Spending Less After (Seemingly) Bad News

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Abstract

Using high-frequency spending data, we show that household consumption displays excess sensitivity to salient macro-economic news, even when the news is not real. When the announced local unemployment rate reaches a 12-month maximum, local news coverage of unemployment increases and local consumers reduce their discretionary spending by 2% relative to consumers in areas with the same macro-economic fundamentals. The consumption of low-income households displays greater excess sensitivity to salience. The decrease in spending is not reversed in subsequent months; instead, negative news persistently reduces future spending for two to four months. Households in treated areas act as if they are more financially constrained than those in untreated areas with the same fundamentals.

Keywords: Household consumption, consumer sentiment, excess sensitivity of consumption.

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I Introduction

The large drop in U.S. household spending at the onset of the 2020 pandemic was largely due to the lockdown itself (see, e.g. Baker, Farrokhnia, Meyer, Pagel, and Yannelis, 2020; Cox, Ganong, Noel, Vavra, Wong, Farrell, and Greig, 2020, for recent evidence). Other contributing factors to this consumption drop were binding financial constraints, wealth effects and downward revisions of expected future income growth, and increased uncertainty. We argue that salient news effects may also have independently contributed to the unprecedented decline in spending.[1]

We find that salient news coverage plays an important role in determining household spending. Consumers respond to the salience of adverse macro announcements about their region by cutting back on discretionary spending even when the news is uninformative about local macro-economic fundamentals. Consumers whose areas are treated with negative economic news, especially the poorer ones with lower educational attainment, act as if they are more financially constrained than those in untreated areas, even though underlying economic conditions do not differ across these regions. Seemingly bad news contributes significantly to sharp consumption drops.

This empirically observed behavior of household consumption is at odds with the predictions of standard neo-classical models of intertemporal optimization. We document a new form of deviation from standard models: the excess sensitivity of consumption to salient macro news. A rational household with standard expected utility that is optimizing intertemporally would not change its consumption in response to salient news unrelated to actual fundamentals. Our findings cannot be attributed to binding household liquidity or solvency constraints, because the actual household income and balance sheet is unaffected by the salience of the announcements.

We use local unemployment announcements at the CBSA (Core Based Statistical Area) level as a natural experiment to measure the response of consumption to salient news in high-frequency

[1] On March 18, 2020, during the onset of the COVID-19 crisis, the U.S. Department of Labor sent guidance to state labor agencies asking for a delay in the release of unemployment claims data (*Wall Street Journal*, March 19, 2020, "Trump Administration Asks States to Keep Quiet About Jobless Figures").

household spending data. We begin by showing that U.S. newspapers devote attention to local unemployment announcements; there is substantially more coverage of unemployment on dates close to local unemployment releases. The announcement of a 12-month local unemployment maximum, in particular, is a salient event for local media that leads to especially heightened coverage. In fact, we find that local news interest in unemployment peaks specifically at 12-month maximums.

We study the impact of 12-month maximums and the accompanying local media spotlight on unemployment by comparing the spending of households in areas that reach a new local maximum to the spending of similar households living in areas with the same macro fundamentals that do not reach a new maximum. We show that an announcement of a 12-month maximum in the local unemployment rate leads to a 2% drop in discretionary spending in the two weeks after the announcement. Announcement of near maximums have no effect on spending, while false maximums (announced maximums that are later revised to be non-maximums) have the same impact on consumers as actual maximums. We use real-time measurement error in unemployment announcements to identify the true announcement effect. Together these results provide evidence of a behavioral response by consumers to salient economic news. Spending drops after 12-month maximums but not after maximums at other horizons. Our empirical strategy is similar to recent work by Chodorow-Reich, Coglianese, and Karabarbounis (2019) who study the macro-economic effects of unemployment benefit extensions.

An increase in the unemployment rate represents an increase in the uncertainty faced by households. Households face a higher probability of job loss. An unemployment spell can be thought of as the realization of household-specific income disaster with potentially long-lasting effects on earnings (see Guvenen, Karahan, Ozkan, and Song, 2017). Standard consumer theory predicts that consumers respond to an increase in uncertainty by immediately reducing spending and saving more instead (Kimball, 1990; Ganong and Noel, 2019). As a result of precautionary savings, a perceived increase in uncertainty in a CBSA would lead to a local reduction in consumption. In

addition, households may rationally revise their expectations of future earnings downwards and reduce consumption accordingly, in line with the permanent income hypothesis, when a higher unemployment rate is announced.

Our empirical design allows us to rule out these alternative, rational explanations of our findings: consumers are not responding to the actual unemployment rate, but to the announced rate, and then only when the announcement is salient. Even when we control for the announced unemployment rate, for whether the rate is strictly increasing or for the change in the unemployment rate, we find that 12-month maximums have an additional effect in reducing spending. Moreover, we do not observe a pre-trend of declining spending before a 12-month maximum is announced; consumers sharply reduce their spending after the announcements themselves and do not appear to be responding to any general deterioration in economic conditions.

The announcements also affect financing behavior. We find that a 12-month maximum announcement leads to a 3.6% decrease in credit card repayments. While consumers appear to be drawing down their existing credit lines, we find that they are also less likely to initiate new loans. Salient negative unemployment announcements lead consumers to behave as if the financing environment has quickly become more challenging. Consumers also reduce their cash withdrawals, which is another mechanism for maintaining higher balances in their bank accounts. The consumers in the treated areas act as if they are more financially constrained than those in the control areas, but they are not.

Our findings shed new light on previous studies which have found that the marginal propensity to consume out of wealth was larger for poorer households/areas, using regional consumption data (see Mian, Rao, and Sufi, 2013, for a recent example). Using household-level spending data we find that the consumption response to the salience of macro news varies across households. The resulting decline in household consumption is significantly larger for households with lower income and education. The heterogeneity in excess sensitivity that we describe, however, is a

behavioral response that cannot be attributed to binding liquidity or solvency constraints or to news about fundamentals. Using high-frequency consumption data, Baugh, Ben-David, Park, and Parker (2018) also find evidence that some households may act as if they are liquidity constrained, even when they are not.[2]

Households in the areas that are subject to unemployment maximum announcements reduce their spending significantly and persistently. We find no evidence that the consumption drop is subsequently reversed. On the contrary, we show that a single 12-month maximum unemployment announcement lowers future household discretionary spending at a horizon of two to four months. For areas that achieve a 12-month maximum every month over a five month period, the drop in current spending is close to 5%. Between 2007 and 2018, 119 of the 373 CBSAs experienced such a sequence of 5 consecutive 12-month maximum unemployment announcements, mostly in 2009 during the Great Recession.

Our findings are most convincingly explained by theories of consumer inattention. If consumers were always attentive, salience would not have any effect on their actual spending. There is a wealth of empirical evidence to suggest that investors and consumers do not pay attention to all information relevant to their optimization problem (see DellaVigna, 2009, for an overview). For example, investors do not constantly monitor their portfolios (Brunnermeier and Nagel, 2008). There are two inattention-related interpretations of our findings. In the first supply-driven interpretation, inattentive households respond to salient macro announcements because they learn about the macro-economic conditions from local media coverage, which in turn responds to salience. Households can rationally choose to be inattentive to some information when they are subject to constraints on information processing (Sims, 2003; Reis, 2006; Van Nieuwerburgh and Veldkamp, 2009; Gabaix and Laibson, 2001). Consistent with this supply-side hypothesis, we find that the local news coverage of salient announcements is more intense, presumably because

[2]They document that households act as if they are financially constrained by increasing consumption when they get an expected tax refund but at the same time smoothing consumption when they face payments.

consumers have a taste for salient news. Newspapers cater to the tastes of their readers (Gentzkow and Shapiro, 2010). Our work shows that this slant in the news supply may generate a media-driven effect on household spending.

In the second, more behavioral interpretation, consumers are hardwired to respond more to salient news. Selectively inattentive households choose when they pay attention; their reactions are not driven by the volume of news but rather by its salience. The large response to salient adverse news, especially by low-income households, is consistent with reference-dependent utility models (Kőszegi and Rabin, 2006, 2007, 2009; Pagel, 2017).[3] As shown by Pagel (2017), consumers with reference-dependent utility are less attentive in response to fundamental negative aggregate shocks. Furthermore, low-income households are generally less attentive than high-income households, because of the concavity of utility. Consistent with this demand-side hypothesis, we find much stronger evidence of salience sensitivity for low-income households, and households who are less financially sophisticated.

To the extent that salient news is more likely to spread, social networks may play a special role in propagating salient news within a CBSA (see Bailey, Cao, Kuchler, and Stroebel, 2018; Bailey, Cao, Kuchler, Stroebel, and Wong, 2018, for evidence on social networks and household spending). Shiller (2019) uses historical examples to show how economic stories can propagate like a virus. He refers to this as narrative economics.

Our paper is one of the first to provide causal evidence of a quantitatively important sentiment effect of non-fundamental news on consumption growth. In the time series, measures of consumer confidence and consumption growth are strongly correlated contemporaneously. Further, there is some empirical evidence that measures of consumer confidence predict future consumption growth (Carroll, Fuhrer, and Wilcox, 1994; Ludvigson, 2004). One explanation is that consumer confidence simply reflects the households' expectations of future fundamentals; another explanation

[3] In this class of models, utility is directly affected by the revision of expectations relative to a benchmark. Receiving news causes disutility in expectation, and this effect is larger for low-income households.

is that changes in consumer confidence lead to changes in consumption growth. Ludvigson (2004) concludes that these measures have little incremental forecasting power for consumer spending beyond traditional macro and financial indicators, but Carroll, Fuhrer, and Wilcox (1994) argue that there is a pure sentiment effect in consumption, i.e., that declines in sentiment causally lead to declines in consumption growth. Our work shows a causal effect from sentiment to consumption.

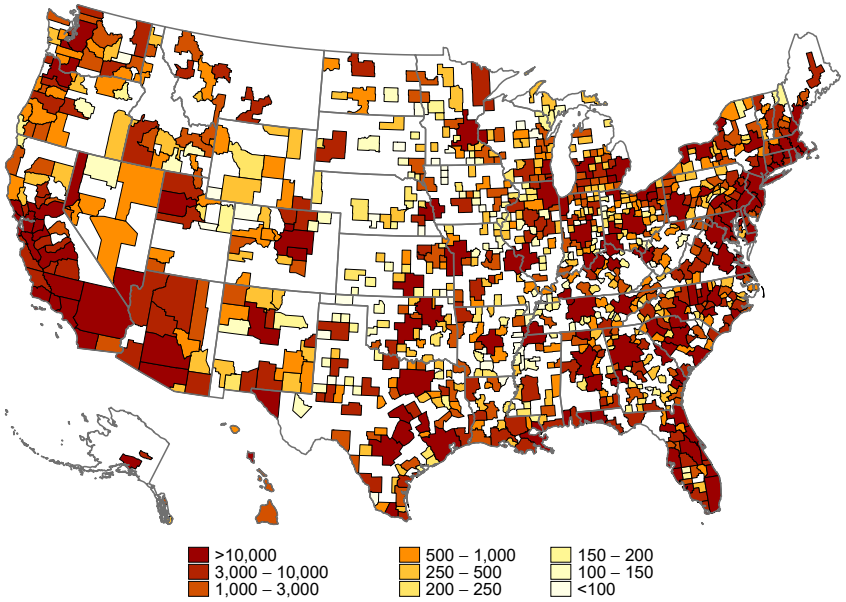
Our results have important implications for inference in studies with aggregated data. MPCs estimated using aggregate data may partly measure the consumption response to salient, adverse economic news, rather than the response to the household's own wealth or income shocks. The heterogeneity that we uncover in the response to salient news is consistent with the heterogeneity in the MPC documented in these other studies (see Hurst and Stafford, 2004; Campbell and Cocco, 2007; Attanasio, Leicester, and Wakefield, 2011; Kaplan, Mitman, and Violante, 2016; Guren, McKay, Nakamura, and Steinsson, 2018; DeFusco, Johnson, and Mondragon, 2020, for recent evidence on the MPC out of housing wealth).

II Data

We study data on the spending of U.S. consumers drawn from information on credit card and bank account transactions compiled by an online account aggregator. We build on recent work using high frequency consumption data by Gelman, Kariv, Shapiro, Silverman, and Tadelis (2014); Olafsson and Pagel (2017, 2018); Baugh, Ben-David, Park, and Parker (2018). The data cover 9,664,860 unique consumers drawn from all 50 U.S. states and the District of Columbia over the period Jan 2011 - Dec 2016. Figure 1 depicts the number of consumers in the sample across CBSAs.

We observe transaction data from 24,827,483 bank accounts and 13,720,261 credit card accounts; consumers hold a mean of 3.99 bank and credit card accounts. The aggregator classifies transactions into different spending categories. Our main interest is in studying discretionary

Figure 1. Population of Sample Consumers Across CBSAs



spending. Table I lists the spending categories that we include in discretionary spending. The transactions are classified into granular spending subcategories by the data provider. We include all those spending subcategories as part of discretionary spending that correspond to industries in the Consumer Discretionary sector according to the Global Industry Classification Standard (GIC code 25).

As we discuss in more detail below, we analyze the impact of unemployment announcements on consumer spending, and we treat the three days around the announcement as the announcement interval. We measure spending in two week periods before and after announcement intervals. In Table II, Panel A we present summary statistics for different spending categories. The data is aggregated per consumer at the two-week-period level. The mean discretionary spending per period is \$329.1, of which roughly one-third is restaurant expenses. Transactions for jewelry and travel (which are likely luxury items for many consumers) are observed in a given period with frequencies of 0.3% and 3.3%, respectively. Average credit card repayments are \$1,129.1. We observe that a

new loan is initiated by a consumer with a frequency of 0.5%. We also observe cash withdrawals: the average cash withdrawal per period is $405.3, and the average number of cash withdrawals is 2.4.

Table II, Panel B provides some demographic information about the consumers in the data. The median monthly salary per consumer that we observe is $2,857, which is similar to the $2,809 median monthly personal income in the 2018 data from the Current Population Survey, though our data do not cover all forms of personal income. Consumers in our data reside in zip codes with a 2010 median home value of $231,300 and a median educational attainment between some college and an associate's degree. Data from the 2010 American Community Survey display a median home value of $179,900, and the median educational attainment in the 2010 Census is some college. The consumers in our data may be wealthier to a moderate degree than the typical U.S. consumer, but they are broadly similar.

In order to analyze the dissemination of information about local unemployment announcements, we consider data on news articles archived on NewsBank (newsbank.com). NewsBank includes articles from a wide variety of 3,506 national and local newspapers in the U.S.

III Empirical Specification

Our aim is to analyze the impact of local unemployment announcements on consumer spending. Our focus is on announcements that are 12-month maximums, as these announcements are likely to be particularly salient for consumers.[4] The local unemployment announcements we study are the Metropolitan Area Employment and Unemployment monthly news releases published by the Bureau of Labor Statistics (BLS). These are distinct from the national-level monthly

[4]Exploiting state-level variation in Germany, Garz (2018) finds that economic news releases that hit salient milestones have a large effect on the local index of economic perceptions, a measure of consumer confidence, but Garz does not examine the impact of salient news on consumer spending.

Employment Situation summaries that are also published by the BLS. The Employment Situation summaries for a given month tend to be released within roughly a week of the close of that month, while the Metropolitan Area Employment and Unemployment releases are usually published about 1 month after the month-end. The release dates for the national and local unemployment announcements therefore do not generally coincide.

We assess the news interest in local unemployment announcements by measuring in the NewsBank database each day the number of articles published in the U.S. press that mention "unemployment." We define National News Interest to be a day's rank within the calendar year of that day's U.S.-wide mentions of "unemployment", where the rank is scaled to have a maximum of one. Due to changing coverage, entry and exit, there are significant changes in the number of sources in NewsBank (ranging from 3,663 in 2007 to 5,322 in 2019) and the rank measure allows us to make meaningful comparisons across years. We consider whether the U.S. press provides greater coverage of unemployment on dates close to local unemployment announcements by estimating for each day T

$$\text{National News Interest}_T = \phi\,(\text{Day near release date}_T) + \iota_T + \upsilon_T + \psi_T, \tag{1}$$

where $(\text{Day near release date}_T)$ is an indicator for a day near the release date of a local unemployment announcement (such as the release date itself or a day within 3 days of the release date), ι_T are month-year fixed effects, υ_T are day-of-the-week fixed effects and ψ_T is an error term. The main coefficient of interest is ϕ which describes the extent to which national news interest in unemployment is higher on days that are close to the release of local unemployment announcements.

Local unemployment announcements that are very high, that are new maximums relative to announcements in previous periods, may attract particular attention from the local media due to their salience. For each day and CBSA, we define Local News Interest to be the day's rank

within a calendar year (scaled to a maximum of one) of "unemployment" mentions in newspapers based in the CBSA. We study the impact of a 12-month maximum on News Interest in a CBSA by estimating the following regression for each CBSA c on day T :

$$\text{Local News Interest}_{c,T} = \Lambda\,(\text{12-Month Maximum}_{c,T}) + \omega_T + \chi_c + \psi'_{c,T}, \tag{2}$$

where (12-Month Maximum$_{c,T}$) is an indicator for whether the latest unemployment announcement in CBSA c before (or on) date T was a 12-month maximum, ω_T are fixed effects at the day-month-year level, χ_c are CBSA fixed effects and $\psi'_{c,T}$ are errors. In this regression the main coefficient of interest is Λ which describes the degree to which 12-month unemployment maximums elicit unusual local news interest.

In order to study the impact of local unemployment announcements on consumer spending, we make three changes to the news regression specification. First, we treat the announcement date and subsequent two days as the announcement interval, and we omit it from our spending analysis. This allows consumers three days to absorb the unemployment announcements and to initiate any possible shifts in spending. Second, we measure spending decisions over two-week periods, as consumers do not make spending decisions over a daily horizon (and spending is not typically posted to bank and credit card accounts immediately, in any case). Third, our consumption data is at the individual consumer level, not simply at the CBSA level, and we therefore compare the spending of each consumer before and after the announcement. The two-week spending period length avoids any overlap between the measured post-announcement spending of one month and the pre-announcement spending of the subsequent month.

We label a two-week period t that follows an announcement interval as having $Post_t = 1$ and a two-week period s that precedes an announcement interval as having $Post_s = 0$. We measure each consumer's spending separately in the periods preceding and following each announcement interval.

For convenience, we refer to a period immediately preceding an announcement, the announcement interval and the period immediately following the announcement as all belonging to the same event window w. Event windows are thus roughly one month in duration. Figure 2 outlines the time periods just described.

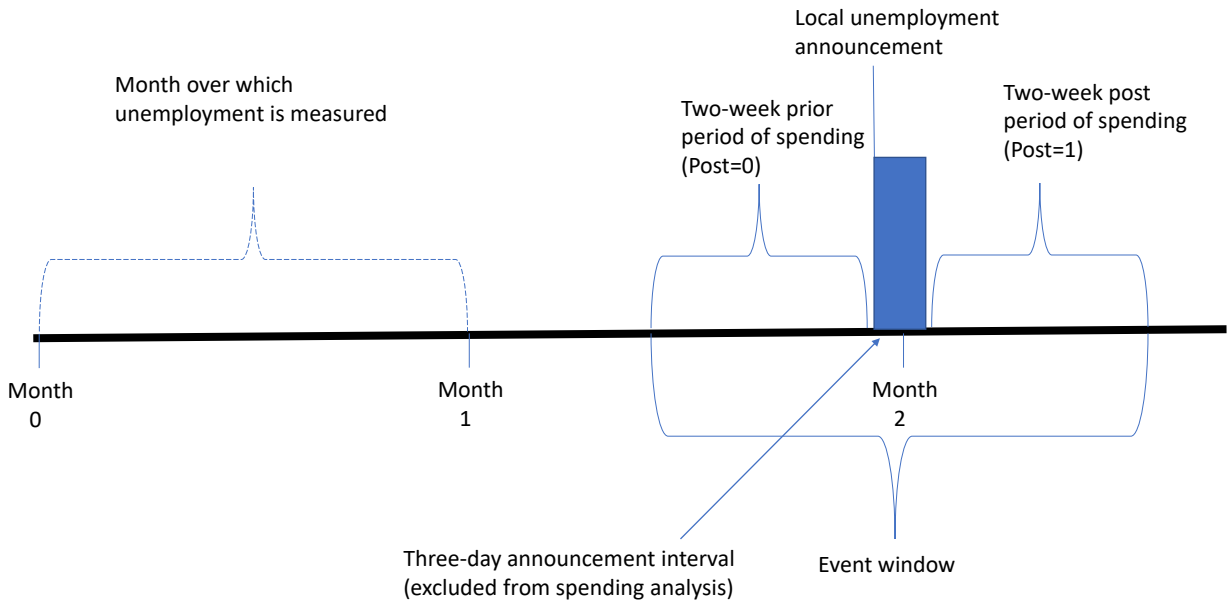
We study the impact of a 12-month maximum on consumer spending by estimating the following regression for consumer i who lives in CBSA $c(i)$ in period t within window $w(t)$:

$$spending_{i,t} = \beta \left(\text{12-Month Maximum}_{c(i),w(t)}\right) * Post_t + \nu Post_t + \xi_{i,w(t)} + \epsilon_{i,t}, \tag{3}$$

where $\left(\text{12-Month Maximum}_{c(i),w(t)}\right)$ is an indicator for whether a 12-Month maximum unemployment rate was announced in CBSA $c(i)$ during the announcement interval that falls within event window $w(t)$, $\xi_{i,w(t)}$ are fixed effects at the consumer-event window level and $\epsilon_{i,t}$ are errors. The main coefficient of interest is β; it describes the impact of an 12-month maximum on the change in a consumer's spending in the post-announcement period relative to her spending in the pre-announcement period. We are essentially conducting event studies around the local unemployment announcement date for each consumer during every event window, and we contrast the change in spending for consumers who experience an 12-month maximum with the change exhibited by those who do not. Spending is typically measured in logs of dollar expenditures. We note that the level of the 12-month maximum is subsumed in the fixed effects. We double cluster all standard errors at the CBSA and time period levels.

We also consider whether unemployment announcement effects may differ across heterogeneous groups of consumers with varying characteristics. To analyze this question, we estimate

Figure 2. Time Line



$$spending_{i,t} = \alpha' \left(\text{12-Month Maximum}_{c(i),w(t)}\right) * Post_t * Characteristic$$

$$+\beta' \left(\text{12-Month Maximum}_{c(i),w(t)}\right) * Post_t + \eta' Post_t * Characteristic$$

$$+ \kappa' \left(\text{12-Month Maximum}_{c(i),w(t)}\right) * Characteristic + \nu' Post_t + \xi'_{i,w(t)} + \epsilon'_{i,t}. \quad (4)$$

In specification (4) the coefficient of interest is α', which measures the impact of a consumer-level $Characteristic$ on the spending response to a 12-month maximum. The $\xi'_{i,w(t)}$ are fixed effects at the consumer-event window level.

We assess the persistence of the effect of local unemployment announcements by regressing the current level of spending on historical announcements. For these tests we make use only of spending in the pre-period ($Post_t = 0$) for a given month and consider how it is affected by announcements in the previous months. Using the pre-period consumption allows us to avoid any confounding effects of contemporaneous announcements and provides roughly a two-week lapse from the most recent announcement, which enables us to study medium-term effects. For lags of up to s months, we estimate

$$spending_{i,t} = \delta_s \left(\text{12-Month Maximum}_{c(i),w(t-s)}\right) + \gamma_i + \zeta_t + controls + u_{i,t,s}, \quad (5)$$

where γ_i and ζ_t are fixed effects at the consumer and year-month levels, respectively, and $u_{i,t,s}$ is an error term; in these tests we are not contrasting spending before and after a specific announcement, so we employ consumer and year-month effects separately.

IV Results

A News Interest and Local Unemployment Announcements

The empirical specification we propose in Section III considers the impact of a local unemployment announcement on news interest and consumer spending. We begin by providing evidence that news outlets offer additional coverage of unemployment in the days following an announcement. The local news supply responds to the salience of the macro announcements.

Specifically, as described in equation (1) we regress National News Interest on an indicator for whether a day is a local unemployment release date along with fixed effects for the month-year and day of the week. We find, as shown in the first column of Panel A of Table III, that release dates are associated with higher National News Interest (coefficient=0.156 and t-statistic=5.29). The t-statistic is clustered at the month-year. This result indicates that national news interest in unemployment is approximately 15.6 percentage points higher on local unemployment announcement release dates (the National News Interest lies on the range $(0, 1]$). The result in the second column of Panel A shows that interest is also higher, by approximately 8.4 percentage points (t-statistic=5.89), in the period consisting of the release date and the subsequent three days. As shown in the third column of Panel A, interest is still elevated in the week of the release date (coefficient=0.067 and t-statistic=5.42), though the level of news interest declines as time passes after the announcement.

The results in Panel A of Table III establish that local unemployment release dates are associated in general with higher news interest in unemployment. The mechanism in Section III, however, focuses on the behavioral impact of 12-month maximum unemployment rate announcements. We study the effect of these maximums on consumers by measuring Local News Interest in "unemployment" and relating it to local unemployment announcements. This analysis requires information on the local unemployment rate released at the time (not the revised rate),

and these vintage data are provided for the period beginning May 2007 on the St. Louis ALFRED website.[5] We regress Local News Interest on an indicator for whether the last released local unemployment rate was a 12-month maximum along with fixed effects for the day-month-year and CBSA, as described in equation (2).

We find that Local News Interest in unemployment is significantly higher in CBSAs for which the last local unemployment rate announced was a 12-month maximum (coefficient=0.0148, t-statistic=3.55), as displayed in the first column of Panel B of Table III. The t-statistic is double clustered at the CBSA and month-year levels. The coefficient indicates the consumer interest in unemployment is approximately 1.5 percentage points higher in these CBSAs. The inclusion of day-month-year fixed effects removes the influence of any national changes in unemployment rates; we are describing an increase in local news interest in unemployment after a local 12-month maximum. For a point of contrast, we define near 12-month-maximums to be rates that are within 0.2 percentage points of a maximum but that are not maximums. We show in the second column of Panel B that near 12-month maximums do not have a significant effect on Local News Interest (coefficient=0.0029, t-statistic=0.90). Relative to near-maximum announcements of high unemployment rates, the behavioral impact of a maximum is marked.

Is there something singular about 12-month maximums as opposed to maximums measured at different horizons? Every maximum at a horizon longer than twelve months is, of course, a 12-month maximum as well. In order to identify the incremental effect of a 12-month maximum announcement in particular, we consider announcements that are 12-month maximums but that are not 13-month maximums. This enables us to distinguish 12-month announcement effects from effects associated with longer horizon maximum announcements. In the first column of Panel C of Table III we show that Local News Interest is significantly higher (coefficient=0.0155, t-statistic=3.04) after 12-month maximum announcements that are not 13-month maximums. In fact, this coefficient roughly matches the 1.5 percentage point effect generated by all 12-month

[5]The data source is https://alfred.stlouisfed.org.

maximums (as displayed in Panel B), suggesting that the impact of 12-month maximums arises from their achieving a maximum specifically at a 12-month horizon rather than at a longer horizon.

We provide further evidence on this point by regressing Local News Interest on 10-month maximums that are not 11-month maximums and analogously defined variables through to 14-month maximums that are not 15-month maximums. As shown in the second column of Panel C, 12-month maximums that are not 13-month maximums have a significant effect (coefficient=0.0157, t-statistic=3.07) while all the other variables have insignificant (and much smaller) coefficients. Twelve-month maximums appear to capture the imagination of the news media and lead to increased coverage in ways that maximums at other horizons do not. As we turn to the consumer spending analysis, we will therefore focus our attention on 12-month maximums.

These results show that the supply of news is sensitive to the salience of the macro announcement. This is sensible, given that newspapers are known to cater to the tastes of their readership (Gentzkow and Shapiro, 2010). Presumably, consumers have a taste for salient news. As we are about to show, this slant in news coverage impacts household spending decisions.

B Discretionary Spending and Local Unemployment Announcements

Local unemployment announcements attract the attention of the news. Do they have an impact on actual spending? We consider this question by measuring discretionary spending for each consumer in the two-week periods before and following local unemployment announcement periods and assessing the impact of maximum announcements on the observed change in spending. We estimate equation (3): in this specification we regress the log of discretionary spending on an indicator for a 12-month maximum announcement interacted with a post-announcement indicator, and we include fixed effects at the consumer-event window level. The inclusion of these fixed effects allows us to isolate the change in spending for a given consumer around a specific announcement. We measure unemployment rate announcements using the vintage data that specifies the actual

rate announced at the time.

We find, as displayed in the first column of Table IV, that a 12-month maximum announcement leads to a 2.0% drop in discretionary spending (the t-statistic, which is double clustered at the CBSA and time-period levels, is -4.00). This is a quick, sizable response to a maximum announcement. Within the space of two weeks, consumers undertake a meaningful reduction in their discretionary spending.[6]

Consumers are not simply responding to high unemployment rate announcements. The interaction of a near 12-month maximum rate announcement with the post-period indicator is insignificant (coefficient=0.002 and t-statistic=0.40), and its inclusion has little impact on the estimated change associated with actual announced 12-month maximums (coefficient=-0.020 and t-statistic=-4.00), as shown in the second column of Table IV. Twelve-month maximums apparently have a salience for consumers that clearly distinguishes them from near maximums.

It may be argued that perhaps consumers' responses to local unemployment rate 12-month maximum announcements are a reaction to underlying economic changes and not to the releases themselves. It may be, for example, that local economic conditions materially deteriorate in advance of a 12-month maximum announcement. Consumers who notice this negative economic trend may engage in an immediate shift in their current spending patterns that is unrelated to any BLS news release.

To evaluate this argument, we analyze false 12-month maximums. These are local unemployment announcements that are 12-month maximums at the time of announcement but that are subsequently revised and that, after revision, are revealed to have actually not been a maximum. Chodorow-Reich, Coglianese, and Karabarbounis (2019) use real-time measurement

[6]The coefficient on the post-announcement-period indicator of 0.029 (t-statistic=6.98) reflects the fact that the announcements are often released near the beginning of the subsequent month and consumers spend about 2.9% more at the beginning of the month than they do at the end of the prior month. Our central coefficient of interest, the interaction of the post-period indicator with the 12-month maximum indicator, captures the differential discretionary spending shift of consumers who experience a local unemployment maximum.

error in unemployment announcements to determine the macro-economic effects of unemployment benefit extensions. We use the same measurement error to isolate the true 12-month maximum announcement effect.

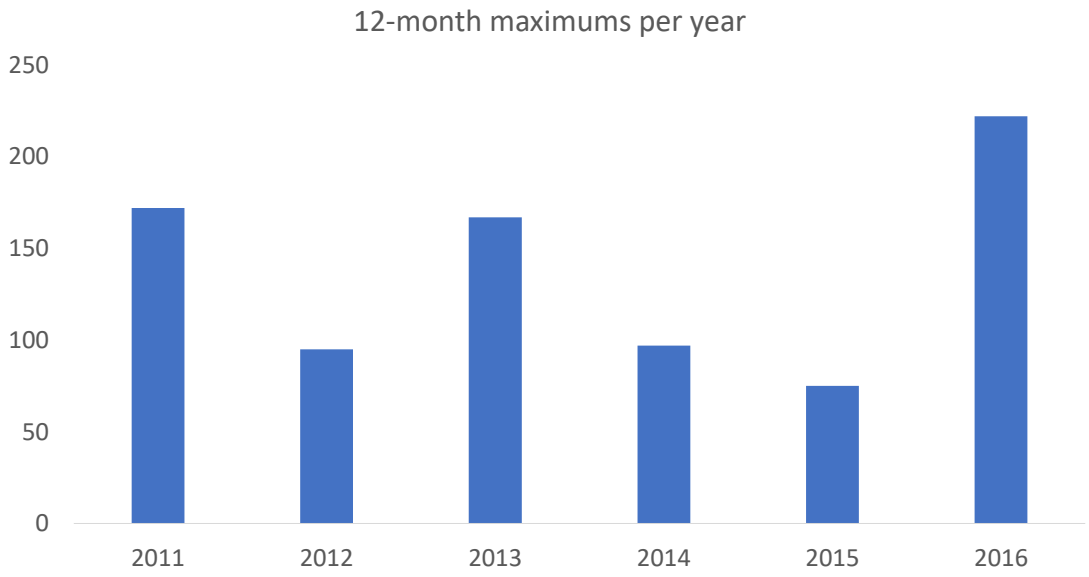
We find, as presented in the third column of Table IV, that false 12-month maximums reduce discretionary spending (coefficient=-0.022 and t-statistic=-3.23) in the same manner as actual 12-month maximums. This is true despite the fact that we have shown that there is no response to announced near maximums, and these false maximums typically are, in reality, near maximums. Consumers appear quite clearly to be responding to the announced unemployment rates.

As displayed in Figure 3, 12-month maximums occur throughout the six-year period over which we have spending data. There is seasonality in the timing of these maximums; they are clustered in January-March and June-August. The tests in Table IV, however, include fixed effects at the consumer-event window level, where event windows are approximately 1 month in length. All of our spending comparisons, therefore, are driven by within-month changes for a given consumer. Any seasonal differences in spending levels are absorbed by the fixed effects and do not influence the estimated coefficients.

C Maximums at Specific Horizons

We showed in Table III that news interest is heightened after 12-month maximums that are not 13-month maximums and that this effect was not observed for similar maximums at other horizons. We assess whether consumers also respond differently to 12-month maximums by regressing discretionary spending on an indicator for 12-month maximums that are not 13-month maximums, an indicator for post-announcement periods, the interaction between these two variables and consumer-event window fixed effects. We find, as shown in the first column of Panel A of Table V, that consumers spend significantly less (coefficient=-0.023 and t-statistic=-7.83) after 12-month maximums that are not 13-month maximums. As for news interest, we find that the

Figure 3. Distribution of 12-month Maximums Across Years



impact on consumer spending of a 12-month maximum is quite similar in magnitude to the impact of a 12-month but not 13-month maximum. In column two of Panel A of Table V we show that near 12-month maximums have an insignificant effect on spending and have almost no impact on the estimated effect of 12-month but not 13-month maximums. The results displayed in the third column of Panel A show that 10-month but not 11-month maximums through to 14-month but not 15-month maximums all have insignificant effects on consumer spending with the exception that the impact of 12-month but not 13-month maximums is large and distinctive (coefficient=-0.023 and t-statistic=-7.77).

We find similar results for false maximums. In Panel B of Table V we show that 12-month maximums but not 13-month maximums at announcement that were later revised and revealed not to have been 12-month maximums have a negative impact on consumer spending (coefficient=-0.030 and t-statistic=-3.93). The other false maximums of this form have insignificant effects at horizons ranging from ten to fourteen months. The news media highlight twelve-month maximums in particular and consumer spending drops for maximums precisely at a twelve-month horizon.

D Discretionary Spending and Local Unemployment Announcements: Weekly Data

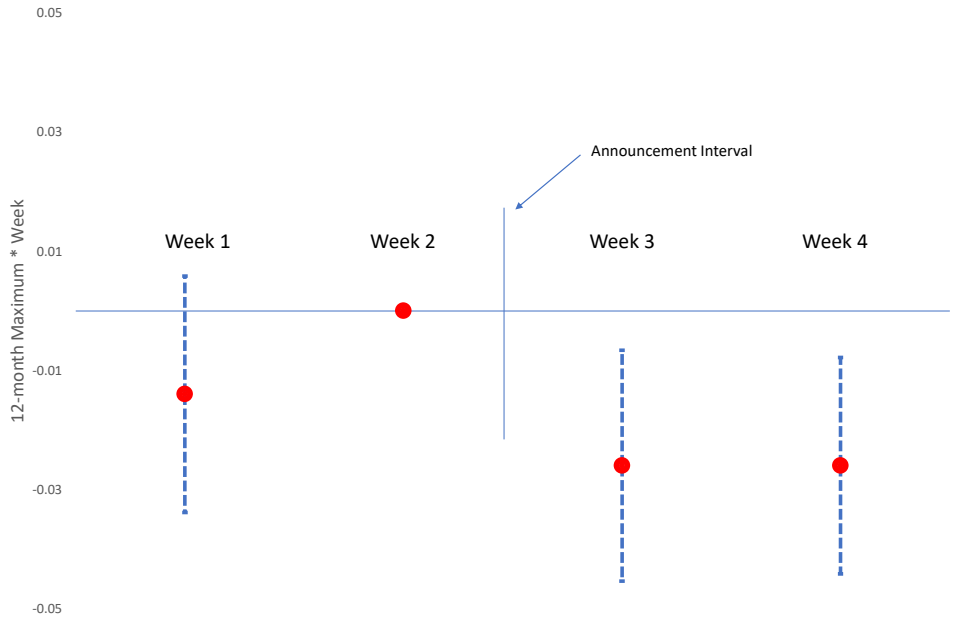
To more precisely identify the timing of the impact of local unemployment announcements on consumption, we analyze weekly data. Within each event window we label as Weeks 1 and 2 the two weeks before the announcement interval and as Weeks 3 and 4 the two weeks following the announcement. We regress discretionary spending each week on week indicators, week indicators interacted with an indicator for whether a 12-month maximum was announced during the window, and the usual controls, including consumer-event window fixed effects. Table IV shows that 12-month maximum announcements lead to a subsequent discretionary spending drop. If this spending drop does not reflect a response to the announcement but instead reflects consumers' general

responses to their personal assessments of declining economic conditions, then a soon-to-be-released 12-month maximum announcement should be associated with a pre-trend of declining spending from Week 1 to Week 2. If consumers instead are reacting specifically to the local unemployment maximum, then there should be no pre-trend and discretionary spending should drop from Week 2 to Week 3 after these announcements.

We present the results from this regression in the first column of Table VI, where Week 2 is the reference week. As shown in the table, we do not observe a positive interaction between Week 1 and the 12-month maximum indicator (the estimated coefficient of -0.014 is negative, not positive, and insignificant with a t-statistic=-1.41), which shows that there is no evidence of a pre-trend decline in spending before the announcement. We do, however, find negative and significant interactions between the 12-month maximum indicator and the Week 3 (coefficient=-0.026 and t-statistic=-2.68) and Week 4 (coefficient=-0.026 and t-statistic=-2.65) indicators, showing an immediate negative discretionary spending response after the announcement. These results support the argument that discretionary spending falls after a 12-month maximum announcement due to the announcement itself and not due to a continuing pre-trend of declining spending. The coefficient estimates are graphically depicted in Figure 4.

We show in the second column of Table VI that near 12-month maximum announcements display neither pre-trends nor subsequent spending declines. In the third column of Table VI we detail results showing that 12-month false maximums are not preceded by spending declines but are followed by significant decreases in discretionary spending. Overall the results are consistent with the argument that 12-month maximum announcements have a causal effect in reducing local discretionary spending.

Figure 4. Weekly Discretionary Spending Around 12-Month Maximums



D.1 Is the Observed Decline in Spending Driven by Consumers' Own Unemployment?

Ganong and Noel (2019) find that households dramatically cut spending when they lose their jobs. For three reasons we argue that our results are not driven by an increase in the local unemployment rate being associated with consumers in our panel losing their own jobs and therefore spending less. First, as we explained in the timeline in Figure 2, the announcement describes job losses that occurred roughly 1-2 months earlier while the spending decline detailed in Table IV takes place in the month of the announcement itself. Second, if higher job losses 1-2 months previous led to a decline in subsequent spending, then a pre-trend of reduced spending should be observed before the current announcement. As we show in Table VI, there is no evidence of such a pre-trend. Spending declines only after the announcement itself. Third, higher earlier job losses should lead to announced maximums at various horizons, but we show in Table V that consumption declines after 12-month maximums specifically and not at maximums of other horizons. This specific response

appears to be driven by news and/or behavioral factors rather than by the timing of job losses of the consumers in our panel.

E Discretionary Spending and Local Unemployment Announcements: Robustness

It may be argued that perhaps consumer spending drops after 12-month maximums because the announced rate is high, not because of any news or consumer behavioral response specific to these maximums. Counter to this claim is the evidence in Table IV that near 12-month maximums (which are also high) do not elicit a significant consumption response. Moreover, our central claim is that consumers exhibit excess sensitivity to salient news, and part of the salience of 12-month maximums may be their high announced rates. Nonetheless, we isolate the impact of 12-month maximums from that of high announced rates by including in equation (3) fixed effects for the most recent announced unemployment rate. For periods with $Post = 1$ this is the unemployment rate announced in the present announcement interval, while for periods with $Post = 0$ it is the rate announced in the previous announcement interval. We find, as displayed in the first column of Panel A of Table VII, that in this specification as well the impact of a 12-month maximum is significant (coefficient=-0.013 and t-statistic=-2.44). We show in the second and third columns of Panel A of Table VII, respectively, that near 12-month maximums have an insignificant effect (coefficient=0.005 and t-statistic=0.95), while false maximums have a significant impact (coefficient=-0.016 and t-statistic=-2.27). Twelve-month maximums have a salience for consumer spending beyond the fact that the announced rate is high.

A related argument is that it may be that increasing unemployment rates attract consumers' attentions and that maximums have an effect because they are higher than previous months. As for the previous claim, we do not insist that the salience of a 12-month maximum has nothing to do with its representing an increased rate, but we isolate the impact of the maximum itself by including an

indicator in equation (3) for an announced rate that is strictly higher than the previous announced rate interacted with Post. In our specification with fixed effects for the most recent announced unemployment rate, we find that announced unemployment increases interacted with Post have an insignificant effect on spending (coefficient=-0.004 and t-statistic=-0.89) and controlling for this factor we continue to find a negative and significant effect of a 12-month maximum (coefficient=-0.012 and t-statistic=-2.23), as detailed in the fourth column of Panel A of Table VII. Including near 12-month maximums as an additional control little alters these conclusions (as shown in the fifth column), and false 12-months are significant (coefficient=-0.015 and t-statistic=-2.08) even with the introduction of the strictly increasing rate indicator. The results in Panel B of Table VII show that consumption is lower after greater increased announced changes in the unemployment rate, but controlling for this effect has little impact on the significant negative respond of spending to 12-month maximum announcements. While a high announced rate and the fact that it represents an increase may contribute to the salience of 12-month maximums, the results in Table VII demonstrate that these maximums have a negative effect on consumption even when controlling for these factors.

F Spending Categories

The analysis in Table IV describes the impact of local unemployment announcements on discretionary spending as a whole. In this section, we consider the effects of these announcements on some of the specific categories of discretionary spending in order to provide a richer illustration of the phenomenon. De Nardi, French, and Benson (2012) emphasize that non-durables and services declined most dramatically during the Great Recession. We therefore begin by considering restaurant spending, a largely service expense that may be regarded by some consumers as a luxury. Specifically, we estimate equation (3) with the log of restaurant spending serving as the dependent variable. As displayed in the first column of Panel A of Table VIII, we find a coefficient of -0.015 (t-statistic=-2.41) on the interaction between the 12-month maximum indicator and the

post-announcement period indicator. Consumers who experience a local unemployment maximum spend approximately 1.5% less in restaurants in the subsequent two weeks.

This reduction in restaurant spending follows 12-month maximums, but not near 12-month maximums, as is detailed in the second column of Panel A of Table VIII. In the third column of Panel A we show that false 12-month maximums lead to a 1.7% (t-statistic=-3.31) reduction in restaurant spending.

In Panel B of Table VIII we present analogous results for the impact of local unemployment maximums on whether or not a consumer purchases jewelry. (Given the infrequency of jewelry purchases, we consider a binary dependent variable measuring whether the consumer spent anything on jewelry in the period.) Consumers are less likely to purchase jewelry after 12-month unemployment maximum announcements, and near-maximum announcements have no impact. Even false 12-month maximums lead to a reduced probability of jewelry purchases. Although jewelry is a durable good, it is clearly a luxury item, and local unemployment announcements lead to a rapid decrease in the likelihood of jewelry spending.

As a third category we consider whether a consumer spends on travel. Travel is a service and is often a luxury. We show in the first and fourth columns of Panel C of Table VIII that consumers are less likely to spend on travel after local 12-month maximum unemployment announcements. There is, however, evidence of a reduction in the likelihood of travel spending after a near 12-month maximum (as shown in the second column of Panel C). False 12-month maximums lead to a reduction the probability of travel spending (third column of Panel C).

The results in Table VIII establish that local unemployment maximum announcements lead to a decrease in spending for restaurants, jewelry and travel, none of which is a necessity, and all of which likely have a flavor of luxury spending for many consumers.

G Financing

We have shown in Tables IV and VIII that unemployment maximums reduce spending. We now consider the impact of these releases on consumers' financing strategies.

Consumers whose future expectations have been dimmed by the announcement of a local unemployment maximum may choose to preserve some financial slack to enable themselves to respond to worsening conditions. This can be regarded as a form of precautionary saving (Kimball, 1990). One strategy for creating this slack is to reduce debt repayments and therefore effectively to preserve more cash on hand. We investigate whether consumers react in this way by regressing the log of credit card repayments on the interaction between an indicator for a 12-month maximum announcement and a post-announcement period indicator and the standard controls, as described in equation (3). We find that consumers reduce their credit card repayments by 3.6% (t-statistic=-2.41); this result is detailed in the first column of Panel A of Table IX.

Credit card repayments are typically made at a lag to the actual purchases as it is standard for issuers to offer a "grace period" of three weeks or longer during which interest does not accrue if the balance is eventually fully paid (Ausubel 1991). Our finding that consumers reduce their credit card repayments therefore likely does not reflect decreased spending (like that documented in Tables IV and IV), as the balance due on a credit card typically reflects expenditures from an earlier period. In other words, consumers face a credit card balance that was largely accumulated before the local unemployment announcement. Their reduced repayments therefore describe a financing response to the unemployment release rather than a consumption response. It is noteworthy that the financing response of 3.6% is large compared to the roughly 2% consumption response described in the previous tables.

A rational precautionary savings strategy should likely respond similarly to high unemployment announcements whether they are 12-month maximums or near maximums but, as

we demonstrate in the second column of Panel A of Table IX, we find no impact of near maximums on credit card repayments (coefficient=0.005 and t-statistic=0.48). Further, we show in the third column of Panel A that false 12-month maximums have a comparable negative effect (coefficient=-0.032 and t-statistic=-1.96) on repayments to that of actual maximums.

Taken together, these results clearly demonstrate that maximum announcements have a salience for consumers that leads to a substantial change in financing behavior that may be difficult to completely rationalize. Beyond the striking differences in the consumer responses to (false) maximums and near maximums, it is the case that credit card interest rates are very high. Consumers who react to a 12-month maximum by repaying less and therefore borrowing more on their credit cards are acquiring financial slack at a rather high cost.

Do consumers also respond to unemployment maximums by seeking new financing? In the first column of Panel B of Table IX we show that this is not the case: in fact, a 12-month maximum announcement leads to a reduced probability of initiating a loan (coefficient=-0.001 and t-statistic=-1.94). Near maximums have no impact on the likelihood of starting a new loan (coefficient=0.000 and t-statistic=0.01), while false maximums do reduce the probability of loan initiation (coefficient=-0.001 and t-statistic=-2.34), as shown in columns two and three, respectively, of Panel B.

The results in Table IX show that unemployment maximum announcements lead consumers to draw down more of their current lines of credit by repaying less of their credit card debt but also reduce the probability that they obtain new financing, perhaps because they are less likely to seek a new loan. It may be that consumers view unemployment maximums as harbingers of worsening economic conditions in which it is prudent to maintain cash by borrowing against existing credit commitments but in which one is unlikely to be granted additional debt. An announced unemployment maximum (whether actual or false) leads consumers to act as if they are more financially constrained, while near maximums have no such effect.

H Cash Withdrawals

Consumers also respond to unemployment 12-month maximums by withdrawing 1.6% less (t-statistic=-4.33) cash from their bank accounts; we show this in the first column of Panel B of Table X. Smaller cash withdrawals may reflect lower current spending (as in Table IV) or a plan to spend less in the future. The reduction in the cash withdrawn is driven by maximums and not near maximums (second column of Panel B), and false maximums have a similar impact to that of maximums (third column of Panel B). In Panel C of Table X we present regressions in which the dependent variable is the log of the number of cash withdrawals and describe results that are similar though somewhat weaker than those for the amount of withdrawals.

The findings in Tables IX and X show that consumers respond to local unemployment maximum announcements by maintaining higher balances in their bank accounts. They do so by both reducing credit card repayments and by withdrawing less cash. Both of these policies increase a consumer's short-term financial flexibility, though the credit card repayment strategy comes potentially at a considerable price.

I Consumer Heterogeneity

We demonstrated in Table IV that consumers reduce their discretionary spending in response to announcements of local unemployment maximums. In this section we analyze the heterogeneous responses of different groups of consumers.

I.1 Income Effects

There are conflicting arguments suggesting that high income consumers may be either more or less responsive to announcements of unemployment maximums. On one hand, the consumption of people with higher incomes is likely to be more sensitive to stock market movements, so their

consumption may also be more sensitive to unemployment releases which are another form of economic news. It is also probably the case that high income consumers are more frequently exposed to information about the announced local unemployment rate. By contrast, one may argue that unemployment developments are more relevant to lower income consumers, and that they have a higher marginal propensity to consume (Mian, Rao, and Sufi, 2013), so they should respond more to unemployment information. It is also true that for lower income consumers discretionary spending is a smaller fraction of their overall expenditures, so their discretionary component may be more sensitive to negative news.

We test these competing hypotheses by regressing the log of discretionary spending on a triple interaction between an indicator for a local 12-month unemployment maximum, a post-announcement indicator and a consumer-level income characteristic along with the previous set of explanatory variables and controls. This specification, detailed in (4), includes a control for the double interaction between the indicators for a local maximum and the post-period (and the other relevant double interactions): we are interested in the coefficient on the triple interaction which describes the differential response of consumers with the specified characteristic to the announcement of a local unemployment maximum.

The first characteristic we study is an indicator for consumers with high salaries. We calculate the median average salary for all consumers and describe a consumer as having a high salary if her average salary is above this median. (This characteristic, and all those described below, are time invariant at the consumer-level.) We find, as described in the first column of Panel A of Table XI, a positive and significant triple interaction for the high salary characteristic (coefficient=0.009 and t-statistic=3.26). This is evidence that high salary consumers respond less to local unemployment maximums. The larger magnitude of the coefficient on the double interaction between a local maximum and the post period (coefficient=-0.022 and t-statistic=-3.80) indicates that high salary consumers do reduce their consumption after a maximum is announced, but they do not reduce it

by as much as low salary consumers do.

As a second measure of consumer wealth, we define an indicator for whether the consumer has security trading expenses (expressed as a fraction of total expenditures) that are above median. We find that consumers with high security trading expenses are also less responsive to local 12-month unemployment maximums, as detailed in the second column of Panel A. Our third proxy for consumer wealth is an indicator for whether the consumer resides in a zip code with a median house value in the 2010 census that is above the median in the sample. We find that consumers residing in high value neighborhoods do not respond differently after 12-month maximums.

The results in Panel A provide support for the argument that high income consumers reduce their discretionary spending after local unemployment maximums less aggressively than do low income consumers. This may be driven by the salience of unemployment news for low income consumers or their higher marginal propensity to consume (especially for discretionary spending).

I.2 Expenditures as a Fraction of All Spending

We provide additional evidence on how a consumer's response to unemployment news is affected by the fraction of her spending that is fixed versus discretionary by considering high utility expenditure consumers who are defined to be those for whom utility expenses as a fraction of total expenditures are above the overall median. We demonstrate in the first column of Panel B of Table XI that high utility expenditure consumers respond more strongly to local 12-month unemployment maximums (triple interaction coefficient=-0.008 and t-statistic=-3.61). Consumers with high telephone spending and high gas spending (in both cases relative to overall expenditures) also cut their discretionary spending more after 12-month maximums, as shown in columns two and three of Panel B. These results are directly consistent with a mechanism under which a consumer having a larger fixed component of expenditures must reduce her discretionary spending more quickly after negative news, but they are not in tension with the different argument that

unemployment news is more salient for low income consumers.

I.3 Behavioral and Risk Characteristics

We have shown that consumers respond to maximum unemployment announcements, even those that are subsequently revised, but not to near maximums, and we have argued that this set of responses may be difficult to rationalize. If that is the case, we may expect consumers more subject to behavioral biases to respond more forcefully to these announcements. We test this hypothesis by defining high education consumers to be those who reside in zip codes that had an average weighted level of education in the 2010 census that is above the median in our sample. These consumers may be less influenced by behavioral biases (so their response may be muted) but they may also be more likely to learn of local unemployment releases (which would suggest a greater response). We show in the first column of Panel C of Table XI that high education consumers respond less to 12-month unemployment maximum announcements than lower education consumers. This is consistent with the argument that high education consumers are less influenced by the behavioral considerations but it may also reflect the fact that high education consumers are likely to be high income consumers, and we show above that the latter group responds less to these announcements.

As a second proxy for behavioral biases, we define high-service-charge consumers to be those with above-median bank service charges as a fraction of their total expenditures. A consumer who spends a large amount on these fees, relatively to her income, may make other less-than-optimal financial decisions as well. In the second column of Panel C we show that high-service-charge consumers do indeed react more strongly to unemployment maximum announcements.

Our third characteristic is a measure of risk aversion. We label as high-insurance consumers those who spend an above-median fraction of their total expenditures on insurance. These consumers may be particularly concerned about any negative news and may therefore respond more vigorously to a 12-month unemployment maximum. We show in the third column of Panel C that

this is indeed the case: consumers who spend relatively more on insurance reduce their discretionary spending more after a local unemployment maximum announcement (triple interaction coefficient=-0.006 and t-statistic=-2.23).

The results in Table XI demonstrate that while high income and high education consumers do respond to local unemployment maximum announcements they do so in a more restrained manner than their lower income and education peers. From a macroeconomic perspective, it is therefore the case that negative news about unemployment should have a larger impact on discretionary spending in lower income regions and neighborhoods. Policy makers who are interested in mitigating these effects should therefore concentrate their attention on less favored areas.

J Persistence

The results in Tables IV-XI use an event study methodology to demonstrate the quick response of consumers' discretionary spending to local unemployment announcements. We now consider the question of the persistence of these responses. Does an unemployment maximum depress spending for a couple of weeks only to lead to a subsequent reversal? Or, by contrast, do these announcements have lingering effects that have a negative impact on the spending in future periods?

Addressing these questions requires that we examine medium-term effects of announcements, so we can no longer only study shifts in spending in a short window around a release date. Instead, we regress the log of the current level of discretionary spending on a series of lagged indicators for 12-month maximum announcements along with consumer and year-month fixed effects, as described in equation (5). We estimate the response of current spending to lagged unemployment announcements by regressing spending on each lagged 12-month maximum indicator separately (Jordà, 2005). We measure current spending in the two week pre-period before an announcement. This allows us to avoid any impact of a contemporaneous release and provides a lapse of roughly

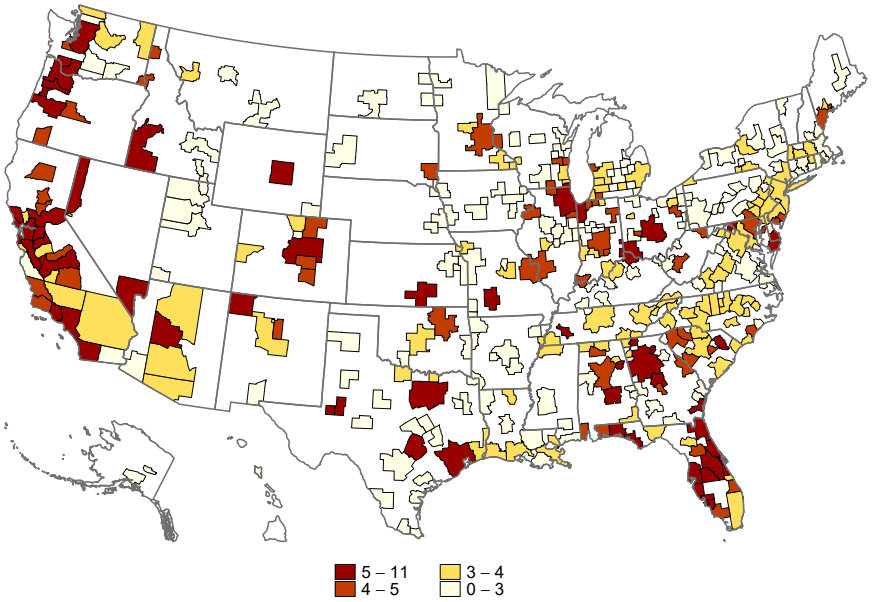
two weeks from the previous announcement, which should enable us to identify the medium-term announcement impact. We include a fixed effect for the previous unemployment rate that was announced, as we are focusing on the impact of maximum announcements rather than on the effect of a high level of unemployment.

We find that the lagged 12-month maximum announcement has an insignificant effect on current spending (coefficient=-0.7% and t-statistic=-1.21), as presented in the first column of Table XII. In columns two through sixth of Table XII we show that lagged maximum announcements from two months earlier and four months earlier have negative and significant impacts on current discretionary spending, with magnitudes of -1.1% and -1.4%, respectively. The effects at other lags are insignificant, and there is no evidence of a positive response at any horizon.

There are two main points to be drawn from these regressions. First, a series of worsening unemployment announcements over time can have a large cumulative effect. For example, suppose that unemployment rates increase in a given CBSA over a five month period such that a 12-month maximum was achieved in each of these months. Accounting for the -2.0% announcement effect documented in column one of Table IV and the significant coefficients in Table XII, consumers in this CBSA would be predicted to reduce their discretionary spending after the fifth announcement by 4.5 percent. That is a substantial decrease in discretionary consumption spending.

Figure 5 illustrates that sequences of five months or longer of continual 12-month unemployment announcement maximums were widespread across the U.S. in 2009. A five-month sequence of continual 12-month maximums of this form was achieved in 119 of the 373 CBSAs at some point in the ALFRED 2007-2018 data. Five-month maximum sequences were observed in 21 unique CBSAs in 2008, 111 unique CBSAs in 2009, 5 unique CBSAs in 2010 and 1 CBSA in 2015. These events are concentrated in the Southwest and Florida, which were the areas hit hardest by house price declines. This is not surprising, given that house prices are also likely affected by these salient announcements. This may contribute to an upward bias in the estimates of the MPC out of

Figure 5. Longest Monthly Sequences of Continual 12-Month Unemployment Announcement Maximums in 2009



housing wealth in the literature. Second, there is clearly no evidence of later reversals. Consumers respond to unemployment announcements both quickly and in a long-lasting manner.

The steady release of salient bad news may have played a causal role in the precipitous decline of U.S. aggregate consumption at the onset of the Great Recession as well as during the slow subsequent recovery.[7] The U.S. counties which experienced the largest build-up in household debt before the Great Recession also experienced the largest declines in house prices during the crisis. These counties were also more likely to witness large declines in consumer spending and non-tradeable employment (Mian, Rao, and Sufi, 2013; Mian and Sufi, 2014). This evidence

[7]During the Great Recession of 2008-2009, the growth rate of U.S. consumption experienced the steepest and most persistent decline since World War II. The consumption drop was especially pronounced for non-durables and services (see De Nardi, French, and Benson, 2012). The year-over-year growth rate of non-durable consumption declined from 6.6% in the second quarter of 2008 to -6.1% in the first quarter of 2009. The decline in consumption growth was preceded by a dramatic drop in the Michigan consumer confidence index. A consumption growth crash of this size presents a quantitative challenge to standard intertemporal models in which the stand-in household has a strong motive to smooth consumption. Among the leading candidate explanations for this consumption drop are binding financial constraints (Mian, Rao, and Sufi, 2013), wealth effects and downward revisions of expected future income growth (De Nardi, French, and Benson, 2012), and increased uncertainty (Pistaferri, 2016).

has been cited in support of the financial constraints explanation, but these counties were also exposed to a steady stream of salient, bad economic news during the crisis that had a causal effect on consumption. Our estimates imply that a salience-induced decline in consumer sentiment contributed significantly to the cross-sectional correlation between declines in regional consumption, employment, and house price declines during the Great Recession.

V Conclusion

Consumption growth responds to predictable income shocks, in violation of the permanent income hypothesis (Flavin, 1981; Blinder, Deaton, Hall, and Hubbard, 1985; Parker, 1999; Parker, Souleles, Johnson, and McClelland, 2013; Ganong and Noel, 2019); consumption growth also responds to idiosyncratic, insurable income shocks, in contrast to the predictions of the workhorse complete markets model (Cochrane, 1991; Attanasio, 1999). There is a large literature which measures the response of household consumption growth to idiosyncratic income shocks to gauge how far from the complete markets benchmark the economy operates (Kaplan and Violante, 2010). Our paper documents a novel deviation from the permanent income hypothesis: excess sensitivity to salient news.

We find that the announcement of a 12-month local unemployment maximum leads to an increase in local news about unemployment and a 2% reduction by consumers in their discretionary spending. Near maximum announcements have no effect on spending, but false maximums that were later revised downward have the same impact as actual maximums. Announcements of 12-month maximums, in particular, have a negative effect on consumption that is not found at other horizons. These results suggest that salient negative macroeconomic announcements have a strong behavioral response on consumers that may be mediated by their exposure to news. Announcements of 12-month unemployment maximums also lead consumers to reduce their credit card repayments by 3.6% and to withdraw 1.6% less cash from their bank accounts. The reductions in discretionary

spending are strongest for lower income consumers. The decrease in spending is not reversed in subsequent months and, in fact, unemployment maximum announcements persistently reduce future spending at a horizon of two to four months.

A series of salient, negative reports will depress consumption which would clearly have a meaningful deleterious influence on local businesses. This raises the possibility of negative feedback effects in which unemployment announcements reduce future discretionary spending which may, in turn, lead to weaker future employment conditions. Anticipating these consequences, policymakers may need to manage macro-economic news releases by accompanying the release of salient, negative economic news with other measures or announcements meant to buttress consumer confidence.

Table I
Discretionary Spending Categories

Spending Categories	Vendor Examples
Automotive Expenses	Autozone, Honda, Pep Boys
Cable/Satellite Services	Comcast, DirecTV, Time Warner Cable
Charitable Giving	Compassion International, Feed The Children, Greenpeace
Child/Dependent Expenses	Children's Place, Gymboree, Toys "R" Us
Clothing/Shoes	Kohl's Corporation, Macy's, Nordstrom
Dues and Subscriptions	Consumer Reports, The New York Times, The Wall Street Journal
Electronics	Apple Inc., Best Buy Co., Fry's Electronics
Entertainment	Redbox, Regal Cinemas, StubHub
Gifts	Godiva Chocolatier Inc, Hallmark, ProFlowers
Hobbies	Camping World, Inc., Guitar Center, Hobby Lobby
Home Improvement	Bed Bath & Beyond, Home Depot, Williams And Sonoma
Home Maintenance	Merry Maids, Stanley Steemer International, Inc., Terminix International Company
Online Services	Google Play, Skype, TransUnion
Personal Care	Bath & Body Works, Great Clips, Ulta Salon, Cosmetics & Fragrance
Pets/Pet Care	Petco's, PetSmart, Wag.com
Restaurants/Dining	McDonald's Corporation, Starbucks, Subway
Travel	Delta Air Lines, Hilton Hotels, Southwest Airlines

Table II
Summary Statistics

Panel A provides summary statistics for the main spending categories analyzed in this paper. For every local unemployment announcement, we define the announcement interval as the announcement date and the two subsequent days. Spending is measured separately over the subsequent and prior two week periods surrounding each announcement period, and the spending presented below is aggregated at the two-week-period level. *Spending on Jewelry?*, *Spending on Travel?*, and *Initiated a New Loan?* are binary indicators measured over all periods for which discretionary spending data is available. Panel B provides summary statistics for characteristics at the consumer level. *Salary* is measured in every month for which a positive value is available. *Median Home Value* and *Educational Attainment* are census variables measured at the zip code level. *Educational Attainment* is on a scale from one to seven, where one denotes less than 9th grade as the highest level of attainment and seven denotes a graduate or professional degree.

Panel A: Spending by Consumers per Two-Week Periods

	observations	mean	std dev	p10	p50	p90
Discretionary Spending	575995762	329.1	361.3	25.7	192	883.8
Restaurants/Dining expenses	470350912	116.2	107.9	13.9	79.8	287.8
Spending on Jewelry?	575995761	0.003	0.053	0	0	0
Spending on Travel?	575995756	0.033	0.179	0	0	0
Credit Card Repayments	330388229	1129.1	1498.4	50	472	3475.4
Initiated a New Loan?	575995762	0.005	0.072	0	0	0
Cash Withdrawal Amount	252502949	405.3	488.2	40	200	1100
Number of Cash Withdrawals	252521938	2.4	1.7	1	2	5

Panel B: Consumer Characteristics

	observations	mean	std dev	p10	p50	p90
Salary	4900502	4181.21	13908.55	680.5	2856.57	7913.45
Median Home Value	9584888	314155.9	251072	91700	231300	647200
Educational Attainment	9641257	4.51	0.68	3.73	4.42	5.49

Table III
Local Unemployment Announcements and News Interest

Panel A reports results from regressing News Interest (defined as a day's rank within the calendar year of mentions of "unemployment" in the U.S. press) on dates related to the release dates of the Bureau of Labor Statistics Metropolitan Area Employment and Unemployment reports. Dates are defined over the period June 19, 2007- Dec. 31, 2019. Reported t-statistics in parentheses in Panel A are heteroskedasticity-robust and clustered at the month-year level. The News Interest data is sourced from NewsBank. Panel B reports results from regressing News Interest on indicators for whether the last reported unemployment rate for the CBSA was a twelve-month maximum or near a twelve-month maximum (defined as within 0.2 percentage points of a twelve-month maximum but not a twelve-month maximum). Panel C reports results from regressing News Interest on indicators for maximums of the following form: maximum at month T but not a maximum at month $T+1$. Panel B and C CBSA data are sourced from the ALFRED vintage database provided by the Federal Reserve Bank of St. Louis and cover the period May 30, 2007- May 22, 2020. Panel B and C t-statistics are clustered jointly at the month-year and CBSA levels. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Daily National Data

	National News Interest (1)	National News Interest (2)	National News Interest (3)
Release Date	0.156***		
	(5.29)		
Within 3 Days of Release Date		0.084***	
		(5.89)	
Release Week			0.067***
			(5.42)
Month-year FE	Yes	Yes	Yes
Day of week FE	Yes	Yes	Yes
N	4,579	4,576	4,573
adj. R^2	0.10	0.10	0.10

Panel B: Daily CBSA-level Data

	Local News Interest (1)	Local News Interest (2)
Twelve-Month Maximum	0.0148***	0.0150***
	(3.55)	(3.53)
Near Twelve-Month Maximum		0.0029
		(0.90)
Day-Month-year FE	Yes	Yes
CBSA FE	Yes	Yes
N	1,339,750	1,339,750
adj. R^2	0.14	0.14

Panel C: Daily CBSA-level Data

	Local News Interest (1)	Local News Interest (2)
Twelve-Month Maximum but Not Thirteen-Month Maximum	0.0155***	0.0157***
	(3.04)	(3.07)
Ten-Month Maximum but Not Eleven-Month Maximum		0.0004
		(0.08)
Eleven-Month Maximum but Not Twelve-Month Maximum		0.0024
		(0.51)
Thirteen-Month Maximum but Not Fourteen-Month Maximum		0.0010
		(0.05)
Fourteen-Month Maximum but Not Fifteen-Month Maximum		-0.0042
		(-0.44)
Day-Month-year FE	Yes	Yes
CBSA FE	Yes	Yes
N	1,330,936	1,311,760
adj. R^2	0.14	0.14

Table IV

Local Unemployment Announcements and Discretionary Spending

This table reports results from regressing the log of discretionary spending on an interaction between an indicator for whether the reported unemployment rate for the CBSA was a maximum at a twelve-month horizon and an indicator for whether discretionary spending is measured over the two week period following the local unemployment announcement interval (labeled "Post") and controls. The announcement interval runs from the announcement date to two day after. Spending is measured separately over the subsequent and prior two week periods (for values of one and zero for Post, respectively). An event window includes the periods immediately before and following an announcement. Dates are defined over the period Jan 2011 - Dec 2016. The controls include near maximums (defined as within 0.2 percentage points of a maximum but not a maximum) interacted with Post, the Post variable, and fixed effects at the consumer-event window level. False maximums are maximums as of the initial announcement date that were later revised and revealed not to have been maximums. Reported t-statistics in parentheses are heteroskedasticity-robust and double clustered at the CBSA- and period-levels. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Discret. Spending (1)	Discret. Spending (2)	Discret. Spending (3)
12-Month Maximum * Post	-0.020***	-0.020***	
	(-4.00)	(-4.00)	
Near 12-Month Maximum * Post		0.002	
		(0.40)	
False 12-Month Maximum * Post			-0.022***
			(-3.23)
Post	0.029***	0.029***	0.029***
	(6.98)	(6.89)	(6.90)
Consumer-Event Window FE	Yes	Yes	Yes
N	507,096,536	507,096,536	507,096,536
adj. R^2	0.51	0.51	0.51

Table V

Local Unemployment Announcements and Discretionary Spending: Specific Maxima

This table reports results from regressing the log of discretionary spending on an interaction between an indicator for specific unemployment maxima and an indicator for whether discretionary spending is measured over the two week period following the local unemployment announcement period (labeled "Post") and controls. Specific unemployment maxima indicators take the following form: an indicator for a maximum at month T but not a maximum at month $T+1$. The announcement interval runs from the announcement date to two day after. Spending is measured separately over the subsequent and prior two week periods (for values of one and zero for Post, respectively). An event window includes the periods immediately before and following an announcement. Dates are defined over the period Jan 2011 - Dec 2016. The controls include near maximums (defined as within 0.2 percentage points of a maximum but not a maximum) interacted with Post, the Post variable and fixed effects at the consumer-event window level. The false specific maxima listed in Panel B are specific unemployment maxima as of the initial announcement date that were later revised and revealed not to have been maxima. Reported t-statistics in parentheses are heteroskedasticity-robust and double clustered at the CBSA- and period-levels. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Specific Maxima

	Discret. Spending (1)	Discret. Spending (2)	Discret. Spending (3)
12- but not 13-Month Maximum * Post	-0.023***	-0.023***	-0.023***
	(-7.83)	(-7.91)	(-7.77)
Near 12-Month Maximum * Post		0.003	
		(0.46)	
10- but not 11-Month Maximum * Post			-0.010
			(-1.20)
11- but not 12-Month Maximum * Post			-0.010
			(-1.16)
13- but not 14-Month Maximum * Post			-0.003
			(-0.09)
14- but not 15-Month Maximum * Post			-0.008
			(-0.30)
Consumer-Event Window FE	Yes	Yes	Yes
N	507,080,722	507,080,722	507,047,670
adj. R^2	0.51	0.51	0.51

Panel B: False Specific Maxima

	Discret. Spending (1)	Discret. Spending (2)
False 12- but not 13-Month Maximum * Post	-0.030***	-0.030***
	(-3.93)	(-3.94)
False 10- but not 11-Month Maximum * Post		-0.008
		(-0.77)
False 11- but not 12-Month Maximum * Post		-0.007
		(-0.63)
False 13- but not 14-Month Maximum * Post		-0.002
		(-0.06)
False 14- but not 15-Month Maximum * Post		-0.009
		(-0.35)
Consumer-Event Window FE	Yes	Yes
N	507,080,722	507,047,670
adj. R^2	0.51	0.51

Table VI

Local Unemployment Announcements and Discretionary Spending- Weekly Data

This table reports results from regressing the log of weekly discretionary spending on an interaction between an indicator for whether the reported unemployment rate for the CBSA was a maximum at a twelve-month horizon and an indicator for the week over which discretionary spending is measured (Weeks 1 and 2 precede the local unemployment announcement interval and Weeks 3 and 4 follow it) and controls. The announcement interval runs from the announcement date to two day after. Spending is measured separately over the subsequent and prior two week periods. An event window includes the two week periods immediately before and following an announcement. Dates are defined over the period Jan 2011 - Dec 2016. The controls include near maximums (defined as within 0.2 percentage points of a maximum but not a maximum) interacted with the week, week indicators, and fixed effects at the consumer-event window level. False maximums are maximums as of the initial announcement date that were later revised and revealed not to have been maximums. Reported t-statistics in parentheses are heteroskedasticity-robust and double clustered at the CBSA- and period-levels. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

	Discret. Spending (1)	Discret. Spending (2)	Discret. Spending (3)
12-month maximum * Week 1	-0.014	-0.014	
	(-1.41)	(-1.35)	
12-month maximum * Week 3	-0.026***	-0.026***	
	(-2.68)	(-2.65)	
12-month maximum * Week 4	-0.026***	-0.026***	
	(-2.86)	(-2.80)	
Near 12-month maximum * Week 1		0.013	
		(1.35)	
Near 12-month maximum * Week 3		0.007	
		(0.51)	
Near 12-month maximum * Week 4		0.009	
		(0.82)	
False 12-month maximum * Week 1			-0.007
			(-0.92)
False 12-month maximum * Week 3			-0.022*
			(-1.87)
False 12-month maximum * Week 4			-0.027***
			(-2.98)
Week 1	0.013	0.013	0.013
	(1.64)	(1.58)	(1.61)
Week 3	0.034***	0.034***	0.033***
	(4.21)	(4.18)	(4.18)
Week 4	0.028***	0.028***	0.028***
	(3.24)	(3.20)	(3.20)
Consumer-Event Window FE	Yes	Yes	Yes
N	940,432,417	940,432,417	940,432,417
adj. R^2	0.39	0.39	0.39

Table VII
Local Unemployment Announcements and Discretionary Spending: Robustness

This table reports results from regressing the log of discretionary spending on an interaction between an indicator for whether the reported unemployment rate for the CBSA was a maximum at a twelve-month horizon and an indicator for whether discretionary spending is measured over the two week period following the local unemployment announcement period (labeled "Post") and controls. The announcement interval runs from the announcement date to two day after. Spending is measured separately over the subsequent and prior two week periods (for values of one and zero for Post, respectively). An event window includes the periods immediately before and following an announcement. Dates are defined over the period Jan 2011 - Dec 2016. The controls include near maximums (defined as within 0.2 percentage points of a maximum but not a maximum) interacted with Post, the Post variable, fixed effects for the unemployment rate, an indicator for a strictly increasing unemployment rate interacted with Post, the change in the unemployment rate interacted with Post and fixed effects at the consumer-event window level. False maximums are maximums as of the initial announcement date that were later revised and revealed not to have been maximums. Reported t-statistics in parentheses are heteroskedasticity-robust and double clustered at the CBSA- and period-levels. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A:

	Discret. Spending (1)	Discret. Spending (2)	Discret. Spending (3)	Discret. Spending (4)	Discret. Spending (5)	Discret. Spending (6)
12-Month Maximum * Post	-0.013**	-0.012**		-0.012**	-0.012**	
	(-2.44)	(-2.41)		(-2.23)	(-2.21)	
Near 12-Month Maximum * Post		0.005			0.004	
		(0.95)			(0.87)	
False 12-Month Maximum * Post			-0.016**			-0.015**
			(-2.27)			(-2.08)
Strictly Increasing Unemployment * Post				-0.004	-0.004	-0.004
				(-0.89)	(-0.86)	(-0.88)
Consumer- Event Window FE	Yes	Yes	Yes	Yes	Yes	Yes
Unemployment Rate FE	Yes	Yes	Yes	Yes	Yes	Yes
N	507,096,536	507,096,536	507,096,536	507,096,536	507,096,536	507,096,536
adj. R^2	0.51	0.51	0.51	0.51	0.51	0.51

Panel B:

	Discret. Spending (1)	Discret. Spending (2)	Discret. Spending (3)
12-Month Maximum * Post	-0.011**	-0.011**	
	(-2.20)	(-2.17)	
Near 12-Month Maximum * Post		0.005	
		(0.96)	
False 12-Month Maximum * Post			-0.014*
			(-1.97)
Chg. in Unemployment Rate * Post	-0.013***	-0.013***	-0.014***
	(-2.68)	(-2.72)	(-2.75)
Consumer- Event Window FE	Yes	Yes	Yes
Unemployment Rate FE	No	No	No
N	507,096,536	507,096,536	507,096,536
adj. R^2	0.51	0.51	0.51

Table VIII
Local Unemployment Announcements and Spending Categories

Panel A reports results from regressing the log of the amount of restaurant spending on an interaction between an indicator for whether the reported unemployment rate for the CBSA was a maximum at a twelve-month horizon and an indicator for whether restaurant spending is measured over the two week period following the local unemployment announcement period (labeled "Post") and controls. Panel B reports the results of analogous regressions in which the dependent variable is an indicator variable for positive spending on jewelry, and Panel C reports the results of analogous regressions in which the dependent variable is an indicator variable for positive spending on travel. The announcement interval runs from the announcement date to two day after. Spending is measured separately over the subsequent and prior two week periods (for values of one and zero for Post, respectively). An event window includes the periods immediately before and following an announcement. Dates are defined over the period Jan 2011 - Dec 2016. The controls include the Post variable, near maximums (defined as within 0.2 percentage points of a maximum but not a maximum) interacted with Post, and fixed effects at the consumer-event window level. False maximums are maximums as of the initial announcement date that were later revised and revealed not to have been maximums. Reported t-statistics in parentheses are heteroskedasticity-robust and double clustered at the CBSA- and period-levels. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Restaurant Spending

	(1)	(2)	(3)
12-Month Maximum * Post	-0.015**	-0.015**	
	(-2.41)	(-2.40)	
Near 12-Month Maximum * Post		-0.003	
		(-0.58)	
False 12-Month Maximum * Post			-0.017***
			(-3.31)
Controls and FE	Yes	Yes	Yes
N	402,233,108	402,233,108	402,233,108
adj. R^2	0.54	0.54	0.54

Panel B: Spending on Jewelry?

	(1)	(2)	(3)
12-Month Maximum * Post	-0.0002**	-0.0002**	
	(-2.57)	(-2.51)	
Near 12-Month Maximum * Post		0.000	
		(0.06)	
False 12-Month Maximum * Post			-0.0002***
			(-3.35)
Controls and FE	Yes	Yes	Yes
N	507,096,536	507,096,536	507,096,536
adj. R^2	0.13	0.13	0.13

Panel C: Spending on Travel?

	(1)	(2)	(3)
12-Month Maximum * Post	-0.001***	-0.001***	
	(-2.73)	(-2.78)	
Near 12-Month Maximum * Post		-0.001*	
		(-1.89)	
False 12-Month Maximum * Post			-0.001***
			(-2.89)
Controls and FE	Yes	Yes	Yes
N	507,096,524	507,096,524	507,096,524
adj. R^2	0.21	0.21	0.21

Table IX
Local Unemployment Announcements and Financing Transactions

Panel A reports results from regressing the log of credit card repayments on an interaction between an indicator for whether the reported unemployment rate for the CBSA was a maximum at a twelve-month horizon and an indicator for whether credit card repayments are measured over the two week period following the local unemployment announcement period (labeled "Post") and controls. Panel B reports the results of analogous regressions in which the dependent variable is an indicator for whether the consumer initiated a new loan during the period. The announcement interval runs from the announcement date to two day after. Spending is measured separately over the subsequent and prior two week periods (for values of one and zero for Post, respectively). An event window includes the periods immediately before and following an announcement. Dates are defined over the period Jan 2011 - Dec 2016. The controls include the Post variable, near maximums (defined as within 0.2 percentage points of a maximum but not a maximum) interacted with Post, and fixed effects at the consumer-event window level. False maximums are maximums as of the initial announcement date that were later revised and revealed not to have been maximums. Reported t-statistics in parentheses are heteroskedasticity-robust and double clustered at the CBSA- and period-levels. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Credit Card Repayments

	(1)	(2)	(3)
12-Month Maximum * Post	-0.036**	-0.035**	
	(-2.41)	(-2.39)	
Near 12-Month Maximum * Post		0.005	
		(0.48)	
False 12-Month Maximum * Post			-0.032*
			(-1.96)
Controls and FE	Yes	Yes	Yes
N	218,976,110	218,976,110	218,976,110
adj. R^2	0.40	0.40	0.40

Panel B: Initiated a New Loan?

	(1)	(2)	(3)
12-Month Maximum * Post	-0.001*	-0.001*	
	(-1.94)	(-1.91)	
Near 12-Month Maximum * Post		0.000	
		(0.01)	
False 12-Month Maximum * Post			-0.001**
			(-2.34)
Controls and FE	Yes	Yes	Yes
N	507,096,536	507,096,536	507,096,536
adj. R^2	0.00	0.00	0.00

Table X
Local Unemployment Announcements and Cash Withdrawals

Panel A reports results from regressing the log of the amount of cash withdrawn on an interaction between an indicator for whether the reported unemployment rate for the CBSA was a maximum at a twelve-month horizon and an indicator for whether cash withdrawals are measured over the two week period following the local unemployment announcement period (labeled "Post") and controls. Panel B reports the results of analogous regressions in which the dependent variable is the log of the number of cash withdrawals. The announcement interval runs from the announcement date to two day after. Spending is measured separately over the subsequent and prior two week periods (for values of one and zero for Post, respectively). An event window includes the periods immediately before and following an announcement. Dates are defined over the period Jan 2011 - Dec 2016. The controls include the Post variable, near maximums (defined as within 0.2 percentage points of a maximum but not a maximum) interacted with Post, and fixed effects at the consumer-event window level. False maximums are maximums as of the initial announcement date that were later revised and revealed not to have been maximums. Reported t-statistics in parentheses are heteroskedasticity-robust and double clustered at the CBSA- and period-levels. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Cash Withdrawal Amounts

	(1)	(2)	(3)
12-Month Maximum * Post	-0.016***	-0.016***	
	(-4.33)	(-4.35)	
Near 12-Month Maximum * Post		0.007	
		(0.59)	
False 12-Month Maximum * Post			-0.017***
			(-2.68)
Controls and FE	Yes	Yes	Yes
N	175,592,646	175,592,646	175,592,646
adj. R^2	0.52	0.52	0.52

Panel B: Number of Cash Withdrawals

	(1)	(2)	(3)
12-Month Maximum * Post	-0.010**	-0.010**	
	(-2.02)	(-2.10)	
Near 12-Month Maximum * Post		-0.005	
		(-0.61)	
False 12-Month Maximum * Post			-0.007
			(-0.91)
Controls and FE	Yes	Yes	Yes
N	175,609,966	175,609,966	175,609,966
adj. R^2	0.47	0.47	0.47

Table XI
Local Unemployment Announcements, Discretionary Spending and Consumer Heterogeneity

This table reports results from regressing the log of discretionary spending on an interaction between an indicator for whether the reported unemployment rate for the CBSA was a maximum at a twelve-month horizon, an indicator for whether discretionary spending is measured over the two week period following the local unemployment announcement interval (labeled "Post") and time-invariant consumer characteristic and controls. The characteristics in Panel A are an indicator for an above-median salary, an indicator for residing in a census zip code with an above-median median home value, and an indicator for above-median security trading expenses. The characteristics in Panel B are an indicator for above-median utilities expenses, above-median telephone expenses, and above-median gas/fuel expenses, where all of these variables are expressed as a fraction of total expenditures. The characteristics in Panel C are an indicator for residing in a census zip code with an above-median weighted average education level, an indicator for above-median debit service charges and an indicator for above-median insurance expenses, where the latter two variables are expressed as a fraction of total expenditures. Dates are defined over the period Jan 2011 - Dec 2016, and the controls include all the explanatory variables included in specification (1) in Table IV. Reported t-statistics in parentheses are heteroskedasticity-robust and double clustered at the CBSA- and period-levels. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Panel A: Income

Dependent Variable	Discret. Spending	Discret. Spending	Discret. Spending
Characteristic	High Salary	Trades Securities	High Home Value
	(1)	(2)	(3)
12-Month Maximum * Post * Characteristic	0.009***	0.006**	0.006
	(3.26)	(2.53)	(1.32)
12-Month Maximum * Post	-0.022***	-0.022***	-0.023***
	(-3.80)	(-4.20)	(-3.74)
Controls and FE	Yes	Yes	Yes

Panel B: Expenditures as a fraction of all spending

Dependent Variable	Discret. Spending	Discret. Spending	Discret. Spending
Characteristic	Util. Expend.	Tel. Expend.	Gas Expen.
	(1)	(2)	(3)
12-Month Maximum * Post * Characteristic	-0.008***	-0.007**	-0.005**
	(-3.61)	(-2.46)	(-2.05)
12-Month Maximum * Post	-0.016***	-0.016***	-0.018***
	(-2.98)	(-3.30)	(-3.71)
Controls and FE	Yes	Yes	Yes

Panel C: Personal Characteristics

Dependent Variable	Discret. Spending	Discret. Spending	Discret. Spending
Characteristic	High Educ.	High Svc. Chg.	Insur. Expen.
	(1)	(2)	(3)
12-Month Maximum * Post * Characteristic	0.007***	-0.004*	-0.006**
	(2.68)	(-1.96)	(-2.23)
12-Month Maximum * Post	-0.023***	-0.018***	-0.016***
	(-4.29)	(-3.54)	(-3.61)
Controls and FE	Yes	Yes	Yes
N	506,041,618	495,709,256	507,096,536
adj. R^2	0.51	0.51	0.51

Table XII

Local Unemployment Announcements and Discretionary Spending: Persistence

This table reports results from regressing the log of discretionary spending in the two weeks prior to a local unemployment announcement on indicators for whether the lagged reported unemployment rates for the CBSA at various specified horizons were at maximums at twelve-month horizons when announced. Controls include fixed effects for each consumer, the year-month and the last unemployment rate that was announced. Reported t-statistics in parentheses are heteroskedasticity-robust and double clustered at the CBSA- and period-levels. The symbols ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively.

Dependent Variable	Discret. Spending (1)	Discret. Spending (2)	Discret. Spending (3)	Discret. Spending (4)	Discret. Spending (5)	Discret. Spending (6)
12-Month Maximum$_{t-1}$	-0.007					
	(-1.21)					
12-Month Maximum$_{t-2}$		-0.011**				
		(-2.55)				
12-Month Maximum$_{t-3}$			-0.008			
			(-1.45)			
12-Month Maximum$_{t-4}$				-0.014*		
				(-1.79)		
12-Month Maximum$_{t-5}$					-0.003	
					(-0.57)	
12-Month Maximum$_{t-6}$						-0.008
						(-1.43)
Month, Consumer, Unemp. Rate FE	Yes	Yes	Yes	Yes	Yes	Yes
N	261,649,502	246,978,855	239,889,655	232,854,620	226,224,178	220,049,851
adj. R^2	0.41	0.42	0.42	0.42	0.42	0.42

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