0.136)
1.pandemicyear#8.refmonth	0.102	0.144***	0.388***	0.325***	0.0357
	(0.068)	(0.026)	(0.077)	(0.101)	(0.141)
1.pandemicyear#9.refmonth	0.166**	0.139***	0.257***	0.357***	0.129
	(0.068)	(0.026)	(0.076)	(0.096)	(0.119)
1.pandemicyear#10.refmonth	0.0644	0.0797***	0.226***	0.240**	0.0205
	(0.070)	(0.027)	(0.074)	(0.101)	(0.142)
1.pandemicyear#11.refmonth	0.0499	0.110***	0.210***	0.319***	0.0186
	(0.072)	(0.025)	(0.076)	(0.084)	(0.149)
1.pandemicyear#12.refmonth	-0.0182	0.0615**	0.249***	0.360***	-0.0413
	(0.073)	(0.026)	(0.075)	(0.087)	(0.132)
1.pandemicyear#13.refmonth	0.0405	0.0809***	0.163**	0.249**	0.206
	(0.075)	(0.026)	(0.074)	(0.104)	(0.147)
1.pandemicyear	0.0749	0.0341*	-0.0348	-0.110*	0.0713
	(0.050)	(0.018)	(0.054)	(0.060)	(0.099)
1.refmonth	-0.00664	-0.0560***	-0.0567	-0.0919	-0.0301
	(0.053)	(0.020)	(0.049)	(0.073)	(0.098)
2.refmonth	-0.0374	-0.0232	-0.0226	-0.0672	0.0363
	(0.053)	(0.018)	(0.050)	(0.064)	(0.091)
3.refmonth	-0.0300	-0.0991***	-0.145***	-0.194**	-0.171**
	(0.051)	(0.018)	(0.045)	(0.075)	(0.086)
4.refmonth	-0.0329	-0.0456**	-0.0891*	-0.241***	-0.0513
	(0.049)	(0.018)	(0.050)	(0.071)	(0.081)
5.refmonth	0.143***	0.0841***	0.0688	0.0191	0.0904
	(0.045)	(0.017)	(0.044)	(0.059)	(0.096)
6.refmonth			(omitted)		
7.refmonth	0.0122	0.00604	0.00201	-0.0343	0.0799
	(0.044)	(0.018)	(0.046)	(0.069)	(0.085)
8.refmonth	-0.0467	-0.0779***	-0.115**	-0.201***	-0.0926
	(0.048)	(0.019)	(0.051)	(0.074)	(0.090)
9.refmonth	-0.0885*	-0.0657***	-0.0820*	-0.192***	-0.00863
	(0.051)	(0.017)	(0.049)	(0.064)	(0.091)
10.refmonth	-0.0509	-0.0562***	-0.0226	-0.238***	-0.00177
	(0.051)	(0.019)	(0.053)	(0.073)	(0.093)
11.refmonth	-0.0156	-0.0983***	-0.0684	-0.218***	-0.00463
	(0.050)	(0.018)	(0.053)	(0.065)	(0.106)
12.refmonth	0.0395	-0.0482**	-0.0632	-0.243***	0.000665
	(0.049)	(0.020)	(0.053)	(0.068)	(0.098)
13.refmonth	0.0177	-0.0269	-0.0103	-0.111	-0.100
	(0.050)	(0.018)	(0.050)	(0.077)	(0.097)
_cons	2.881***	3.021***	2.870***	2.985***	2.964***
	(0.039)	(0.016)	(0.043)	(0.056)	(0.081)
N	13641	92031	14156	6855	3220

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-58: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 1: WHOLE GRAINS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0120	-0.0588***	0.0937**	-0.171	-0.0773
	(0.066)	(0.017)	(0.046)	(0.104)	(0.103)
1.pandemicyear#2.refmonth	-0.123*	-0.00164	0.0456	-0.287***	-0.0283
	(0.066)	(0.017)	(0.048)	(0.098)	(0.112)
1.pandemicyear#3.refmonth	-0.0765	0.00111	0.0704	-0.122	-0.0585
	(0.064)	(0.018)	(0.046)	(0.108)	(0.095)
1.pandemicyear#4.refmonth	-0.0525	0.00482	0.0348	-0.207**	0.0108
	(0.061)	(0.017)	(0.045)	(0.095)	(0.107)
1.pandemicyear#5.refmonth	0.0936	-0.0216	0.0199	-0.154	0.184**
	(0.061)	(0.017)	(0.044)	(0.097)	(0.091)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.205***	0.0618***	0.165***	-0.0309	0.0234
	(0.062)	(0.016)	(0.048)	(0.108)	(0.097)
1.pandemicyear#8.refmonth	0.193***	0.0925***	0.224***	-0.00163	0.150
	(0.062)	(0.017)	(0.045)	(0.112)	(0.102)
1.pandemicyear#9.refmonth	0.160**	0.103***	0.162***	-0.0324	0.0495
	(0.065)	(0.016)	(0.043)	(0.097)	(0.109)
1.pandemicyear#10.refmonth	0.150**	0.0674***	0.136***	-0.0653	0.244**
	(0.063)	(0.017)	(0.044)	(0.100)	(0.100)
1.pandemicyear#11.refmonth	0.0100	0.0850***	0.165***	-0.0922	0.0354
	(0.067)	(0.018)	(0.047)	(0.098)	(0.106)
1.pandemicyear#12.refmonth	0.0815	0.0282	0.202***	-0.0774	0.0293
	(0.064)	(0.017)	(0.045)	(0.097)	(0.108)
1.pandemicyear#13.refmonth	0.124*	0.0173	0.162***	-0.000551	0.0317
	(0.066)	(0.017)	(0.049)	(0.114)	(0.102)
1.pandemicyear	0.0175	0.0280**	-0.0370	0.163**	0.00727
	(0.046)	(0.012)	(0.033)	(0.065)	(0.075)
1.refmonth	0.00772	0.0192*	-0.0811**	0.0242	-0.00999
	(0.044)	(0.012)	(0.033)	(0.071)	(0.074)
2.refmonth	0.0677	0.0102	-0.0590*	0.0916	-0.0579
	(0.045)	(0.012)	(0.034)	(0.061)	(0.077)
3.refmonth	0.0802*	0.0623***	-0.0533	0.0629	-0.0191
	(0.046)	(0.012)	(0.033)	(0.078)	(0.068)
4.refmonth	0.0442	0.0632***	0.0323	0.116*	-0.00400
	(0.049)	(0.012)	(0.033)	(0.068)	(0.073)
5.refmonth	-0.0507	0.00750	-0.0316	-0.0531	-0.0998
	(0.047)	(0.012)	(0.030)	(0.066)	(0.069)
6.refmonth			(omitted)		
7.refmonth	-0.0374	0.0135	-0.0190	0.0687	0.0720
	(0.050)	(0.012)	(0.031)	(0.077)	(0.073)
8.refmonth	-0.0176	0.00193	-0.0582*	0.0124	-0.0993
	(0.044)	(0.012)	(0.032)	(0.083)	(0.080)
9.refmonth	-0.00661	0.000297	-0.0231	0.101	-0.0203
	(0.046)	(0.012)	(0.031)	(0.071)	(0.077)
10.refmonth	-0.00668	0.0252**	-0.0319	0.0451	-0.173**
	(0.052)	(0.012)	(0.031)	(0.072)	(0.071)
11.refmonth	-0.0191	-0.0197	-0.0468	0.0361	-0.0938
	(0.048)	(0.013)	(0.035)	(0.064)	(0.078)
12.refmonth	-0.0437	0.0121	-0.0873***	-0.00579	-0.0792
	(0.049)	(0.012)	(0.032)	(0.070)	(0.077)
13.refmonth	-0.0334	0.00414	-0.0349	-0.0519	0.0148
	(0.050)	(0.012)	(0.035)	(0.076)	(0.072)
_cons	1.411***	1.345***	1.388***	1.840***	1.497***
	(0.042)	(0.010)	(0.026)	(0.052)	(0.058)
N	13964	183565	29654	6634	5912

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-59: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 2: NON-WHOLE GRAINS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0225	-0.0186**	0.00442	-0.00700	0.0405
	(0.028)	(0.008)	(0.025)	(0.042)	(0.041)
1.pandemicyear#2.refmonth	0.0277	-0.0165**	0.0206	0.00933	0.118***
	(0.029)	(0.008)	(0.023)	(0.048)	(0.045)
1.pandemicyear#3.refmonth	-0.00552	-0.0134*	-0.00325	0.0347	0.0888**
	(0.028)	(0.007)	(0.022)	(0.054)	(0.045)
1.pandemicyear#4.refmonth	-0.0671**	-0.0119	0.00645	-0.0410	0.106**
	(0.029)	(0.008)	(0.023)	(0.044)	(0.045)
1.pandemicyear#5.refmonth	-0.00380	-0.0266***	-0.0411**	0.0180	-0.0111
	(0.028)	(0.007)	(0.021)	(0.044)	(0.044)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.164***	0.129***	0.143***	0.0925**	0.221***
	(0.031)	(0.007)	(0.023)	(0.038)	(0.043)
1.pandemicyear#8.refmonth	0.0996***	0.0325***	0.112***	-0.0155	0.141***
	(0.029)	(0.008)	(0.025)	(0.044)	(0.049)
1.pandemicyear#9.refmonth	0.192***	0.133***	0.155***	0.142***	0.216***
	(0.031)	(0.007)	(0.025)	(0.046)	(0.049)
1.pandemicyear#10.refmonth	0.111***	0.0852***	0.0879***	0.139***	0.134***
	(0.031)	(0.008)	(0.023)	(0.038)	(0.046)
1.pandemicyear#11.refmonth	0.0989***	0.0794***	0.0684**	0.110***	0.132***
	(0.032)	(0.008)	(0.027)	(0.037)	(0.047)
1.pandemicyear#12.refmonth	0.0779***	0.0711***	0.0839***	0.0917**	0.164***
	(0.030)	(0.008)	(0.025)	(0.037)	(0.047)
1.pandemicyear#13.refmonth	0.0965***	0.0594***	0.0559**	0.0980**	0.110**
	(0.034)	(0.008)	(0.023)	(0.041)	(0.046)
1.pandemicyear	-0.00458	0.0101*	0.00404	0.000724	-0.0597*
	(0.021)	(0.006)	(0.017)	(0.031)	(0.033)
1.refmonth	-0.0264	-0.0110*	-0.0228	-0.0376	-0.0425
	(0.021)	(0.006)	(0.017)	(0.028)	(0.030)
2.refmonth	-0.0706***	0.0162***	-0.0234	0.00490	-0.0962***
	(0.021)	(0.006)	(0.017)	(0.031)	(0.031)
3.refmonth	-0.000747	0.0510***	0.0261*	-0.0280	-0.0116
	(0.021)	(0.005)	(0.016)	(0.031)	(0.030)
4.refmonth	-0.00628	-0.00104	-0.00470	0.0340	-0.0718**
	(0.022)	(0.006)	(0.017)	(0.031)	(0.032)
5.refmonth	-0.0168	0.00462	0.0327**	-0.0406	-0.0507*
	(0.019)	(0.005)	(0.015)	(0.028)	(0.031)
6.refmonth			(omitted)		
7.refmonth	-0.00493	0.00211	0.0305**	0.0272	-0.0752**
	(0.021)	(0.006)	(0.015)	(0.028)	(0.030)
8.refmonth	-0.0597***	-0.00821	-0.00565	0.00101	-0.0648**
	(0.021)	(0.006)	(0.016)	(0.029)	(0.029)
9.refmonth	-0.0671***	-0.0308***	-0.0196	-0.0752**	-0.114***
	(0.022)	(0.005)	(0.017)	(0.032)	(0.033)
10.refmonth	-0.0504**	-0.0303***	-0.0253	-0.0478	-0.0379
	(0.023)	(0.006)	(0.016)	(0.031)	(0.031)
11.refmonth	-0.0665***	-0.0244***	-0.0210	-0.0589**	-0.0669*
	(0.024)	(0.006)	(0.017)	(0.028)	(0.036)
12.refmonth	-0.0486**	-0.0318***	-0.0216	-0.0318	-0.117***
	(0.019)	(0.006)	(0.016)	(0.030)	(0.032)
13.refmonth	-0.0255	0.0000407	-0.00690	-0.0287	-0.0466
	(0.022)	(0.006)	(0.017)	(0.026)	(0.036)
_cons	3.839***	3.780***	3.628***	3.756***	3.792***
	(0.024)	(0.007)	(0.017)	(0.031)	(0.036)
N	47292	697740	91202	26895	21194

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-60: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 3: STARCHY VEGETABLES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0202	0.0150	0.0150	0.0938	0.188***
	(0.047)	(0.012)	(0.033)	(0.069)	(0.069)
1.pandemicyear#2.refmonth	-0.00253	-0.0106	-0.0175	0.0321	0.0822
	(0.049)	(0.012)	(0.037)	(0.083)	(0.076)
1.pandemicyear#3.refmonth	0.0566	0.0148	0.0311	0.0807	0.0846
	(0.045)	(0.011)	(0.035)	(0.078)	(0.066)
1.pandemicyear#4.refmonth	0.0846*	0.00952	0.00410	-0.0556	0.0388
	(0.048)	(0.011)	(0.029)	(0.069)	(0.073)
1.pandemicyear#5.refmonth	0.0165	0.00187	0.0315	0.133**	0.130*
	(0.045)	(0.011)	(0.032)	(0.064)	(0.070)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.203***	0.173***	0.124***	0.122*	0.255***
	(0.045)	(0.011)	(0.033)	(0.065)	(0.071)
1.pandemicyear#8.refmonth	0.201***	0.153***	0.162***	0.219***	0.262***
	(0.049)	(0.011)	(0.033)	(0.074)	(0.073)
1.pandemicyear#9.refmonth	0.200***	0.175***	0.135***	0.264***	0.199***
	(0.050)	(0.012)	(0.035)	(0.077)	(0.070)
1.pandemicyear#10.refmonth	0.136***	0.124***	0.0893***	0.175**	0.203***
	(0.045)	(0.011)	(0.034)	(0.071)	(0.073)
1.pandemicyear#11.refmonth	0.138***	0.0976***	0.0820**	0.143*	0.133*
	(0.048)	(0.012)	(0.040)	(0.081)	(0.073)
1.pandemicyear#12.refmonth	0.145***	0.0947***	0.118***	0.139*	0.123*
	(0.045)	(0.012)	(0.035)	(0.071)	(0.072)
1.pandemicyear#13.refmonth	0.106**	0.0925***	0.0705**	0.234***	0.142*
	(0.043)	(0.012)	(0.031)	(0.072)	(0.076)
1.pandemicyear	-0.0132	-0.0156*	-0.00146	-0.0351	-0.0883*
	(0.034)	(0.008)	(0.024)	(0.057)	(0.053)
1.refmonth	-0.0768**	-0.0117	-0.00928	-0.0875*	-0.108**
	(0.033)	(0.008)	(0.023)	(0.045)	(0.046)
2.refmonth	-0.0368	0.00117	-0.00188	-0.118**	-0.0716
	(0.034)	(0.008)	(0.026)	(0.052)	(0.052)
3.refmonth	-0.0142	0.0182**	0.00850	-0.0828	-0.0193
	(0.033)	(0.008)	(0.024)	(0.053)	(0.047)
4.refmonth	-0.0267	0.0188**	0.0104	0.0676	-0.0105
	(0.037)	(0.008)	(0.020)	(0.046)	(0.053)
5.refmonth	-0.0474	0.00335	0.00105	-0.117***	-0.0588
	(0.031)	(0.008)	(0.023)	(0.041)	(0.048)
6.refmonth			(omitted)		
7.refmonth	-0.0155	-0.00752	0.0157	-0.0302	-0.0753
	(0.033)	(0.008)	(0.023)	(0.042)	(0.048)
8.refmonth	-0.0333	0.00806	0.00276	-0.0442	-0.0510
	(0.037)	(0.008)	(0.023)	(0.049)	(0.051)
9.refmonth	-0.0834***	-0.0374***	0.00190	-0.0783	-0.0632
	(0.031)	(0.008)	(0.024)	(0.058)	(0.048)
10.refmonth	-0.0138	-0.0289***	0.0185	-0.0137	-0.0866*
	(0.030)	(0.008)	(0.022)	(0.045)	(0.052)
11.refmonth	-0.0141	-0.0139*	0.0141	-0.0631	-0.0373
	(0.034)	(0.008)	(0.024)	(0.044)	(0.050)
12.refmonth	-0.0723**	-0.0111	-0.0223	-0.0520	-0.0225
	(0.035)	(0.008)	(0.023)	(0.047)	(0.054)
13.refmonth	-0.0408	-0.00144	0.00828	-0.0605	-0.0353
	(0.032)	(0.008)	(0.023)	(0.055)	(0.052)
_cons	1.472***	1.494***	1.392***	1.404***	1.538***
	(0.027)	(0.008)	(0.018)	(0.036)	(0.040)
N	19944	335198	36184	7795	9009

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-61: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 4: GREEN VEGETABLES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.124**	0.0579***	0.0156	0.0570	0.233***
	(0.050)	(0.013)	(0.038)	(0.075)	(0.072)
1.pandemicyear#2.refmonth	0.0305	0.0577***	0.0616*	0.0561	0.123
	(0.054)	(0.013)	(0.037)	(0.069)	(0.079)
1.pandemicyear#3.refmonth	0.0875*	0.0702***	0.0552	0.113	0.160**
	(0.053)	(0.012)	(0.036)	(0.070)	(0.067)
1.pandemicyear#4.refmonth	-0.0307	-0.0104	-0.0240	-0.0510	0.121
	(0.051)	(0.012)	(0.034)	(0.068)	(0.076)
1.pandemicyear#5.refmonth	0.0370	-0.000862	-0.0194	-0.0921	0.0688
	(0.044)	(0.012)	(0.032)	(0.060)	(0.079)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	-0.0192	0.00337	-0.00841	-0.000456	0.0276
	(0.051)	(0.012)	(0.036)	(0.069)	(0.074)
1.pandemicyear#8.refmonth	-0.0135	0.0186	0.0680**	0.0902	0.00256
	(0.049)	(0.012)	(0.034)	(0.058)	(0.070)
1.pandemicyear#9.refmonth	0.0442	0.0537***	0.0660*	0.0845	0.0164
	(0.049)	(0.012)	(0.037)	(0.068)	(0.070)
1.pandemicyear#10.refmonth	0.0222	0.00605	0.0651	0.0223	0.131*
	(0.046)	(0.012)	(0.040)	(0.059)	(0.072)
1.pandemicyear#11.refmonth	-0.0478	-0.00151	0.0243	0.0957	0.148**
	(0.048)	(0.012)	(0.034)	(0.062)	(0.074)
1.pandemicyear#12.refmonth	0.0235	0.0351***	0.0526	0.108	0.115
	(0.046)	(0.012)	(0.039)	(0.070)	(0.072)
1.pandemicyear#13.refmonth	0.0323	0.0359***	0.0343	0.114*	0.144*
	(0.049)	(0.012)	(0.037)	(0.068)	(0.078)
1.pandemicyear	0.000380	-0.00484	-0.00227	0.0367	-0.0817
	(0.037)	(0.009)	(0.026)	(0.047)	(0.051)
1.refmonth	-0.140***	-0.102***	-0.0420	-0.0838*	-0.169***
	(0.033)	(0.009)	(0.028)	(0.051)	(0.051)
2.refmonth	-0.105***	-0.0920***	-0.0948***	-0.00937	-0.111**
	(0.036)	(0.009)	(0.025)	(0.045)	(0.052)
3.refmonth	-0.135***	-0.110***	-0.0980***	-0.0690	-0.174***
	(0.037)	(0.008)	(0.027)	(0.048)	(0.051)
4.refmonth	-0.0635*	-0.00390	-0.0196	0.0367	-0.155***
	(0.033)	(0.009)	(0.026)	(0.050)	(0.052)
5.refmonth	-0.0427	0.0203**	0.0431*	0.131***	-0.0367
	(0.031)	(0.008)	(0.025)	(0.046)	(0.051)
6.refmonth			(omitted)		
7.refmonth	0.0123	0.0237***	0.0543**	0.103**	0.0133
	(0.036)	(0.008)	(0.026)	(0.045)	(0.051)
8.refmonth	-0.00132	0.0301***	0.0409	0.0653*	0.0159
	(0.030)	(0.008)	(0.025)	(0.039)	(0.049)
9.refmonth	0.00200	0.00427	-0.00866	0.0629	0.0318
	(0.037)	(0.009)	(0.027)	(0.045)	(0.049)
10.refmonth	0.00955	0.0133*	-0.0130	0.0846**	-0.0563
	(0.035)	(0.008)	(0.027)	(0.040)	(0.051)
11.refmonth	0.0703**	0.0233***	0.0156	0.0614	-0.0681
	(0.032)	(0.009)	(0.024)	(0.048)	(0.048)
12.refmonth	-0.00664	-0.0194**	-0.0136	-0.0383	-0.0370
	(0.035)	(0.009)	(0.030)	(0.045)	(0.056)
13.refmonth	-0.00798	-0.0286***	0.00933	0.0250	-0.101*
	(0.034)	(0.009)	(0.028)	(0.050)	(0.052)
_cons	1.226***	1.230***	1.158***	1.245***	1.252***
	(0.030)	(0.009)	(0.022)	(0.037)	(0.041)
N	19139	309265	34042	10437	8404

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-62: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 5: ORANGE VEGETABLES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0297	0.00741	-0.0482	0.0246	0.0446
	(0.043)	(0.011)	(0.036)	(0.076)	(0.069)
1.pandemicyear#2.refmonth	-0.103**	-0.000853	-0.0108	-0.0255	0.0304
	(0.040)	(0.012)	(0.034)	(0.066)	(0.071)
1.pandemicyear#3.refmonth	0.0106	0.0231**	0.0662**	0.0428	0.0199
	(0.046)	(0.011)	(0.033)	(0.065)	(0.064)
1.pandemicyear#4.refmonth	-0.141***	-0.000376	-0.0444	-0.143**	-0.0811
	(0.045)	(0.012)	(0.036)	(0.068)	(0.071)
1.pandemicyear#5.refmonth	-0.0152	-0.00443	-0.0760**	-0.0991	0.0701
	(0.042)	(0.011)	(0.031)	(0.068)	(0.070)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.145***	0.167***	0.111***	0.145**	0.195***
	(0.048)	(0.012)	(0.033)	(0.064)	(0.073)
1.pandemicyear#8.refmonth	0.114**	0.137***	0.122***	0.179***	0.228***
	(0.048)	(0.011)	(0.034)	(0.064)	(0.071)
1.pandemicyear#9.refmonth	0.155***	0.183***	0.155***	0.204***	0.176**
	(0.043)	(0.012)	(0.035)	(0.068)	(0.074)
1.pandemicyear#10.refmonth	0.0709*	0.136***	0.106***	0.160**	0.135**
	(0.043)	(0.012)	(0.036)	(0.066)	(0.067)
1.pandemicyear#11.refmonth	0.0463	0.126***	0.148***	0.145**	0.0936
	(0.047)	(0.012)	(0.034)	(0.071)	(0.069)
1.pandemicyear#12.refmonth	0.0378	0.106***	0.0919**	0.139**	0.163**
	(0.046)	(0.012)	(0.036)	(0.062)	(0.068)
1.pandemicyear#13.refmonth	0.0566	0.0932***	0.0423	0.0348	0.169**
	(0.046)	(0.012)	(0.035)	(0.065)	(0.068)
1.pandemicyear	0.0472	-0.0159*	0.00949	0.0481	-0.0473
	(0.032)	(0.008)	(0.025)	(0.048)	(0.047)
1.refmonth	-0.00213	-0.0694***	-0.00693	-0.0577	-0.0702
	(0.033)	(0.009)	(0.025)	(0.050)	(0.046)
2.refmonth	0.0721**	0.000926	-0.0210	0.0381	-0.0177
	(0.029)	(0.008)	(0.022)	(0.051)	(0.050)
3.refmonth	0.0431	0.0258***	-0.0330	0.0396	0.0266
	(0.035)	(0.008)	(0.022)	(0.050)	(0.046)
4.refmonth	0.115***	0.00196	-0.00238	0.0459	0.0312
	(0.030)	(0.008)	(0.026)	(0.045)	(0.051)
5.refmonth	0.0620**	0.0425***	0.0726***	0.0864*	-0.0369
	(0.029)	(0.008)	(0.022)	(0.046)	(0.047)
6.refmonth			(omitted)		
7.refmonth	0.0339	-0.0109	0.000978	-0.00769	-0.0180
	(0.033)	(0.008)	(0.023)	(0.044)	(0.051)
8.refmonth	0.0112	-0.0194**	-0.00253	-0.0132	-0.0696
	(0.037)	(0.008)	(0.024)	(0.044)	(0.052)
9.refmonth	-0.0104	-0.0540***	-0.0396	-0.0370	-0.0218
	(0.031)	(0.009)	(0.025)	(0.046)	(0.047)
10.refmonth	0.00123	-0.0756***	-0.0378	-0.0260	-0.0439
	(0.032)	(0.008)	(0.025)	(0.045)	(0.048)
11.refmonth	-0.0115	-0.0967***	-0.0717***	-0.0189	-0.0577
	(0.034)	(0.008)	(0.025)	(0.051)	(0.050)
12.refmonth	-0.0199	-0.123***	-0.0738***	-0.0898*	-0.0858*
	(0.033)	(0.009)	(0.027)	(0.051)	(0.049)
13.refmonth	-0.0111	-0.111***	-0.0284	-0.00167	-0.0899**
	(0.033)	(0.009)	(0.026)	(0.047)	(0.045)
_cons	1.297***	1.398***	1.193***	1.312***	1.373***
	(0.031)	(0.008)	(0.020)	(0.041)	(0.039)
N	28473	436641	46850	14227	12217

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-63: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 6: LEGUMES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.00333	-0.0268*	-0.0381	0.0397	0.0516
	(0.063)	(0.015)	(0.044)	(0.097)	(0.086)
1.pandemicyear#2.refmonth	-0.0587	-0.0367**	-0.0254	-0.0887	0.0146
	(0.059)	(0.014)	(0.041)	(0.088)	(0.079)
1.pandemicyear#3.refmonth	-0.0488	-0.0223	-0.0339	-0.0363	-0.0150
	(0.061)	(0.015)	(0.040)	(0.085)	(0.077)
1.pandemicyear#4.refmonth	-0.123**	-0.0237	0.00417	0.0342	0.00135
	(0.057)	(0.014)	(0.039)	(0.097)	(0.089)
1.pandemicyear#5.refmonth	-0.139**	-0.0240*	-0.0310	0.00130	0.00182
	(0.055)	(0.014)	(0.038)	(0.079)	(0.084)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.219***	0.157***	0.233***	0.147*	0.277***
	(0.059)	(0.015)	(0.040)	(0.088)	(0.085)
1.pandemicyear#8.refmonth	0.0727	0.0468***	0.118***	-0.0871	0.211**
	(0.059)	(0.016)	(0.042)	(0.085)	(0.090)
1.pandemicyear#9.refmonth	0.0274	0.0360**	0.0749*	-0.00750	0.0831
	(0.056)	(0.015)	(0.039)	(0.103)	(0.083)
1.pandemicyear#10.refmonth	0.0283	-0.00362	0.0521	-0.0820	0.0111
	(0.060)	(0.015)	(0.042)	(0.089)	(0.086)
1.pandemicyear#11.refmonth	-0.0172	0.0162	0.0175	-0.0877	0.110
	(0.071)	(0.016)	(0.039)	(0.088)	(0.083)
1.pandemicyear#12.refmonth	-0.0587	0.0313**	0.0593	0.0264	0.0799
	(0.058)	(0.016)	(0.042)	(0.090)	(0.084)
1.pandemicyear#13.refmonth	0.00450	0.00807	0.000759	0.0102	0.0856
	(0.061)	(0.014)	(0.040)	(0.084)	(0.090)
1.pandemicyear	0.0516	0.0280***	0.0178	-0.0270	-0.0509
	(0.043)	(0.010)	(0.029)	(0.057)	(0.062)
1.refmonth	0.0114	0.0263**	0.0547*	0.0155	-0.0500
	(0.045)	(0.010)	(0.031)	(0.068)	(0.062)
2.refmonth	0.0357	0.0530***	0.0516*	0.0126	-0.0189
	(0.041)	(0.010)	(0.029)	(0.064)	(0.058)
3.refmonth	0.0675	0.0732***	0.0834***	0.00643	0.0242
	(0.041)	(0.010)	(0.026)	(0.057)	(0.057)
4.refmonth	0.161***	0.0554***	0.0675**	-0.0306	-0.0265
	(0.043)	(0.010)	(0.026)	(0.071)	(0.061)
5.refmonth	0.0898**	0.0125	0.0375	-0.0491	-0.00000638
	(0.042)	(0.010)	(0.026)	(0.060)	(0.061)
6.refmonth			(omitted)		
7.refmonth	-0.00269	-0.00350	0.0277	0.0234	-0.129**
	(0.041)	(0.010)	(0.028)	(0.063)	(0.058)
8.refmonth	0.0418	0.0297***	0.0223	0.101	-0.0461
	(0.040)	(0.010)	(0.027)	(0.062)	(0.062)
9.refmonth	-0.0105	0.0270***	0.0798***	-0.00369	0.0346
	(0.038)	(0.010)	(0.025)	(0.061)	(0.061)
10.refmonth	-0.00104	0.0303***	0.0593**	0.0204	-0.00323
	(0.043)	(0.011)	(0.029)	(0.059)	(0.062)
11.refmonth	0.0399	0.0218**	0.0842***	0.0158	-0.0352
	(0.051)	(0.010)	(0.025)	(0.059)	(0.061)
12.refmonth	0.0252	-0.00712	0.0353	-0.0296	-0.0184
	(0.041)	(0.011)	(0.029)	(0.064)	(0.060)
13.refmonth	-0.00791	0.0332***	0.0927***	-0.0813	-0.0482
	(0.041)	(0.010)	(0.029)	(0.066)	(0.062)
_cons	1.240***	1.210***	1.218***	1.399***	1.350***
	(0.035)	(0.009)	(0.023)	(0.057)	(0.046)
N	21794	328800	40875	9987	9843

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-64: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 7: OTHER VEGETABLES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0200	0.0111	0.0310	0.00667	0.0753
	(0.036)	(0.010)	(0.027)	(0.050)	(0.059)
1.pandemicyear#2.refmonth	-0.0000910	-0.00615	-0.00577	0.0480	0.00401
	(0.035)	(0.011)	(0.034)	(0.050)	(0.061)
1.pandemicyear#3.refmonth	0.0106	0.0291***	0.0272	0.0428	0.0657
	(0.040)	(0.010)	(0.030)	(0.048)	(0.059)
1.pandemicyear#4.refmonth	-0.0428	-0.0168*	-0.0290	-0.0300	0.0107
	(0.037)	(0.010)	(0.030)	(0.050)	(0.064)
1.pandemicyear#5.refmonth	0.0416	-0.00810	-0.0301	0.0227	-0.0520
	(0.041)	(0.010)	(0.030)	(0.048)	(0.060)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.132***	0.114***	0.132***	0.179***	0.0850
	(0.039)	(0.010)	(0.027)	(0.050)	(0.056)
1.pandemicyear#8.refmonth	0.117***	0.0824***	0.148***	0.212***	0.0918
	(0.036)	(0.010)	(0.029)	(0.054)	(0.064)
1.pandemicyear#9.refmonth	0.179***	0.156***	0.242***	0.309***	0.179***
	(0.036)	(0.010)	(0.031)	(0.055)	(0.061)
1.pandemicyear#10.refmonth	0.161***	0.126***	0.180***	0.236***	0.139**
	(0.042)	(0.010)	(0.029)	(0.052)	(0.057)
1.pandemicyear#11.refmonth	0.126***	0.115***	0.142***	0.210***	0.146**
	(0.046)	(0.010)	(0.032)	(0.056)	(0.061)
1.pandemicyear#12.refmonth	0.102**	0.0981***	0.196***	0.222***	0.146**
	(0.044)	(0.011)	(0.030)	(0.054)	(0.066)
1.pandemicyear#13.refmonth	0.0950**	0.0808***	0.107***	0.214***	0.0958*
	(0.044)	(0.011)	(0.029)	(0.054)	(0.056)
1.pandemicyear	0.0147	0.000846	-0.00121	0.0305	0.00266
	(0.030)	(0.008)	(0.021)	(0.036)	(0.041)
1.refmonth	-0.0599**	-0.0692***	-0.0522**	-0.115***	-0.0980**
	(0.026)	(0.007)	(0.021)	(0.038)	(0.043)
2.refmonth	-0.0402	-0.0471***	-0.0371*	-0.0973***	-0.0418
	(0.025)	(0.008)	(0.022)	(0.034)	(0.042)
3.refmonth	-0.0883***	-0.111***	-0.0173	-0.0772**	-0.133***
	(0.029)	(0.008)	(0.022)	(0.035)	(0.045)
4.refmonth	-0.0586**	-0.0655***	0.000973	-0.0704**	-0.0930**
	(0.027)	(0.008)	(0.020)	(0.031)	(0.043)
5.refmonth	-0.00993	0.00741	0.0282	-0.0312	0.0340
	(0.027)	(0.007)	(0.021)	(0.040)	(0.041)
6.refmonth			(omitted)		
7.refmonth	0.00436	0.0134*	0.0136	-0.00482	0.0302
	(0.030)	(0.007)	(0.021)	(0.036)	(0.039)
8.refmonth	0.0306	0.0325***	0.0484**	-0.0228	0.0360
	(0.027)	(0.007)	(0.021)	(0.034)	(0.042)
9.refmonth	-0.0155	0.000452	-0.00804	-0.0823*	0.00386
	(0.026)	(0.007)	(0.022)	(0.043)	(0.044)
10.refmonth	-0.0345	0.00607	-0.0305	-0.0240	-0.00503
	(0.029)	(0.008)	(0.021)	(0.038)	(0.045)
11.refmonth	-0.0265	0.00555	-0.0138	-0.0215	-0.0645
	(0.029)	(0.008)	(0.021)	(0.042)	(0.045)
12.refmonth	-0.0307	-0.0385***	-0.0394**	-0.0637*	-0.000314
	(0.029)	(0.008)	(0.019)	(0.036)	(0.046)
13.refmonth	-0.0537*	-0.0381***	0.00143	-0.0849**	-0.0420
	(0.029)	(0.009)	(0.020)	(0.038)	(0.043)
_cons	2.278***	2.201***	2.104***	2.483***	2.260***
	(0.028)	(0.009)	(0.020)	(0.032)	(0.040)
N	38890	575867	72376	23040	17365

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-65: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 8: WHOLE FRUITS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.00646	-0.000622	-0.0202	-0.00493	-0.0692
	(0.040)	(0.011)	(0.032)	(0.049)	(0.069)
1.pandemicyear#2.refmonth	0.0285	-0.0299***	-0.00890	0.00396	-0.0554
	(0.039)	(0.011)	(0.033)	(0.056)	(0.067)
1.pandemicyear#3.refmonth	-0.0199	-0.0204*	-0.00213	-0.00283	0.0428
	(0.042)	(0.010)	(0.031)	(0.050)	(0.063)
1.pandemicyear#4.refmonth	-0.0611	-0.0284***	-0.0427	-0.0157	-0.0991
	(0.041)	(0.010)	(0.030)	(0.048)	(0.060)
1.pandemicyear#5.refmonth	-0.00564	-0.0104	0.000321	0.0612	-0.115*
	(0.041)	(0.010)	(0.031)	(0.045)	(0.064)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.0756*	0.0891***	0.0995***	0.0589	0.0525
	(0.039)	(0.011)	(0.028)	(0.052)	(0.062)
1.pandemicyear#8.refmonth	0.0977**	0.0671***	0.165***	0.170***	0.0490
	(0.040)	(0.011)	(0.030)	(0.054)	(0.070)
1.pandemicyear#9.refmonth	0.206***	0.163***	0.220***	0.246***	0.137**
	(0.040)	(0.010)	(0.028)	(0.058)	(0.066)
1.pandemicyear#10.refmonth	0.173***	0.141***	0.187***	0.186***	0.106
	(0.039)	(0.010)	(0.032)	(0.059)	(0.068)
1.pandemicyear#11.refmonth	0.117***	0.0730***	0.103***	0.100*	0.0448
	(0.042)	(0.011)	(0.030)	(0.055)	(0.068)
1.pandemicyear#12.refmonth	0.140***	0.0715***	0.197***	0.170***	0.132*
	(0.043)	(0.010)	(0.030)	(0.063)	(0.071)
1.pandemicyear#13.refmonth	0.104**	0.0935***	0.134***	0.175***	0.104
	(0.047)	(0.011)	(0.032)	(0.051)	(0.070)
1.pandemicyear	-0.0114	-0.00936	-0.0159	0.0178	0.0283
	(0.032)	(0.008)	(0.022)	(0.039)	(0.051)
1.refmonth	-0.00897	-0.0331***	-0.0355	-0.0939**	0.0712
	(0.028)	(0.008)	(0.022)	(0.037)	(0.049)
2.refmonth	-0.0676**	-0.0404***	-0.0752***	-0.121***	0.0116
	(0.027)	(0.008)	(0.021)	(0.036)	(0.048)
3.refmonth	-0.0540*	-0.0169**	-0.0895***	-0.0948**	-0.0473
	(0.028)	(0.008)	(0.022)	(0.039)	(0.046)
4.refmonth	-0.115***	-0.0937***	-0.108***	-0.119***	-0.104**
	(0.032)	(0.008)	(0.021)	(0.042)	(0.046)
5.refmonth	-0.0122	-0.0346***	-0.0444*	-0.105***	0.00361
	(0.028)	(0.008)	(0.023)	(0.032)	(0.046)
6.refmonth			(omitted)		
7.refmonth	0.0409	-0.000592	-0.00756	-0.0119	0.0145
	(0.026)	(0.007)	(0.020)	(0.036)	(0.045)
8.refmonth	0.0337	0.0219***	-0.00561	-0.0351	0.0282
	(0.027)	(0.008)	(0.020)	(0.038)	(0.049)
9.refmonth	0.0682**	0.0547***	0.0303	0.0366	0.0849*
	(0.027)	(0.008)	(0.020)	(0.038)	(0.047)
10.refmonth	0.100***	0.125***	0.0522**	0.130***	0.147***
	(0.028)	(0.007)	(0.024)	(0.040)	(0.048)
11.refmonth	0.162***	0.192***	0.163***	0.213***	0.190***
	(0.029)	(0.008)	(0.021)	(0.038)	(0.049)
12.refmonth	0.101***	0.118***	0.0685***	0.136***	0.153***
	(0.030)	(0.008)	(0.021)	(0.039)	(0.053)
13.refmonth	0.0528	0.0169**	0.0550***	-0.0165	0.0909*
	(0.033)	(0.008)	(0.021)	(0.037)	(0.048)
_cons	2.432***	2.318***	2.273***	2.618***	2.305***
	(0.028)	(0.009)	(0.020)	(0.039)	(0.045)
N	39957	577291	72429	23782	17286

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-66: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 9: JUICES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0273	0.00151	-0.0133	0.0552	0.176**
	(0.048)	(0.012)	(0.034)	(0.070)	(0.070)
1.pandemicyear#2.refmonth	-0.0188	-0.00251	0.00118	0.00747	0.116*
	(0.043)	(0.012)	(0.035)	(0.073)	(0.068)
1.pandemicyear#3.refmonth	-0.0489	0.00349	-0.0324	0.0238	0.0523
	(0.045)	(0.012)	(0.033)	(0.068)	(0.074)
1.pandemicyear#4.refmonth	-0.0465	0.0116	-0.0131	0.0315	0.121*
	(0.049)	(0.012)	(0.034)	(0.067)	(0.072)
1.pandemicyear#5.refmonth	0.000753	-0.000592	0.00741	0.0868	0.191***
	(0.052)	(0.012)	(0.035)	(0.079)	(0.062)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.168***	0.100***	0.134***	0.153**	0.156**
	(0.046)	(0.012)	(0.031)	(0.069)	(0.072)
1.pandemicyear#8.refmonth	0.131***	0.0850***	0.145***	0.0776	0.199***
	(0.046)	(0.012)	(0.033)	(0.070)	(0.075)
1.pandemicyear#9.refmonth	0.160***	0.0967***	0.168***	0.150*	0.296***
	(0.049)	(0.013)	(0.033)	(0.076)	(0.071)
1.pandemicyear#10.refmonth	0.104**	0.0914***	0.0998***	0.221***	0.369***
	(0.049)	(0.013)	(0.033)	(0.066)	(0.071)
1.pandemicyear#11.refmonth	0.123***	0.104***	0.126***	0.179**	0.222***
	(0.045)	(0.012)	(0.035)	(0.069)	(0.068)
1.pandemicyear#12.refmonth	0.0703	0.0950***	0.181***	0.230***	0.186**
	(0.048)	(0.012)	(0.034)	(0.073)	(0.073)
1.pandemicyear#13.refmonth	0.0700	0.0536***	0.0763**	0.162**	0.170**
	(0.048)	(0.013)	(0.035)	(0.072)	(0.068)
1.pandemicyear	0.00629	0.00360	0.00823	-0.0861*	-0.104**
	(0.038)	(0.009)	(0.024)	(0.050)	(0.049)
1.refmonth	0.00185	-0.0191**	-0.0238	-0.0741	-0.124**
	(0.033)	(0.009)	(0.024)	(0.049)	(0.051)
2.refmonth	-0.0150	-0.0172**	-0.0429*	-0.0187	-0.142***
	(0.030)	(0.008)	(0.023)	(0.048)	(0.053)
3.refmonth	-0.0309	-0.0533***	-0.0133	-0.124**	-0.0992*
	(0.033)	(0.008)	(0.025)	(0.050)	(0.053)
4.refmonth	-0.0175	-0.0475***	-0.00942	-0.106**	-0.117**
	(0.037)	(0.008)	(0.026)	(0.046)	(0.050)
5.refmonth	-0.0329	-0.00687	0.00461	-0.0874*	-0.0697
	(0.036)	(0.008)	(0.024)	(0.050)	(0.045)
6.refmonth			(omitted)		
7.refmonth	-0.0235	-0.00226	-0.0102	-0.0343	-0.0584
	(0.032)	(0.009)	(0.021)	(0.050)	(0.050)
8.refmonth	-0.0358	-0.00877	-0.0117	-0.0204	-0.0169
	(0.031)	(0.009)	(0.021)	(0.050)	(0.059)
9.refmonth	-0.0407	0.00792	-0.00246	-0.0826*	-0.0848
	(0.033)	(0.009)	(0.022)	(0.049)	(0.052)
10.refmonth	-0.00230	0.00679	0.0194	-0.0898*	-0.125**
	(0.032)	(0.009)	(0.023)	(0.049)	(0.053)
11.refmonth	-0.00657	0.00380	0.0184	-0.0644	-0.0614
	(0.032)	(0.009)	(0.026)	(0.048)	(0.055)
12.refmonth	0.0297	-0.00233	0.000288	-0.0881	-0.0298
	(0.031)	(0.009)	(0.025)	(0.055)	(0.052)
13.refmonth	0.0170	0.00959	0.00953	-0.0614	-0.00931
	(0.032)	(0.009)	(0.024)	(0.056)	(0.056)
_cons	1.968***	1.883***	2.003***	1.982***	2.040***
	(0.034)	(0.008)	(0.021)	(0.036)	(0.045)
N	27622	376485	59508	12935	12258

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-67: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 10: WHOLE MILK PRODUCTS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0467	-0.0318***	0.0250	-0.0537	0.0963*
	(0.034)	(0.009)	(0.027)	(0.050)	(0.053)
1.pandemicyear#2.refmonth	-0.0106	-0.0140	0.0454*	0.0165	0.0407
	(0.034)	(0.009)	(0.027)	(0.043)	(0.049)
1.pandemicyear#3.refmonth	-0.00622	0.000813	0.00824	0.0162	0.137***
	(0.031)	(0.008)	(0.027)	(0.046)	(0.051)
1.pandemicyear#4.refmonth	-0.0601*	-0.00712	0.00830	-0.0510	0.0713
	(0.031)	(0.009)	(0.027)	(0.048)	(0.049)
1.pandemicyear#5.refmonth	-0.0103	-0.00742	0.0226	0.00843	0.0838
	(0.030)	(0.008)	(0.026)	(0.045)	(0.051)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.101***	0.124***	0.131***	0.0397	0.145***
	(0.031)	(0.008)	(0.025)	(0.049)	(0.054)
1.pandemicyear#8.refmonth	0.0987***	0.0994***	0.149***	0.0822	0.215***
	(0.033)	(0.009)	(0.025)	(0.055)	(0.054)
1.pandemicyear#9.refmonth	0.111***	0.158***	0.177***	0.144***	0.191***
	(0.034)	(0.009)	(0.027)	(0.045)	(0.051)
1.pandemicyear#10.refmonth	0.105***	0.114***	0.190***	0.172***	0.0687
	(0.028)	(0.009)	(0.028)	(0.046)	(0.049)
1.pandemicyear#11.refmonth	0.0408	0.0862***	0.0974***	0.101**	0.126**
	(0.038)	(0.009)	(0.024)	(0.041)	(0.052)
1.pandemicyear#12.refmonth	0.0461	0.0758***	0.124***	0.111***	0.0684
	(0.034)	(0.009)	(0.025)	(0.042)	(0.053)
1.pandemicyear#13.refmonth	0.0409	0.0801***	0.125***	0.0979**	0.109**
	(0.034)	(0.009)	(0.027)	(0.046)	(0.054)
1.pandemicyear	0.0672***	0.0300***	0.00648	0.0681**	-0.0429
	(0.024)	(0.007)	(0.019)	(0.033)	(0.039)
1.refmonth	0.0321	0.0247***	-0.00430	0.0812**	-0.0208
	(0.026)	(0.006)	(0.020)	(0.032)	(0.039)
2.refmonth	-0.00158	0.00888	-0.0107	0.0268	-0.0341
	(0.025)	(0.006)	(0.021)	(0.037)	(0.036)
3.refmonth	0.0186	0.0279***	0.0599***	0.0225	-0.0558
	(0.024)	(0.006)	(0.018)	(0.032)	(0.038)
4.refmonth	-0.0153	-0.0270***	0.0153	0.00298	-0.0785*
	(0.025)	(0.006)	(0.020)	(0.030)	(0.040)
5.refmonth	0.00862	-0.0126**	0.00526	-0.0138	-0.101***
	(0.025)	(0.006)	(0.020)	(0.031)	(0.037)
6.refmonth			(omitted)		
7.refmonth	0.0487**	0.0122**	0.0250	0.0732**	-0.0119
	(0.022)	(0.006)	(0.019)	(0.032)	(0.037)
8.refmonth	0.0497**	0.0464***	0.0480**	0.0758**	-0.0304
	(0.023)	(0.006)	(0.020)	(0.035)	(0.038)
9.refmonth	0.0900***	0.0407***	0.0468**	0.128***	-0.00630
	(0.025)	(0.006)	(0.020)	(0.031)	(0.036)
10.refmonth	0.0969***	0.0659***	0.0530**	0.128***	0.112***
	(0.024)	(0.006)	(0.021)	(0.033)	(0.039)
11.refmonth	0.110***	0.0893***	0.0990***	0.145***	0.0771*
	(0.026)	(0.006)	(0.020)	(0.032)	(0.043)
12.refmonth	0.126***	0.0764***	0.0623***	0.151***	0.101***
	(0.023)	(0.006)	(0.019)	(0.034)	(0.039)
13.refmonth	0.0860***	0.0633***	0.0402**	0.147***	0.0224
	(0.026)	(0.007)	(0.019)	(0.035)	(0.043)
_cons	2.509***	2.574***	2.176***	2.387***	2.542***
	(0.029)	(0.008)	(0.019)	(0.038)	(0.037)
N	42171	643304	74169	22962	18463

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-68: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 11: LOW FAT MILK PRODUCTS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0211	0.0271*	-0.0243	0.0503	0.199**
	(0.056)	(0.015)	(0.046)	(0.100)	(0.080)
1.pandemicyear#2.refmonth	-0.00302	0.0122	-0.0627	0.123	0.0881
	(0.059)	(0.015)	(0.042)	(0.100)	(0.076)
1.pandemicyear#3.refmonth	0.0113	0.0220	-0.0206	0.106	-0.0201
	(0.053)	(0.014)	(0.044)	(0.097)	(0.076)
1.pandemicyear#4.refmonth	-0.0560	0.0141	-0.0673*	0.0710	0.0918
	(0.056)	(0.014)	(0.038)	(0.109)	(0.075)
1.pandemicyear#5.refmonth	-0.0798	0.00353	-0.0494	-0.0214	-0.0570
	(0.055)	(0.015)	(0.041)	(0.094)	(0.087)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.0792	0.0629***	-0.000909	0.216**	0.0623
	(0.053)	(0.015)	(0.046)	(0.101)	(0.081)
1.pandemicyear#8.refmonth	-0.00602	0.0812***	-0.0233	0.0852	0.157*
	(0.050)	(0.015)	(0.047)	(0.090)	(0.081)
1.pandemicyear#9.refmonth	0.101	0.0739***	0.00544	0.0559	0.134*
	(0.062)	(0.016)	(0.040)	(0.108)	(0.076)
1.pandemicyear#10.refmonth	0.181***	0.0448***	-0.0169	0.112	0.0559
	(0.059)	(0.016)	(0.046)	(0.096)	(0.080)
1.pandemicyear#11.refmonth	0.0466	0.0683***	0.0256	-0.0286	0.141*
	(0.055)	(0.016)	(0.043)	(0.102)	(0.084)
1.pandemicyear#12.refmonth	-0.0218	0.0565***	0.0240	0.177	0.0341
	(0.055)	(0.015)	(0.047)	(0.114)	(0.086)
1.pandemicyear#13.refmonth	0.0247	0.0605***	0.0361	0.108	0.156*
	(0.063)	(0.016)	(0.045)	(0.119)	(0.090)
1.pandemicyear	0.0491	-0.00317	0.0793**	-0.0224	-0.0329
	(0.041)	(0.011)	(0.031)	(0.074)	(0.057)
1.refmonth	-0.00858	-0.0364***	0.000524	-0.0372	-0.148***
	(0.041)	(0.011)	(0.034)	(0.065)	(0.052)
2.refmonth	-0.0241	-0.0583***	0.00142	-0.0401	-0.0932
	(0.042)	(0.011)	(0.029)	(0.079)	(0.058)
3.refmonth	-0.0260	-0.100***	-0.0165	-0.0644	-0.00735
	(0.039)	(0.011)	(0.026)	(0.070)	(0.055)
4.refmonth	-0.00465	-0.0736***	-0.00109	-0.103	-0.0752
	(0.037)	(0.010)	(0.027)	(0.067)	(0.057)
5.refmonth	0.0667*	-0.0189*	0.0402	0.0324	0.00759
	(0.037)	(0.011)	(0.031)	(0.067)	(0.059)
6.refmonth			(omitted)		
7.refmonth	0.0485	0.0108	0.0685**	-0.0361	0.0725
	(0.036)	(0.011)	(0.030)	(0.064)	(0.064)
8.refmonth	0.0523	-0.0257**	0.0472	0.0472	-0.0206
	(0.040)	(0.011)	(0.029)	(0.067)	(0.062)
9.refmonth	0.0272	-0.000960	0.0844***	0.0361	0.0125
	(0.040)	(0.011)	(0.027)	(0.073)	(0.058)
10.refmonth	-0.0143	-0.00610	0.0481	-0.0119	0.0443
	(0.036)	(0.011)	(0.030)	(0.066)	(0.059)
11.refmonth	-0.00253	-0.0189*	0.0143	0.0343	-0.00118
	(0.042)	(0.011)	(0.030)	(0.069)	(0.068)
12.refmonth	0.0520	-0.00606	0.0354	-0.141**	0.0312
	(0.038)	(0.011)	(0.028)	(0.071)	(0.065)
13.refmonth	0.0307	-0.0177	0.0479	-0.0248	-0.0548
	(0.046)	(0.011)	(0.031)	(0.074)	(0.061)
_cons	1.667***	1.630***	1.421***	1.689***	1.748***
	(0.036)	(0.010)	(0.026)	(0.061)	(0.049)
N	16848	221079	30210	6963	7629

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-69: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 12: CHEESE

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0677*	-0.0375***	-0.0330	0.0503	0.0315
	(0.036)	(0.010)	(0.031)	(0.060)	(0.059)
1.pandemicyear#2.refmonth	-0.0686*	-0.0178*	-0.0811**	-0.0102	-0.0515
	(0.037)	(0.010)	(0.034)	(0.062)	(0.063)
1.pandemicyear#3.refmonth	-0.0393	0.00198	0.0175	0.122*	-0.0609
	(0.038)	(0.010)	(0.031)	(0.062)	(0.058)
1.pandemicyear#4.refmonth	-0.0747**	-0.00785	-0.0316	0.0456	0.0243
	(0.037)	(0.010)	(0.031)	(0.065)	(0.058)
1.pandemicyear#5.refmonth	-0.0546	-0.00500	-0.00630	0.0179	0.0166
	(0.037)	(0.010)	(0.030)	(0.073)	(0.059)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.114***	0.162***	0.163***	0.150**	0.0797
	(0.038)	(0.010)	(0.030)	(0.066)	(0.065)
1.pandemicyear#8.refmonth	0.157***	0.153***	0.158***	0.228***	0.177***
	(0.036)	(0.010)	(0.030)	(0.073)	(0.063)
1.pandemicyear#9.refmonth	0.145***	0.187***	0.179***	0.180***	0.154**
	(0.035)	(0.010)	(0.030)	(0.056)	(0.061)
1.pandemicyear#10.refmonth	0.0883**	0.120***	0.105***	0.214***	0.0877
	(0.037)	(0.010)	(0.031)	(0.066)	(0.056)
1.pandemicyear#11.refmonth	0.0553	0.123***	0.0989***	0.223***	0.128**
	(0.036)	(0.010)	(0.032)	(0.073)	(0.065)
1.pandemicyear#12.refmonth	0.148***	0.103***	0.0857***	0.215***	0.130**
	(0.038)	(0.010)	(0.030)	(0.070)	(0.061)
1.pandemicyear#13.refmonth	0.0663*	0.104***	0.0801**	0.153**	0.107
	(0.034)	(0.010)	(0.031)	(0.075)	(0.066)
1.pandemicyear	0.0384	0.0135*	0.0512**	-0.0309	0.0225
	(0.026)	(0.007)	(0.022)	(0.053)	(0.045)
1.refmonth	0.0121	0.00183	0.0255	0.000202	-0.0642
	(0.028)	(0.007)	(0.023)	(0.046)	(0.044)
2.refmonth	-0.00152	0.0144**	0.0573**	0.0361	0.0598
	(0.025)	(0.007)	(0.027)	(0.038)	(0.044)
3.refmonth	0.0499*	0.0726***	0.172***	0.0589	0.0789*
	(0.028)	(0.007)	(0.021)	(0.040)	(0.042)
4.refmonth	0.0870***	0.128***	0.139***	0.0643	0.0432
	(0.025)	(0.007)	(0.023)	(0.041)	(0.044)
5.refmonth	0.0428*	0.0385***	0.0645***	0.0234	-0.0102
	(0.024)	(0.007)	(0.023)	(0.046)	(0.040)
6.refmonth			(omitted)		
7.refmonth	-0.0230	-0.00726	-0.00471	-0.0405	0.0319
	(0.024)	(0.007)	(0.022)	(0.042)	(0.043)
8.refmonth	-0.0187	0.00209	0.0434*	0.00275	-0.0317
	(0.028)	(0.007)	(0.023)	(0.043)	(0.043)
9.refmonth	-0.0297	-0.0319***	0.00188	-0.0261	0.000366
	(0.024)	(0.007)	(0.023)	(0.040)	(0.041)
10.refmonth	-0.0321	-0.0315***	-0.00337	-0.0762*	-0.0180
	(0.027)	(0.007)	(0.025)	(0.042)	(0.040)
11.refmonth	-0.0449*	-0.0276***	0.0151	-0.0496	-0.0627
	(0.025)	(0.007)	(0.025)	(0.043)	(0.048)
12.refmonth	-0.0826***	-0.0314***	0.0231	-0.0536	-0.0268
	(0.027)	(0.007)	(0.021)	(0.049)	(0.044)
13.refmonth	-0.0206	-0.00699	0.0395*	-0.0263	-0.0291
	(0.027)	(0.007)	(0.023)	(0.051)	(0.044)
_cons	2.335***	2.337***	1.873***	2.085***	2.294***
	(0.023)	(0.007)	(0.021)	(0.041)	(0.040)
N	37171	574459	59120	16463	16078

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-70: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 13: MEATS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.116**	0.00935	-0.00397	0.142**	-0.0547
	(0.047)	(0.012)	(0.032)	(0.063)	(0.073)
1.pandemicyear#2.refmonth	-0.0428	0.0132	0.00101	0.00390	0.0219
	(0.040)	(0.012)	(0.035)	(0.061)	(0.076)
1.pandemicyear#3.refmonth	-0.0255	-0.000948	0.0134	0.0953	0.00470
	(0.042)	(0.012)	(0.035)	(0.068)	(0.071)
1.pandemicyear#4.refmonth	0.0489	-0.000797	-0.0231	0.0357	-0.0668
	(0.044)	(0.012)	(0.037)	(0.063)	(0.068)
1.pandemicyear#5.refmonth	0.0000109	0.00756	-0.0218	-0.0591	-0.0380
	(0.045)	(0.013)	(0.033)	(0.059)	(0.068)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.181***	0.193***	0.177***	0.163***	0.102
	(0.048)	(0.012)	(0.035)	(0.059)	(0.069)
1.pandemicyear#8.refmonth	0.151***	0.212***	0.200***	0.241***	0.172***
	(0.045)	(0.012)	(0.036)	(0.062)	(0.064)
1.pandemicyear#9.refmonth	0.348***	0.298***	0.303***	0.292***	0.353***
	(0.047)	(0.012)	(0.034)	(0.067)	(0.069)
1.pandemicyear#10.refmonth	0.158***	0.140***	0.145***	0.160**	0.111
	(0.041)	(0.013)	(0.034)	(0.065)	(0.069)
1.pandemicyear#11.refmonth	0.125***	0.182***	0.132***	0.249***	0.183***
	(0.046)	(0.013)	(0.037)	(0.060)	(0.066)
1.pandemicyear#12.refmonth	0.107**	0.178***	0.150***	0.345***	0.169**
	(0.042)	(0.012)	(0.036)	(0.069)	(0.073)
1.pandemicyear#13.refmonth	0.0762	0.121***	0.178***	0.282***	0.213***
	(0.053)	(0.013)	(0.033)	(0.070)	(0.068)
1.pandemicyear	0.0140	-0.0120	-0.00131	-0.0416	0.0110
	(0.031)	(0.009)	(0.025)	(0.048)	(0.047)
1.refmonth	0.0762**	-0.0148*	0.00242	-0.191***	-0.00404
	(0.034)	(0.009)	(0.025)	(0.044)	(0.052)
2.refmonth	0.0454	-0.00159	0.0109	-0.0708*	-0.00620
	(0.030)	(0.008)	(0.025)	(0.043)	(0.049)
3.refmonth	0.0374	-0.00294	0.0725***	-0.0414	0.0270
	(0.032)	(0.008)	(0.025)	(0.048)	(0.051)
4.refmonth	0.105***	0.105***	0.126***	0.0780*	0.140***
	(0.029)	(0.008)	(0.025)	(0.042)	(0.054)
5.refmonth	0.0105	0.0154*	0.0289	-0.0426	0.0208
	(0.028)	(0.009)	(0.022)	(0.040)	(0.046)
6.refmonth			(omitted)		
7.refmonth	0.0216	0.0211**	0.0190	-0.00458	0.0705
	(0.035)	(0.009)	(0.024)	(0.045)	(0.051)
8.refmonth	0.103***	0.0533***	0.0633***	-0.00351	0.137***
	(0.030)	(0.008)	(0.024)	(0.047)	(0.046)
9.refmonth	-0.0198	0.0160*	0.0410*	-0.0235	0.0397
	(0.034)	(0.008)	(0.024)	(0.049)	(0.051)
10.refmonth	0.0338	0.0209**	0.0198	-0.00933	0.0830*
	(0.031)	(0.009)	(0.025)	(0.046)	(0.050)
11.refmonth	0.0879***	0.0272***	0.115***	-0.0138	0.0816
	(0.028)	(0.009)	(0.026)	(0.044)	(0.052)
12.refmonth	0.00238	-0.0318***	0.00414	-0.181***	-0.0186
	(0.035)	(0.009)	(0.025)	(0.049)	(0.053)
13.refmonth	0.0364	-0.00107	0.0139	-0.0969**	-0.0219
	(0.037)	(0.008)	(0.023)	(0.046)	(0.050)
_cons	2.870***	2.816***	2.741***	3.016***	2.797***
	(0.025)	(0.008)	(0.023)	(0.035)	(0.043)
N	29125	427310	54966	15947	12592

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-71: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 14: POULTRY

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0584	-0.00529	-0.0247	0.0681	-0.0943
	(0.047)	(0.013)	(0.037)	(0.080)	(0.077)
1.pandemicyear#2.refmonth	-0.0611	-0.0347**	-0.0199	-0.00999	-0.144*
	(0.044)	(0.014)	(0.035)	(0.076)	(0.075)
1.pandemicyear#3.refmonth	-0.0305	0.0121	-0.0651**	-0.0582	0.00408
	(0.044)	(0.013)	(0.032)	(0.086)	(0.084)
1.pandemicyear#4.refmonth	0.00523	-0.00155	0.0152	-0.0442	-0.0569
	(0.047)	(0.014)	(0.037)	(0.070)	(0.080)
1.pandemicyear#5.refmonth	-0.0360	-0.0401***	-0.0387	0.0144	-0.0113
	(0.045)	(0.012)	(0.035)	(0.066)	(0.082)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.120**	0.117***	0.162***	0.0860	0.141*
	(0.047)	(0.013)	(0.033)	(0.073)	(0.081)
1.pandemicyear#8.refmonth	0.133***	0.121***	0.148***	0.239***	0.203**
	(0.047)	(0.013)	(0.035)	(0.070)	(0.084)
1.pandemicyear#9.refmonth	0.164***	0.171***	0.146***	0.177**	0.310***
	(0.046)	(0.014)	(0.034)	(0.069)	(0.081)
1.pandemicyear#10.refmonth	0.113**	0.0888***	0.103***	0.173**	0.148*
	(0.049)	(0.013)	(0.037)	(0.077)	(0.079)
1.pandemicyear#11.refmonth	0.0235	0.0624***	0.0527	0.106	0.0938
	(0.052)	(0.013)	(0.034)	(0.073)	(0.077)
1.pandemicyear#12.refmonth	0.0468	0.0458***	0.0907***	0.0209	-0.0436
	(0.047)	(0.014)	(0.034)	(0.077)	(0.083)
1.pandemicyear#13.refmonth	0.110**	0.0320**	0.0754**	0.0848	0.138
	(0.051)	(0.014)	(0.037)	(0.083)	(0.086)
1.pandemicyear	-0.0126	0.0131	0.0178	0.00359	-0.0114
	(0.035)	(0.009)	(0.025)	(0.059)	(0.056)
1.refmonth	-0.0332	0.00617	0.0360	-0.0544	0.0469
	(0.034)	(0.010)	(0.024)	(0.049)	(0.055)
2.refmonth	0.0884***	0.0791***	0.0748***	0.0508	0.141**
	(0.032)	(0.010)	(0.025)	(0.051)	(0.055)
3.refmonth	0.211***	0.233***	0.237***	0.276***	0.218***
	(0.033)	(0.010)	(0.025)	(0.057)	(0.061)
4.refmonth	0.0255	0.0282***	0.0624**	0.0154	0.0992*
	(0.037)	(0.010)	(0.026)	(0.052)	(0.058)
5.refmonth	0.0474	0.0576***	0.0853***	0.0531	0.0381
	(0.032)	(0.009)	(0.025)	(0.050)	(0.059)
6.refmonth			(omitted)		
7.refmonth	-0.00709	-0.0102	-0.0161	0.00384	-0.0138
	(0.032)	(0.009)	(0.024)	(0.053)	(0.053)
8.refmonth	0.00320	0.0198**	0.0448*	-0.0538	-0.0351
	(0.034)	(0.010)	(0.025)	(0.048)	(0.055)
9.refmonth	-0.0155	0.0149	0.0582**	0.0306	-0.0298
	(0.033)	(0.010)	(0.025)	(0.050)	(0.057)
10.refmonth	0.0213	-0.00268	0.0274	0.0313	0.0304
	(0.035)	(0.010)	(0.024)	(0.052)	(0.054)
11.refmonth	0.0417	0.0111	0.0406*	0.0264	0.0276
	(0.032)	(0.009)	(0.025)	(0.050)	(0.057)
12.refmonth	0.0229	-0.00450	0.0198	0.00464	0.0499
	(0.035)	(0.009)	(0.025)	(0.054)	(0.059)
13.refmonth	-0.0465	0.000170	0.0178	-0.0301	-0.0492
	(0.033)	(0.011)	(0.026)	(0.053)	(0.057)
_cons	2.402***	2.242***	2.322***	2.352***	2.318***
	(0.027)	(0.009)	(0.021)	(0.048)	(0.046)
N	19669	262046	39691	11134	8253

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-72: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 15: FISH

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.187**	0.141***	0.0291	0.0105	-0.0544
	(0.074)	(0.020)	(0.044)	(0.083)	(0.093)
1.pandemicyear#2.refmonth	-0.0971	0.0355**	0.0508	0.0181	-0.117
	(0.063)	(0.018)	(0.044)	(0.074)	(0.101)
1.pandemicyear#3.refmonth	0.0737	-0.0295	-0.0245	-0.138	-0.167
	(0.072)	(0.018)	(0.044)	(0.087)	(0.108)
1.pandemicyear#4.refmonth	0.0598	-0.0220	-0.0183	-0.121	-0.159
	(0.067)	(0.018)	(0.041)	(0.085)	(0.098)
1.pandemicyear#5.refmonth	0.0160	-0.0312*	-0.00972	-0.00308	-0.0213
	(0.064)	(0.018)	(0.046)	(0.071)	(0.098)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.0832	0.00735	0.00545	-0.0518	0.0144
	(0.057)	(0.017)	(0.045)	(0.067)	(0.087)
1.pandemicyear#8.refmonth	0.171**	0.0231	0.0654	0.00736	-0.00382
	(0.069)	(0.017)	(0.043)	(0.078)	(0.095)
1.pandemicyear#9.refmonth	0.281***	0.114***	0.183***	0.0804	0.0113
	(0.062)	(0.016)	(0.046)	(0.073)	(0.098)
1.pandemicyear#10.refmonth	0.130**	0.0970***	0.192***	0.146*	-0.0241
	(0.065)	(0.017)	(0.047)	(0.082)	(0.091)
1.pandemicyear#11.refmonth	0.260***	0.110***	0.164***	0.00812	-0.0650
	(0.057)	(0.018)	(0.049)	(0.072)	(0.100)
1.pandemicyear#12.refmonth	0.120**	0.0591***	0.0998**	0.00659	0.00342
	(0.060)	(0.017)	(0.046)	(0.072)	(0.099)
1.pandemicyear#13.refmonth	0.179***	0.0852***	0.143***	0.0712	-0.0616
	(0.066)	(0.018)	(0.046)	(0.073)	(0.098)
1.pandemicyear	-0.00771	0.0255**	0.0583*	0.102*	0.133**
	(0.046)	(0.012)	(0.031)	(0.053)	(0.067)
1.refmonth	-0.217***	-0.221***	-0.135***	-0.196***	-0.0840
	(0.057)	(0.016)	(0.034)	(0.060)	(0.068)
2.refmonth	-0.0513	-0.0903***	-0.124***	-0.0581	-0.141*
	(0.045)	(0.014)	(0.030)	(0.050)	(0.072)
3.refmonth	-0.130**	-0.0216*	-0.0483	0.0683	-0.0214
	(0.052)	(0.013)	(0.030)	(0.062)	(0.075)
4.refmonth	0.00946	0.112***	0.0883***	0.0982*	0.0691
	(0.057)	(0.015)	(0.029)	(0.055)	(0.068)
5.refmonth	-0.0711	-0.0310**	-0.0556*	-0.0575	-0.00899
	(0.045)	(0.013)	(0.031)	(0.051)	(0.074)
6.refmonth			(omitted)		
7.refmonth	0.0142	0.0142	0.0391	0.117**	0.0317
	(0.044)	(0.012)	(0.030)	(0.055)	(0.063)
8.refmonth	-0.0653	-0.0197	0.00292	0.0528	0.0556
	(0.054)	(0.012)	(0.030)	(0.054)	(0.064)
9.refmonth	-0.0812*	-0.0146	-0.0150	0.0358	0.0410
	(0.048)	(0.013)	(0.032)	(0.057)	(0.071)
10.refmonth	-0.0377	-0.0138	-0.0310	-0.00165	0.0391
	(0.056)	(0.013)	(0.032)	(0.058)	(0.068)
11.refmonth	-0.129***	-0.0223*	-0.0201	0.0709	0.0263
	(0.043)	(0.013)	(0.033)	(0.054)	(0.069)
12.refmonth	-0.127***	-0.0206	-0.00853	0.00278	0.0826
	(0.047)	(0.013)	(0.032)	(0.046)	(0.074)
13.refmonth	-0.0798	-0.0278**	-0.0323	0.0357	0.0300
	(0.049)	(0.013)	(0.029)	(0.055)	(0.066)
_cons	2.346***	2.190***	2.429***	2.652***	2.297***
	(0.038)	(0.012)	(0.026)	(0.046)	(0.056)
N	18134	256939	41219	12304	8466

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-73: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 16: PROCESSED MEATS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.00424	0.0106	-0.00917	-0.0335	-0.0361
	(0.039)	(0.010)	(0.028)	(0.061)	(0.062)
1.pandemicyear#2.refmonth	0.0307	0.0132	0.0504*	-0.00323	-0.0266
	(0.041)	(0.010)	(0.030)	(0.071)	(0.061)
1.pandemicyear#3.refmonth	-0.00974	0.0150	0.00467	-0.00385	-0.0175
	(0.035)	(0.011)	(0.030)	(0.063)	(0.064)
1.pandemicyear#4.refmonth	-0.0252	0.0132	0.0696**	0.0662	-0.00419
	(0.044)	(0.011)	(0.031)	(0.061)	(0.068)
1.pandemicyear#5.refmonth	0.0166	0.00927	-0.0193	-0.0341	-0.0533
	(0.039)	(0.011)	(0.029)	(0.058)	(0.064)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.220***	0.151***	0.232***	0.177***	0.142**
	(0.040)	(0.011)	(0.029)	(0.061)	(0.064)
1.pandemicyear#8.refmonth	0.189***	0.158***	0.243***	0.177**	0.204***
	(0.041)	(0.010)	(0.030)	(0.070)	(0.063)
1.pandemicyear#9.refmonth	0.193***	0.163***	0.221***	0.154**	0.283***
	(0.042)	(0.010)	(0.031)	(0.066)	(0.065)
1.pandemicyear#10.refmonth	0.101**	0.0573***	0.105***	0.0585	0.124**
	(0.039)	(0.010)	(0.029)	(0.066)	(0.058)
1.pandemicyear#11.refmonth	0.152***	0.0829***	0.119***	0.140**	0.131**
	(0.041)	(0.011)	(0.032)	(0.068)	(0.056)
1.pandemicyear#12.refmonth	0.158***	0.0983***	0.167***	0.0825	0.151**
	(0.041)	(0.010)	(0.032)	(0.065)	(0.068)
1.pandemicyear#13.refmonth	0.156***	0.0897***	0.111***	0.0957	0.0542
	(0.041)	(0.011)	(0.029)	(0.071)	(0.063)
1.pandemicyear	-0.00992	-0.00613	0.00590	0.0355	0.00998
	(0.027)	(0.008)	(0.021)	(0.049)	(0.045)
1.refmonth	-0.0169	-0.0105	-0.00671	0.0615	-0.0217
	(0.033)	(0.008)	(0.023)	(0.047)	(0.042)
2.refmonth	-0.0503*	-0.00759	-0.0560**	-0.00608	-0.0131
	(0.028)	(0.007)	(0.023)	(0.047)	(0.046)
3.refmonth	0.00503	-0.0154**	-0.0346	0.0191	-0.0704*
	(0.025)	(0.008)	(0.022)	(0.043)	(0.042)
4.refmonth	0.0229	0.0335***	-0.0356	0.0127	-0.0264
	(0.029)	(0.007)	(0.023)	(0.042)	(0.047)
5.refmonth	-0.00902	0.00504	0.0370*	0.0182	0.0416
	(0.027)	(0.007)	(0.021)	(0.041)	(0.043)
6.refmonth			(omitted)		
7.refmonth	-0.0210	-0.000345	-0.0238	0.0522	0.00646
	(0.028)	(0.007)	(0.021)	(0.041)	(0.044)
8.refmonth	-0.0341	-0.0244***	-0.0226	-0.0236	-0.0214
	(0.031)	(0.008)	(0.022)	(0.048)	(0.043)
9.refmonth	-0.0230	0.0235***	0.0250	0.00987	-0.0467
	(0.030)	(0.008)	(0.023)	(0.043)	(0.046)
10.refmonth	-0.00953	0.0479***	0.0115	0.0441	0.0299
	(0.029)	(0.008)	(0.022)	(0.046)	(0.041)
11.refmonth	0.0190	0.0539***	0.0276	0.0127	0.0353
	(0.029)	(0.008)	(0.024)	(0.046)	(0.045)
12.refmonth	-0.0344	0.0321***	-0.0177	0.0333	-0.0439
	(0.031)	(0.007)	(0.022)	(0.047)	(0.044)
13.refmonth	-0.0160	0.0401***	0.0509**	0.0573	0.0397
	(0.031)	(0.008)	(0.021)	(0.047)	(0.044)
_cons	2.457***	2.434***	2.414***	2.356***	2.479***
	(0.027)	(0.007)	(0.018)	(0.035)	(0.037)
N	34676	513717	67210	16137	14952

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-74: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 17: NUTS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0525	0.0275*	0.0159	0.111	0.115
	(0.064)	(0.014)	(0.043)	(0.081)	(0.091)
1.pandemicyear#2.refmonth	0.0264	-0.0190	0.0497	0.227**	-0.0239
	(0.055)	(0.015)	(0.044)	(0.094)	(0.097)
1.pandemicyear#3.refmonth	0.0279	0.0207	0.0391	0.0291	-0.00106
	(0.051)	(0.014)	(0.043)	(0.087)	(0.086)
1.pandemicyear#4.refmonth	0.0528	0.0183	0.0504	0.0236	0.0483
	(0.058)	(0.015)	(0.045)	(0.072)	(0.096)
1.pandemicyear#5.refmonth	0.0103	0.00120	0.0138	0.167**	0.0177
	(0.064)	(0.014)	(0.043)	(0.083)	(0.094)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.0967	0.0472***	0.0444	0.0865	-0.0237
	(0.059)	(0.014)	(0.041)	(0.074)	(0.096)
1.pandemicyear#8.refmonth	0.123**	0.103***	0.124***	0.145*	0.0736
	(0.061)	(0.014)	(0.041)	(0.085)	(0.093)
1.pandemicyear#9.refmonth	0.0931	0.104***	0.213***	0.180**	0.169*
	(0.059)	(0.015)	(0.040)	(0.076)	(0.094)
1.pandemicyear#10.refmonth	0.124**	0.0801***	0.168***	0.349***	-0.0225
	(0.059)	(0.016)	(0.044)	(0.086)	(0.098)
1.pandemicyear#11.refmonth	0.106*	0.0853***	0.182***	0.195**	0.0749
	(0.064)	(0.015)	(0.045)	(0.089)	(0.098)
1.pandemicyear#12.refmonth	0.139**	0.0978***	0.207***	0.131*	0.163
	(0.061)	(0.015)	(0.048)	(0.079)	(0.101)
1.pandemicyear#13.refmonth	0.101*	0.1000***	0.178***	0.130	0.138
	(0.059)	(0.015)	(0.044)	(0.087)	(0.094)
1.pandemicyear	-0.0233	-0.0194*	-0.00495	-0.0929	0.0185
	(0.042)	(0.011)	(0.031)	(0.057)	(0.072)
1.refmonth	-0.0190	-0.0369***	-0.0710**	-0.0837	-0.0326
	(0.044)	(0.011)	(0.031)	(0.061)	(0.062)
2.refmonth	0.0464	0.0540***	-0.0353	-0.0616	0.0385
	(0.043)	(0.011)	(0.031)	(0.059)	(0.063)
3.refmonth	0.0950**	0.126***	0.0168	0.0691	0.149**
	(0.040)	(0.011)	(0.031)	(0.055)	(0.061)
4.refmonth	0.0854**	0.112***	0.0414	0.0789	0.0736
	(0.039)	(0.011)	(0.032)	(0.054)	(0.061)
5.refmonth	0.0262	-0.0108	-0.0356	-0.0544	0.0570
	(0.042)	(0.011)	(0.030)	(0.053)	(0.061)
6.refmonth			(omitted)		
7.refmonth	0.0391	-0.0208**	-0.0155	0.0104	0.0794
	(0.042)	(0.010)	(0.028)	(0.052)	(0.067)
8.refmonth	-0.0175	-0.0340***	-0.0507*	-0.0327	-0.0167
	(0.041)	(0.011)	(0.029)	(0.057)	(0.062)
9.refmonth	0.0400	-0.0362***	-0.0768**	-0.0168	-0.0172
	(0.037)	(0.011)	(0.030)	(0.053)	(0.062)
10.refmonth	-0.0175	-0.0403***	-0.0836***	-0.123**	0.0847
	(0.045)	(0.011)	(0.032)	(0.062)	(0.062)
11.refmonth	-0.0475	-0.0555***	-0.0982***	-0.0107	-0.0555
	(0.043)	(0.011)	(0.029)	(0.064)	(0.066)
12.refmonth	0.00203	-0.0584***	-0.127***	-0.0759	-0.0256
	(0.042)	(0.010)	(0.032)	(0.056)	(0.068)
13.refmonth	0.00137	-0.0587***	-0.0555*	-0.0163	-0.0702
	(0.038)	(0.011)	(0.034)	(0.059)	(0.065)
_cons	1.916***	1.994***	1.904***	2.256***	2.011***
	(0.034)	(0.009)	(0.026)	(0.045)	(0.050)
N	19139	309917	36253	10770	8906

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-75: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 18: EGGS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.100**	-0.0338***	-0.114***	-0.0884	-0.0246
	(0.040)	(0.010)	(0.030)	(0.054)	(0.062)
1.pandemicyear#2.refmonth	-0.0782**	-0.0580***	-0.0734**	-0.0855*	-0.105*
	(0.035)	(0.011)	(0.030)	(0.049)	(0.061)
1.pandemicyear#3.refmonth	-0.0851**	0.00483	-0.00575	-0.0773	0.0300
	(0.034)	(0.010)	(0.030)	(0.050)	(0.059)
1.pandemicyear#4.refmonth	-0.0291	0.0613***	0.0215	0.0464	0.171***
	(0.036)	(0.011)	(0.028)	(0.050)	(0.059)
1.pandemicyear#5.refmonth	-0.0453	0.0281***	0.00672	0.0461	0.101*
	(0.037)	(0.010)	(0.029)	(0.047)	(0.056)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.169***	0.194***	0.179***	0.119**	0.272***
	(0.034)	(0.010)	(0.032)	(0.052)	(0.055)
1.pandemicyear#8.refmonth	0.260***	0.336***	0.300***	0.285***	0.370***
	(0.037)	(0.011)	(0.028)	(0.052)	(0.064)
1.pandemicyear#9.refmonth	0.340***	0.406***	0.343***	0.308***	0.392***
	(0.042)	(0.011)	(0.028)	(0.059)	(0.056)
1.pandemicyear#10.refmonth	0.328***	0.371***	0.350***	0.250***	0.352***
	(0.039)	(0.011)	(0.034)	(0.053)	(0.063)
1.pandemicyear#11.refmonth	0.238***	0.324***	0.301***	0.358***	0.387***
	(0.037)	(0.011)	(0.034)	(0.052)	(0.059)
1.pandemicyear#12.refmonth	0.210***	0.303***	0.224***	0.259***	0.373***
	(0.037)	(0.012)	(0.034)	(0.054)	(0.066)
1.pandemicyear#13.refmonth	0.199***	0.258***	0.198***	0.292***	0.236***
	(0.043)	(0.013)	(0.035)	(0.052)	(0.061)
1.pandemicyear	-0.0263	-0.0777***	-0.0227	-0.0356	-0.0910**
	(0.028)	(0.008)	(0.023)	(0.039)	(0.045)
1.refmonth	-0.0224	0.00302	0.0735***	0.0191	-0.0382
	(0.026)	(0.007)	(0.019)	(0.037)	(0.045)
2.refmonth	-0.0231	0.0339***	0.0433**	0.00316	0.0357
	(0.024)	(0.007)	(0.020)	(0.034)	(0.040)
3.refmonth	0.114***	0.160***	0.165***	0.0656*	0.110***
	(0.024)	(0.007)	(0.019)	(0.036)	(0.039)
4.refmonth	0.126***	0.195***	0.209***	0.0549	0.107***
	(0.023)	(0.008)	(0.019)	(0.035)	(0.039)
5.refmonth	0.0363	0.0169**	0.0532***	-0.00889	-0.00545
	(0.026)	(0.007)	(0.020)	(0.036)	(0.040)
6.refmonth			(omitted)		
7.refmonth	-0.0421*	-0.0361***	-0.0202	0.0194	-0.113***
	(0.023)	(0.007)	(0.022)	(0.034)	(0.036)
8.refmonth	-0.0373	-0.0291***	-0.0125	-0.0433	-0.0853**
	(0.025)	(0.007)	(0.018)	(0.035)	(0.041)
9.refmonth	-0.164***	-0.142***	-0.0817***	-0.132***	-0.174***
	(0.030)	(0.008)	(0.020)	(0.043)	(0.040)
10.refmonth	-0.237***	-0.212***	-0.183***	-0.142***	-0.208***
	(0.025)	(0.009)	(0.024)	(0.037)	(0.046)
11.refmonth	-0.202***	-0.223***	-0.161***	-0.181***	-0.302***
	(0.030)	(0.008)	(0.022)	(0.038)	(0.041)
12.refmonth	-0.200***	-0.244***	-0.172***	-0.167***	-0.278***
	(0.028)	(0.008)	(0.023)	(0.042)	(0.043)
13.refmonth	-0.194***	-0.215***	-0.175***	-0.207***	-0.180***
	(0.027)	(0.009)	(0.022)	(0.038)	(0.043)
_cons	1.360***	1.064***	1.102***	1.391***	1.267***
	(0.029)	(0.011)	(0.025)	(0.046)	(0.042)
N	27563	397004	49028	15051	11850

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-76: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 19: CONDIMENTS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0785**	0.00102	0.0413	0.0824	-0.0179
	(0.038)	(0.010)	(0.030)	(0.058)	(0.059)
1.pandemicyear#2.refmonth	0.0258	-0.0249**	0.00600	0.0901*	-0.0388
	(0.039)	(0.011)	(0.032)	(0.047)	(0.059)
1.pandemicyear#3.refmonth	-0.0248	-0.0323***	0.0206	0.0748	0.00720
	(0.045)	(0.010)	(0.030)	(0.061)	(0.058)
1.pandemicyear#4.refmonth	-0.0833**	-0.0214**	-0.0169	0.0989*	0.0502
	(0.040)	(0.011)	(0.029)	(0.055)	(0.064)
1.pandemicyear#5.refmonth	-0.00694	-0.00259	-0.0136	0.139***	0.0621
	(0.040)	(0.011)	(0.030)	(0.052)	(0.065)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.259***	0.181***	0.261***	0.259***	0.182***
	(0.044)	(0.011)	(0.031)	(0.053)	(0.064)
1.pandemicyear#8.refmonth	0.337***	0.184***	0.323***	0.368***	0.258***
	(0.041)	(0.011)	(0.032)	(0.063)	(0.065)
1.pandemicyear#9.refmonth	0.267***	0.213***	0.306***	0.334***	0.252***
	(0.046)	(0.012)	(0.030)	(0.061)	(0.065)
1.pandemicyear#10.refmonth	0.172***	0.166***	0.255***	0.341***	0.143**
	(0.039)	(0.011)	(0.029)	(0.051)	(0.067)
1.pandemicyear#11.refmonth	0.187***	0.142***	0.203***	0.332***	0.169***
	(0.044)	(0.011)	(0.033)	(0.052)	(0.063)
1.pandemicyear#12.refmonth	0.125***	0.159***	0.211***	0.350***	0.194***
	(0.048)	(0.010)	(0.034)	(0.049)	(0.066)
1.pandemicyear#13.refmonth	0.0929**	0.149***	0.167***	0.310***	0.0534
	(0.042)	(0.010)	(0.030)	(0.058)	(0.061)
1.pandemicyear	0.00603	-0.00227	-0.00923	-0.0862**	0.0131
	(0.029)	(0.008)	(0.022)	(0.042)	(0.047)
1.refmonth	0.0117	-0.0275***	-0.0534**	0.00285	-0.0499
	(0.028)	(0.008)	(0.021)	(0.041)	(0.043)
2.refmonth	-0.0317	0.0251***	-0.0226	0.0360	-0.00639
	(0.027)	(0.008)	(0.022)	(0.035)	(0.041)
3.refmonth	0.0961***	0.108***	0.119***	0.0310	0.0679
	(0.029)	(0.007)	(0.021)	(0.043)	(0.043)
4.refmonth	0.0922***	0.0979***	0.0620***	0.0494	-0.0420
	(0.027)	(0.007)	(0.022)	(0.039)	(0.048)
5.refmonth	0.0337	0.0525***	0.0524***	-0.0283	-0.0617
	(0.028)	(0.007)	(0.020)	(0.041)	(0.044)
6.refmonth			(omitted)		
7.refmonth	-0.00615	0.00378	-0.0189	-0.0135	-0.0154
	(0.030)	(0.007)	(0.022)	(0.040)	(0.043)
8.refmonth	-0.0447	0.0208***	-0.0225	-0.0718*	-0.0349
	(0.028)	(0.007)	(0.022)	(0.039)	(0.045)
9.refmonth	0.00373	0.0318***	0.000468	-0.0399	-0.0420
	(0.025)	(0.008)	(0.023)	(0.039)	(0.047)
10.refmonth	-0.0115	-0.000645	-0.0338	-0.0304	0.0225
	(0.027)	(0.008)	(0.021)	(0.038)	(0.044)
11.refmonth	-0.0166	0.0254***	0.0113	-0.0624	-0.0163
	(0.028)	(0.008)	(0.024)	(0.041)	(0.041)
12.refmonth	-0.0129	-0.0191**	-0.0640***	-0.0436	-0.0517
	(0.030)	(0.007)	(0.023)	(0.037)	(0.046)
13.refmonth	-0.00346	0.00367	0.0327	-0.0765**	-0.00806
	(0.028)	(0.007)	(0.022)	(0.039)	(0.045)
_cons	2.271***	2.240***	2.191***	2.202***	2.311***
	(0.025)	(0.007)	(0.019)	(0.039)	(0.040)
N	39313	593731	75693	20548	17849

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-77: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 20: COFFEE AND TEA

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0162	0.0354***	0.0534	0.176**	0.0952
	(0.055)	(0.013)	(0.040)	(0.082)	(0.075)
1.pandemicyear#2.refmonth	0.0129	0.0196	0.0929**	0.0999	0.00962
	(0.052)	(0.013)	(0.038)	(0.077)	(0.069)
1.pandemicyear#3.refmonth	-0.0313	0.0379***	0.0682*	0.105	0.0771
	(0.053)	(0.012)	(0.038)	(0.072)	(0.073)
1.pandemicyear#4.refmonth	0.0264	0.0772***	0.127***	0.248***	0.137*
	(0.053)	(0.013)	(0.043)	(0.082)	(0.077)
1.pandemicyear#5.refmonth	0.118**	0.0818***	0.0307	0.217***	0.124*
	(0.051)	(0.014)	(0.039)	(0.072)	(0.070)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.184***	0.108***	0.132***	0.163**	0.143*
	(0.044)	(0.013)	(0.039)	(0.074)	(0.074)
1.pandemicyear#8.refmonth	0.0698	0.105***	0.189***	0.0981	0.191**
	(0.055)	(0.013)	(0.037)	(0.074)	(0.075)
1.pandemicyear#9.refmonth	0.148***	0.130***	0.190***	0.0999	0.150**
	(0.054)	(0.013)	(0.039)	(0.089)	(0.073)
1.pandemicyear#10.refmonth	0.132***	0.118***	0.165***	0.256***	0.176**
	(0.050)	(0.013)	(0.041)	(0.076)	(0.074)
1.pandemicyear#11.refmonth	0.153***	0.143***	0.179***	0.214***	0.128*
	(0.051)	(0.013)	(0.037)	(0.078)	(0.078)
1.pandemicyear#12.refmonth	0.126**	0.129***	0.192***	0.203***	0.120
	(0.053)	(0.013)	(0.042)	(0.071)	(0.078)
1.pandemicyear#13.refmonth	0.0772	0.114***	0.191***	0.106	0.238***
	(0.053)	(0.013)	(0.044)	(0.077)	(0.079)
1.pandemicyear	-0.0238	-0.0303***	-0.0319	-0.101*	-0.0916*
	(0.038)	(0.009)	(0.029)	(0.058)	(0.054)
1.refmonth	-0.0220	-0.0490***	-0.0331	-0.0911*	-0.0625
	(0.038)	(0.009)	(0.028)	(0.049)	(0.052)
2.refmonth	-0.0283	-0.00902	-0.0599**	-0.0327	-0.0133
	(0.038)	(0.009)	(0.027)	(0.052)	(0.050)
3.refmonth	0.0342	-0.00326	-0.0506**	-0.0390	-0.0482
	(0.035)	(0.009)	(0.025)	(0.052)	(0.049)
4.refmonth	-0.0214	-0.0553***	-0.0839***	-0.0981*	-0.102*
	(0.037)	(0.010)	(0.029)	(0.056)	(0.056)
5.refmonth	-0.0718**	-0.0792***	-0.0207	-0.176***	-0.0901*
	(0.036)	(0.011)	(0.030)	(0.052)	(0.053)
6.refmonth			(omitted)		
7.refmonth	-0.0387	-0.0259***	-0.00958	-0.0333	-0.0600
	(0.034)	(0.009)	(0.028)	(0.057)	(0.053)
8.refmonth	-0.0165	-0.0387***	-0.0776***	0.0110	-0.0456
	(0.038)	(0.009)	(0.028)	(0.059)	(0.049)
9.refmonth	-0.0450	-0.0424***	-0.0696***	-0.0588	-0.0187
	(0.039)	(0.009)	(0.025)	(0.056)	(0.052)
10.refmonth	-0.0359	-0.0498***	-0.0477*	-0.108*	-0.0953*
	(0.035)	(0.009)	(0.027)	(0.058)	(0.052)
11.refmonth	-0.0714**	-0.0723***	-0.0649***	-0.0565	-0.0207
	(0.036)	(0.009)	(0.025)	(0.057)	(0.054)
12.refmonth	-0.107***	-0.0771***	-0.0931***	-0.118**	-0.0486
	(0.036)	(0.009)	(0.029)	(0.047)	(0.052)
13.refmonth	-0.0268	-0.0460***	-0.0568*	-0.0572	-0.0729
	(0.040)	(0.009)	(0.031)	(0.046)	(0.054)
_cons	2.325***	2.381***	2.087***	2.413***	2.385***
	(0.030)	(0.008)	(0.025)	(0.049)	(0.043)
N	27864	394101	47467	13092	12087

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-78: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 21: SOFT DRINKS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0499	-0.0138	-0.00533	-0.00748	0.0223
	(0.044)	(0.012)	(0.031)	(0.073)	(0.076)
1.pandemicyear#2.refmonth	-0.0156	-0.00632	0.0120	-0.0548	-0.0332
	(0.047)	(0.012)	(0.030)	(0.081)	(0.079)
1.pandemicyear#3.refmonth	-0.0449	0.00214	0.0179	-0.00372	0.0493
	(0.047)	(0.012)	(0.029)	(0.072)	(0.075)
1.pandemicyear#4.refmonth	-0.0474	-0.00759	0.0157	0.0389	-0.0901
	(0.048)	(0.013)	(0.031)	(0.071)	(0.069)
1.pandemicyear#5.refmonth	0.0124	-0.0349***	-0.0332	-0.0443	-0.0442
	(0.048)	(0.013)	(0.033)	(0.071)	(0.071)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.131***	0.119***	0.212***	0.108	0.0534
	(0.046)	(0.013)	(0.031)	(0.076)	(0.079)
1.pandemicyear#8.refmonth	0.0493	0.0984***	0.158***	0.197***	0.0570
	(0.043)	(0.012)	(0.034)	(0.069)	(0.071)
1.pandemicyear#9.refmonth	0.189***	0.159***	0.157***	0.233***	0.121
	(0.046)	(0.012)	(0.034)	(0.071)	(0.077)
1.pandemicyear#10.refmonth	0.124***	0.123***	0.136***	0.151*	0.140*
	(0.043)	(0.012)	(0.036)	(0.077)	(0.073)
1.pandemicyear#11.refmonth	0.0581	0.0965***	0.118***	0.155**	0.0954
	(0.047)	(0.012)	(0.031)	(0.067)	(0.075)
1.pandemicyear#12.refmonth	0.114**	0.103***	0.120***	0.207***	0.0840
	(0.045)	(0.013)	(0.036)	(0.070)	(0.075)
1.pandemicyear#13.refmonth	0.0801*	0.105***	0.111***	0.152**	0.0805
	(0.047)	(0.012)	(0.033)	(0.075)	(0.077)
1.pandemicyear	0.0305	0.0186**	0.0185	-0.00857	0.0266
	(0.034)	(0.009)	(0.023)	(0.056)	(0.056)
1.refmonth	0.0380	0.00335	0.0116	-0.0175	-0.00526
	(0.033)	(0.009)	(0.025)	(0.053)	(0.054)
2.refmonth	0.0488	-0.00532	-0.0254	0.00373	-0.0275
	(0.034)	(0.009)	(0.021)	(0.048)	(0.055)
3.refmonth	0.0495*	0.0106	-0.0253	0.0152	-0.0416
	(0.030)	(0.009)	(0.022)	(0.050)	(0.055)
4.refmonth	0.0310	0.00302	-0.000166	-0.0551	-0.0104
	(0.034)	(0.009)	(0.023)	(0.056)	(0.052)
5.refmonth	0.0356	0.0332***	0.0530**	0.000613	0.0141
	(0.033)	(0.009)	(0.023)	(0.057)	(0.049)
6.refmonth			(omitted)		
7.refmonth	0.0586*	0.0325***	0.0180	0.00602	0.0224
	(0.033)	(0.009)	(0.023)	(0.051)	(0.058)
8.refmonth	0.0700**	0.0423***	0.00445	-0.0630	0.0238
	(0.033)	(0.009)	(0.023)	(0.053)	(0.051)
9.refmonth	0.0746**	0.0498***	0.0538**	-0.0353	0.0559
	(0.031)	(0.009)	(0.025)	(0.047)	(0.053)
10.refmonth	0.0723**	0.0617***	0.0457*	0.0630	0.0790
	(0.030)	(0.008)	(0.024)	(0.052)	(0.055)
11.refmonth	0.153***	0.103***	0.0960***	0.0693	0.0736
	(0.037)	(0.009)	(0.023)	(0.049)	(0.054)
12.refmonth	0.0806**	0.0428***	0.0483**	-0.0289	0.0794
	(0.033)	(0.009)	(0.022)	(0.049)	(0.050)
13.refmonth	0.151***	0.0770***	0.0797***	0.0458	0.121**
	(0.033)	(0.008)	(0.023)	(0.057)	(0.055)
_cons	2.296***	2.340***	2.226***	2.217***	2.354***
	(0.027)	(0.008)	(0.020)	(0.041)	(0.047)
N	35437	512246	69588	16567	15751

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-79: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 22: SWEETS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0479	-0.0249**	-0.0353	0.0394	-0.115*
	(0.047)	(0.011)	(0.029)	(0.064)	(0.066)
1.pandemicyear#2.refmonth	-0.00727	-0.0346***	-0.0262	0.0309	0.0376
	(0.047)	(0.011)	(0.033)	(0.066)	(0.064)
1.pandemicyear#3.refmonth	-0.0670	-0.0690***	-0.0566*	-0.0758	-0.167**
	(0.050)	(0.011)	(0.029)	(0.075)	(0.066)
1.pandemicyear#4.refmonth	-0.0219	0.0195*	-0.0170	0.00474	-0.0174
	(0.049)	(0.011)	(0.034)	(0.080)	(0.068)
1.pandemicyear#5.refmonth	0.000260	-0.0179	-0.0375	-0.0591	0.0221
	(0.047)	(0.011)	(0.031)	(0.070)	(0.063)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.151***	0.102***	0.123***	0.102	0.128*
	(0.046)	(0.011)	(0.030)	(0.068)	(0.068)
1.pandemicyear#8.refmonth	0.0692*	-0.00535	0.0707**	-0.00293	0.0436
	(0.042)	(0.011)	(0.032)	(0.059)	(0.068)
1.pandemicyear#9.refmonth	0.175***	0.150***	0.140***	0.0264	0.111*
	(0.047)	(0.011)	(0.029)	(0.070)	(0.066)
1.pandemicyear#10.refmonth	0.104**	0.125***	0.117***	0.0149	0.111*
	(0.045)	(0.011)	(0.029)	(0.067)	(0.063)
1.pandemicyear#11.refmonth	0.0836*	0.0834***	0.0674**	0.0796	0.105
	(0.048)	(0.011)	(0.030)	(0.066)	(0.064)
1.pandemicyear#12.refmonth	0.140***	0.0744***	0.0994***	0.0537	0.113*
	(0.051)	(0.012)	(0.033)	(0.068)	(0.066)
1.pandemicyear#13.refmonth	0.114**	0.0780***	0.0866***	0.0613	0.0576
	(0.048)	(0.011)	(0.030)	(0.071)	(0.065)
1.pandemicyear	0.0354	0.0339***	0.0519**	0.0513	0.0473
	(0.036)	(0.008)	(0.022)	(0.053)	(0.052)
1.refmonth	0.0255	0.0183**	-0.0484**	0.0374	0.0437
	(0.036)	(0.008)	(0.020)	(0.053)	(0.048)
2.refmonth	0.191***	0.233***	0.112***	0.228***	0.131**
	(0.038)	(0.008)	(0.023)	(0.053)	(0.051)
3.refmonth	0.146***	0.206***	0.0771***	0.150**	0.160***
	(0.037)	(0.008)	(0.021)	(0.067)	(0.050)
4.refmonth	0.227***	0.252***	0.150***	0.234***	0.206***
	(0.039)	(0.009)	(0.021)	(0.057)	(0.054)
5.refmonth	-0.0801**	-0.127***	-0.0917***	-0.140**	-0.112**
	(0.039)	(0.008)	(0.023)	(0.060)	(0.051)
6.refmonth			(omitted)		
7.refmonth	-0.0196	-0.0259***	-0.0709***	-0.0650	-0.0494
	(0.034)	(0.008)	(0.020)	(0.052)	(0.049)
8.refmonth	0.151***	0.174***	0.0625***	0.0812	0.126**
	(0.034)	(0.008)	(0.024)	(0.055)	(0.050)
9.refmonth	-0.135***	-0.132***	-0.0765***	-0.110*	-0.0796*
	(0.035)	(0.008)	(0.023)	(0.056)	(0.047)
10.refmonth	-0.160***	-0.175***	-0.145***	-0.137**	-0.133***
	(0.036)	(0.008)	(0.021)	(0.057)	(0.047)
11.refmonth	-0.160***	-0.155***	-0.134***	-0.152***	-0.153***
	(0.039)	(0.009)	(0.021)	(0.056)	(0.047)
12.refmonth	-0.179***	-0.157***	-0.146***	-0.141**	-0.169***
	(0.038)	(0.008)	(0.024)	(0.056)	(0.052)
13.refmonth	-0.160***	-0.120***	-0.119***	-0.112**	-0.0744
	(0.036)	(0.008)	(0.022)	(0.054)	(0.048)
_cons	2.226***	2.345***	2.140***	2.183***	2.311***
	(0.033)	(0.008)	(0.018)	(0.046)	(0.044)
N	37799	581013	73768	18156	17335

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-80: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 23: SOUPS

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	-0.0576	-0.0108	-0.0469	0.0691	0.0767
	(0.062)	(0.015)	(0.046)	(0.071)	(0.090)
1.pandemicyear#2.refmonth	0.0454	-0.0222	-0.0680	0.0531	0.0954
	(0.052)	(0.014)	(0.046)	(0.076)	(0.087)
1.pandemicyear#3.refmonth	-0.0449	0.00782	-0.0241	0.0990	-0.0470
	(0.060)	(0.014)	(0.040)	(0.068)	(0.077)
1.pandemicyear#4.refmonth	0.0159	0.00608	-0.0256	0.161**	-0.0550
	(0.054)	(0.014)	(0.038)	(0.079)	(0.078)
1.pandemicyear#5.refmonth	-0.00711	-0.0276*	-0.0104	0.0786	-0.0544
	(0.061)	(0.015)	(0.041)	(0.082)	(0.081)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.313***	0.269***	0.209***	0.279***	0.292***
	(0.059)	(0.015)	(0.042)	(0.075)	(0.092)
1.pandemicyear#8.refmonth	0.154***	0.178***	0.193***	0.240***	0.141
	(0.052)	(0.014)	(0.044)	(0.071)	(0.092)
1.pandemicyear#9.refmonth	0.156***	0.132***	0.157***	0.221***	0.0319
	(0.058)	(0.015)	(0.043)	(0.075)	(0.094)
1.pandemicyear#10.refmonth	0.146**	0.101***	0.0860**	0.0846	0.0710
	(0.065)	(0.016)	(0.043)	(0.079)	(0.099)
1.pandemicyear#11.refmonth	0.147**	0.119***	0.0546	0.101	0.221**
	(0.062)	(0.016)	(0.048)	(0.082)	(0.092)
1.pandemicyear#12.refmonth	0.111*	0.0402***	0.115***	0.131*	0.245***
	(0.060)	(0.016)	(0.042)	(0.072)	(0.092)
1.pandemicyear#13.refmonth	0.139**	0.0349**	0.0938**	0.124*	0.128
	(0.061)	(0.015)	(0.047)	(0.073)	(0.095)
1.pandemicyear	0.0163	0.00987	0.0306	-0.0331	-0.0117
	(0.041)	(0.010)	(0.030)	(0.053)	(0.063)
1.refmonth	-0.0466	-0.00425	0.0000853	-0.0893*	-0.115*
	(0.041)	(0.011)	(0.030)	(0.053)	(0.065)
2.refmonth	0.0186	0.0975***	0.0831***	0.0433	-0.0310
	(0.043)	(0.011)	(0.032)	(0.059)	(0.058)
3.refmonth	0.0429	0.0465***	0.0808***	0.0231	-0.00769
	(0.042)	(0.011)	(0.029)	(0.049)	(0.057)
4.refmonth	-0.0482	-0.0179*	0.0202	-0.0792	-0.0402
	(0.043)	(0.010)	(0.028)	(0.054)	(0.056)
5.refmonth	0.0315	0.0811***	0.0683**	-0.00333	0.0134
	(0.044)	(0.010)	(0.027)	(0.056)	(0.056)
6.refmonth			(omitted)		
7.refmonth	-0.0705	-0.116***	-0.0500*	-0.102**	-0.140**
	(0.046)	(0.010)	(0.030)	(0.052)	(0.063)
8.refmonth	-0.127***	-0.202***	-0.133***	-0.209***	-0.165**
	(0.046)	(0.011)	(0.034)	(0.044)	(0.065)
9.refmonth	-0.185***	-0.248***	-0.196***	-0.240***	-0.227***
	(0.044)	(0.011)	(0.031)	(0.058)	(0.067)
10.refmonth	-0.308***	-0.302***	-0.173***	-0.239***	-0.263***
	(0.045)	(0.012)	(0.030)	(0.058)	(0.071)
11.refmonth	-0.264***	-0.329***	-0.237***	-0.237***	-0.361***
	(0.044)	(0.012)	(0.032)	(0.058)	(0.061)
12.refmonth	-0.241***	-0.258***	-0.189***	-0.239***	-0.282***
	(0.045)	(0.011)	(0.032)	(0.055)	(0.071)
13.refmonth	-0.148***	-0.157***	-0.137***	-0.0918	-0.229***
	(0.045)	(0.011)	(0.035)	(0.060)	(0.072)
_cons	1.574***	1.604***	1.472***	1.813***	1.721***
	(0.034)	(0.009)	(0.023)	(0.045)	(0.050)
N	19959	327992	36799	11460	9529

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

Table C-81: Regression results of household spending during the early pandemic response environment among households without school-age children across race groups for CATEGORY 24: ENTREES

	Dependent variable: natural log of monthly aggregated category-specific household purchases				
Independent	(1)	(2)	(3)	(4)	(5)
variable	Hispanic	White	Black	Asian	Others
1.pandemicyear#1.refmonth	0.0142	0.0309**	-0.0214	0.0910	0.164**
	(0.044)	(0.013)	(0.035)	(0.064)	(0.068)
1.pandemicyear#2.refmonth	0.0645	-0.00718	-0.0158	0.0358	0.191***
	(0.040)	(0.011)	(0.034)	(0.061)	(0.067)
1.pandemicyear#3.refmonth	-0.0105	-0.0251**	-0.00310	0.0509	-0.00901
	(0.043)	(0.012)	(0.036)	(0.067)	(0.076)
1.pandemicyear#4.refmonth	0.00160	-0.00333	-0.0440	0.0520	0.0858
	(0.041)	(0.011)	(0.035)	(0.066)	(0.066)
1.pandemicyear#5.refmonth	0.00257	-0.0289***	-0.107***	0.0369	0.196***
	(0.042)	(0.011)	(0.034)	(0.066)	(0.066)
1.pandemicyear#6.refmonth			(omitted)		
1.pandemicyear#7.refmonth	0.199***	0.116***	0.137***	0.151***	0.241***
	(0.039)	(0.011)	(0.038)	(0.055)	(0.069)
1.pandemicyear#8.refmonth	0.176***	0.0786***	0.153***	0.0931	0.120*
	(0.043)	(0.012)	(0.033)	(0.069)	(0.067)
1.pandemicyear#9.refmonth	0.226***	0.110***	0.146***	0.158**	0.202***
	(0.044)	(0.012)	(0.034)	(0.065)	(0.070)
1.pandemicyear#10.refmonth	0.124***	0.0591***	0.141***	0.0702	0.176***
	(0.044)	(0.012)	(0.034)	(0.062)	(0.062)
1.pandemicyear#11.refmonth	0.148***	0.0880***	0.110***	0.140**	0.201***
	(0.044)	(0.012)	(0.036)	(0.068)	(0.072)
1.pandemicyear#12.refmonth	0.0951**	0.0637***	0.0916***	0.0660	0.209***
	(0.041)	(0.011)	(0.032)	(0.078)	(0.069)
1.pandemicyear#13.refmonth	0.0945**	0.0348***	0.0508	0.0616	0.243***
	(0.042)	(0.012)	(0.036)	(0.070)	(0.072)
1.pandemicyear	-0.0108	0.0203**	0.0350	-0.0137	-0.0946**
	(0.028)	(0.008)	(0.025)	(0.048)	(0.047)
1.refmonth	-0.125***	-0.0743***	-0.0509**	-0.132***	-0.152***
	(0.037)	(0.009)	(0.025)	(0.043)	(0.048)
2.refmonth	-0.103***	-0.0258***	-0.0550**	0.000843	-0.183***
	(0.030)	(0.008)	(0.025)	(0.043)	(0.048)
3.refmonth	-0.0926***	-0.0713***	-0.0808***	-0.0165	-0.0818
	(0.032)	(0.008)	(0.025)	(0.044)	(0.055)
4.refmonth	-0.0610**	-0.0436***	-0.0194	-0.0195	-0.110**
	(0.031)	(0.008)	(0.025)	(0.044)	(0.049)
5.refmonth	0.0252	0.0494***	0.0880***	0.0257	-0.0890*
	(0.029)	(0.008)	(0.022)	(0.045)	(0.047)
6.refmonth			(omitted)		
7.refmonth	-0.0534*	-0.00228	-0.0122	0.00975	-0.130***
	(0.032)	(0.008)	(0.024)	(0.041)	(0.048)
8.refmonth	-0.122***	-0.0626***	-0.0524**	-0.0491	-0.0982**
	(0.034)	(0.008)	(0.023)	(0.050)	(0.047)
9.refmonth	-0.136***	-0.0506***	-0.0169	-0.0769*	-0.0735
	(0.033)	(0.008)	(0.023)	(0.045)	(0.048)
10.refmonth	-0.111***	-0.0580***	-0.0687***	-0.0439	-0.104**
	(0.031)	(0.008)	(0.023)	(0.043)	(0.045)
11.refmonth	-0.1000***	-0.0766***	-0.0746***	-0.0808*	-0.135***
	(0.034)	(0.008)	(0.023)	(0.043)	(0.052)
12.refmonth	-0.0478	-0.0567***	-0.0666***	-0.0200	-0.162***
	(0.033)	(0.008)	(0.022)	(0.049)	(0.050)
13.refmonth	-0.0784***	-0.0392***	-0.0391	-0.00480	-0.174***
	(0.030)	(0.008)	(0.025)	(0.048)	(0.049)
_cons	2.703***	2.700***	2.561***	2.673***	2.788***
	(0.025)	(0.008)	(0.023)	(0.035)	(0.040)
N	31243	492011	56566	16813	13734

Significance levels: * 10 percent, ** 5 percent, *** 1 percent. Standard errors (in parentheses) are clustered by county.
Only estimated coefficients (and their standard errors) for interaction terms are used for the event-study plots.

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