

More Than Shelter: The Effects of Rental Eviction Moratoria on Household Well-Being*

Xudong An,[†] Stuart A. Gabriel,[‡] and Nitzan Tzur-Ilan[§]

April 6, 2021

ABSTRACT

We investigate the impact of 2020 COVID-19 rental eviction moratoria on household well-being. Analysis of new panel data indicates that eviction moratoria reduced evictions and resulted in redirection of scarce household financial resources to immediate consumption needs, notably including food and grocery spending. We also find that eviction moratoria reduced household food insecurity and mental stress, with larger effects evidenced among African American households. Findings suggest broad salutary effects of eviction moratoria during a period of widespread virus and economic distress.

JEL Classification: G28, R30, I38.

Keywords: Eviction moratorium, consumption, food security, mental health, COVID-19.

*We thank Emily Benfer, Chris Finger, Gary Painter, and Bill Spaniel for helpful discussions and comments. We also thank the seminar participants at Kellogg for helpful suggestions. Stuart Gabriel and Nitzan Tzur-Ilan are grateful to the UCLA Ziman Center for Real Estate's Rosalinde and Arthur Gilbert Program in Real Estate, Finance and Urban Economics for research funding and to Kartik Agarwal and Susu Zhu for excellent research assistance. The views expressed in this paper are solely those of the authors and do not necessarily reflect the views of the Federal Reserve Bank of Philadelphia or the Federal Reserve System.

[†]Federal Reserve Bank of Philadelphia (e-mail: xudong.an@phil.frb.org).

[‡]UCLA Anderson School of Management (email: sgabriel@anderson.ucla.edu).

[§]Northwestern University and Bank of Israel (e-mail: nitzan.ilan@kellogg.northwestern.edu).

I. Introduction

In the wake of the COVID-19 pandemic and related disruption to economic activity, weekly jobless claims in March 2020 skyrocketed to 7 million, roughly 10 times that of peak levels recorded during the 2000s global financial crisis.¹ To assure shelter of idled households and to damp virus spread, many state and local governments in the U.S. enacted moratoria on tenant eviction.² In this paper, we apply new data on state and local COVID-19 rental eviction moratoria to evaluate the effects of those measures on household well-being, notably including consumer spending and debt, food insecurity, and mental health outcomes.

Moratoria on rental eviction may have conferred a broad set of benefits on vulnerable households and the local economy. Upon onset of the pandemic, the share of affordability-constrained renters, defined as households paying more than one-half of their income on rent, jumped to one-half of all renter households.³ Further, renter households had little wherewithal to withstand COVID-related employment shocks, given an average renter household net worth of only \$5,000.⁴ Therefore, moratoria on eviction and related deferral of rent may have provided treated households with financial and mental relief in the form of positive shocks to household liquidity. Renters benefiting from such interventions could re-direct scarce resources to other immediate consumption needs, notably including food purchases.⁵

¹Bureau of Labor Statistics, U.S. Department of Labor, March 20, 2020.

²Sheen et al. (2020) suggest that policies to stem evictions are an important component of COVID-19 public health control. See also Jowers et al. (2020).

³See, Census Household Pulse Survey. According to the survey, in December 2020, nearly 30 million adults lived in households where there wasn't enough to eat, up 28% relative to prior to the pandemic. In Louisiana, a full one in five people faced food scarcity, the survey showed, with the numbers being even more dire among African American Americans.

⁴See, Federal Reserve Board Survey of Consumer Finance. This is not only a U.S. phenomenon; Ater et al. (2020) show that the Covid-19 pandemic caused Israeli households suffering a larger income cut, or those lacking sufficient liquid assets, to pay less of their rent.

⁵Rosen et al. (2020) find that rent-burdened households are more likely to have cutbacks on food, health and medicine, clothing, and transportation than non-rent-burdened households. A large literature has found consumption responses to income and liquidity shocks. See, e.g., Johnson et al. (2006), Agarwal et al. (2007),

Eviction moratoria similarly assured renters of continued shelter during a period of elevated COVID-19 virus diffusion, likely easing mental stress and anxiety among treated households.⁶

COVID-19 eviction moratoria were implemented by state and local government in a haphazard manner throughout the March-August 2020 period. For example, among states that enacted eviction moratoria, California was among the first to implement such measures in March 2020 while Virginia did not enact a state-level eviction moratorium until July. Separate from state-level enactment of eviction moratoria, similar measures were sometimes adopted at the county level at different times. The staggered implementation of rental eviction moratoria at both state and county levels provide us an opportunity to identify the household impact of those interventions using panel data.⁷

We collect data related to household well-being from numerous sources. We assemble a zip code by month panel of credit card usage information using the Federal Reserve confidential supervisory data; also, we obtain county by week data on consumer spending by category including food and grocery spending from the Opportunity Insight Economic Tracker (Opportunity Insight) database compiled by [Chetty et al. \(2020\)](#). We also compile a state by week panel of food insecurity and mental health information from the Census COVID-19 Household Pulse Survey. Finally, we construct a state-level panel of food insecurity measures using search query data from Google. We comprise panels on renter eviction moratoria at state and local levels using data scraped from government websites and from the Eviction Lab at Princeton University. Together with information on local housing and labor markets

and [DiMaggio et al. \(2017\)](#).

⁶Rental eviction moratoria similarly may impose financial hardship on landlords. In a related paper, [Ambrose et al. \(2020\)](#) assess variation in eviction risk associated with source of landlord mortgage finance and related opportunity for borrower forbearance in the case of GSE-backed loans. We leave the full welfare analysis of rental eviction moratoria to another paper.

⁷As discussed below, the 2020 CARES Act also included a limited 120-day federal eviction moratorium which commenced in March 2020. However, the federal policy intervention was limited to renters who participated in federal housing assistance programs or lived in a property with a federally-backed mortgage.

and other controls, we run treatment intensity difference-in-differences regressions to assess the causal effects of rental eviction moratoria on household spending, food insecurity and mental health outcomes.

Results using zip code-level credit card data show that state rental eviction moratoria led to both elevated credit card spending and related debt payoff. We also show a small but significant positive impact of rental eviction moratoria on borrowers' credit score. We further distinguish between renters and homeowners to help our causal inference as renters, not homeowners, were the target beneficiaries of the eviction moratoria. To do so, we divide zip codes into those with high versus low renter share of households, based on U.S. Census data. If the relations we find between renter protection measures and credit card outcomes are causal, one would expect a larger impact among predominantly renter zip codes. We also account for the share of population under financial distress (and thus at risk of eviction) as eviction moratoria are targeted to those households. Our results confirm the causal relation. The impact of state eviction moratorium on credit card spending and payment is economically significant. Based on our estimates, a 12-month eviction moratorium is associated with a 16 and 14 percent increase in credit card spending and payment, respectively, with larger effects estimated for targeted high renter share zip codes.

We corroborate and provide further disaggregation by spending category of state eviction moratoria using the Opportunity Insight data. Model specification is consistent with that of the zip code analysis. We find sizable spending effects in certain categories of spending including accommodation and food service and retail with and without grocery. A one week of eviction moratorium is associated with a 1 percent increase in food service spending and a 0.9 percent increase in grocery spending.

Consistent with above findings of elevated food and grocery spending in the wake of

enactment of state eviction moratoria, our results show that eviction moratoria reduce the incidence of household food insecurity. Based on outcome terms from the state by week Census COVID-19 Household Pulse Survey, we find an additional week of enactment of state eviction moratoria is associated with a 2 percent decline in subsequent self-reporting of food insecurity among African Americans (compared to an average of 21 percent that reported food insecurity). State eviction moratoria also result in a decline in food bank utilization. We corroborate these findings using Google search query data. There we find that state-level search query for such terms as "Food Stamps" and "Food Banks Near Me" was significantly reduced in the wake of enactment of state eviction moratoria.

Finally, we utilized the Census COVID-19 Household Pulse Survey to assess the effects of state eviction moratoria on indicators of mental health. As indicated by the survey, about 4 in 10 adults in the U.S. reported symptoms of anxiety or depressive disorder in the wake of onset of the COVID-19 pandemic, up from 1 in 10 adults who reported these symptoms during 2019.⁸ Our results suggest that state-level rental eviction moratoria significantly reduced the incidence of emotional stress as reported in the survey, measured by such indicators as "feeling anxious", "can't stop worrying", and "feeling down". Results are especially pronounced among African American households.

Substantial recent literature provides evidence of adverse societal and household economic effects associated with rental housing eviction. [Desmond \(2012\)](#), [Desmond and Kimbro \(2015\)](#), and [Desmond \(2016\)](#) show large negative effects of evictions on employment, homelessness, and future housing stability. [Collinson and Reed \(2018\)](#) and [Currie and Tekin \(2015\)](#) find that housing instability is associated with unfavorable health outcomes. Prior to our paper, few studies provided evidence of consumption, food insecurity, and mental health

⁸See [Panchal et al. \(2020\)](#).

effects of moratoria on rental evictions.⁹

Research also shows disproportionate rent-burdens and risks of eviction among communities of color. Data presented by [Greenberg et al. \(2016\)](#) show that African American and Latinx households comprise roughly four-fifths of those facing eviction. The Census COVID-19 Household Pulse Survey, dated August 7 2020, indicates that nearly one-half of African American and Hispanic renters had slight or no confidence in their ability to pay the next month's rent on time, a figure that was twice as high as white renters. Moreover, 26 percent of African American renters and 25 percent of Hispanic renters reported being unable to pay rent the prior month, compared to 13 percent of white renters.¹⁰ Consistent with the above, our findings indicate that rental market interventions more substantially reduced food insecurity and mental distress among African American households.

Among the rapidly growing body of work studying the impact of the COVID-19 pandemic on the economy, [Eichenbaum et al. \(2020\)](#), [Jones et al. \(2020\)](#) and [Elenev et al. \(2020\)](#) provide macroeconomic frameworks for studying the pandemic and related government responses. A large number of researchers explore the impact of the pandemic on employment and household consumption (see, e.g., [Bartik et al. \(2020\)](#); [Baker et al. \(2020\)](#); [Chetty et al. \(2020\)](#) among others). [Cherry et al. \(2020\)](#) and [An et al. \(2021\)](#) investigate how mortgage forbearance affects the consumer debt markets. [Granja et al. \(2020\)](#), [Agarwal et al. \(2020\)](#) and others study the impact of the federal Paycheck Protection Program (PPP) on small businesses. Our paper is among the first to describe the temporal and geographic incidence of 2020 COVID-19 rental policy interventions and to provide evidence of their household

⁹[Gabriel et al. \(2021\)](#) provide evidence of beneficial effects of California 2000s financial crisis foreclosure moratoria on housing and local economies. Also, substantial literature studies the costs and benefits of other rental market interventions notably including rent control. See, e.g., [Favilukis et al. \(2019\)](#); [Diamond et al. \(2019\)](#); [Sims \(2007\)](#) and [Glaeser and Luttmer \(2003\)](#).

¹⁰More generally, there is substantial concern that the costs of the pandemic are being borne disproportionately by minority and lower-income groups. See, e.g., [Chetty et al. \(2020\)](#) and [Mongey et al. \(2020\)](#).

and local economic treatment effects.

The remainder of the paper is organized as follows. We provide background and summary information on COVID-19 rental eviction moratoria in the next section; in Section III, we explain our data and methodology. Results are reported in Section IV, followed by concluding remarks in Section V.

II. COVID-19 Rental Eviction Moratoria

The Eviction Lab at Princeton University (hereinafter Eviction Lab) compiles information on state and county incidence of COVID-19 “eviction moratoria which bar landlords from serving tenants with a notice to quit and filing an eviction action for nonpayment of rent” (Benfer et al. (2020)). In addition to information from that source, we used web scraping and text parsing protocols to conduct an automated search over the period of analysis of COVID-19 rent policies at state-level governor, court, and legislation websites for all states in the U.S. Rental eviction moratoria panel information from collected from the web scraping exercise and the Eviction Lab site were highly consistent. Figure 1 maps treatment incidence for U.S. states and counties for specific timeframes during the study period. We also provide a dynamic mapping of the state eviction moratoria treatment panels over the March – August study period (See <https://covid19evictionmoratoria.anderson.ucla.edu/map/>).¹¹

During our period of analysis, the federal eviction moratorium as specified by the CARES Act was limited only to renters who received federal housing assistance or lived in a property with a federally-backed mortgage.¹² Indeed, the Federal Reserve Bank of Atlanta estimated

¹¹The website includes information on four different rental market policy treatment terms: eviction moratoria, caps on rent increase, limitations on reporting delinquent tenants to credit bureaus, prohibitions on utility disconnection. during the period of analysis, imposition of eviction moratoria varied widely in duration and timing among states and counties in the U.S.

¹²The CARES Act moratorium covered tenants who receive assistance through most federal housing

that the CARES Act moratorium covered between 28 to 46 percent of occupied rental units nationally, leaving as many as 31 million renter households without federal eviction protection.¹³ In the context of limited federal renter protection under the CARES Act, many states and counties issued moratoria on rental evictions, ranging from a few weeks to several months. During March 2020, 38 U.S. states including California, Florida, Texas, New York and the District of Columbia issued eviction moratorium. Massachusetts and 5 other states enacted eviction moratoria in April. Virginia enacted such a rental market treatment in July. Some of the states, including Alabama, Mississippi and Nebraska, concluded the eviction moratorium by the end of May. Arkansas, Idaho and New Mexico discontinued treatment in June. Seven states never implemented eviction moratorium.

In addition to the federal and state eviction moratorium, many counties and cities implemented local eviction moratorium. Sometimes local ordinances were issued in states that failed to enact eviction moratoria. Elsewhere, the local ordinances often appeared redundant to those imposed by state treatments. Indeed, a myriad of explanations are ascribed to the passage of local eviction moratoria in treated states, notably including differences in timing of measures, efforts by local authorities to raise awareness of such measures among both landlords and tenants, and to establish local jurisdiction for purposes of local enforcement of such ordinances (Benfer et al. (2020)). Among the 626 counties in the eviction lab dataset, 94 counties implemented eviction moratoria, of which 25 are in California. Below we separately identify and estimate the effects of state and local treatment.

programs, including public housing, the Housing Choice Voucher program, Low Income Housing Tax Credit properties, and rural housing programs administered through the U.S. Department of Agriculture (USDA). Also included in the protections were renters in homes with mortgages owned, securitized, or insured by Fannie Mae, Freddie Mac, the Department of Housing and Urban Development (HUD), USDA, or other federal agencies. For more information, please see U.S. Congress CARES Act, 2020. “Temporary Moratorium on Eviction Filings,” Section 4024.

¹³See, Federal Reserve Bank of Atlanta, “Housing Policy Impact: Federal Eviction Protection Coverage and the Need for Better Data”, by Sarah Stein and Nisha Sutaria.

Commencing September of 2020, the Centers for Disease Control and Prevention (CDC) broadened the federal eviction moratorium to effectively protect all of the nation’s 43 million rental households through December 2020. In the wake of the issuance of the CDC ordinance, state and local treatment largely became redundant.¹⁴ Hence we limit our study period to March-August 2020.

III. Data and Research Design

A. Data Sources

A primary source of data for this study is the Federal Reserve Y-14M regulatory report. That report contains detailed information on the asset portfolios of bank holding companies (BHCs) required to participate in Comprehensive Capital Analysis and Review and Dodd Frank Act Stress Tests. The Federal Reserve dataset contains about 50 billion records for over 500 million anonymised credit card accounts in the U.S. The data cover over 80 percent of the market and well represent the universe of credit cards outstanding. The monthly report at the account-level contains detailed information about borrowers’ credit card purchases, cash withdrawal, transfer, convenience checks, payment, balance, interest charges and fees, and the like. It also contains updated borrower credit score and other borrower characteristics.¹⁵

For purposes of our study, we aggregate the account level credit card data to the zip code-level and form a zip code by month panel. We focus on three outcomes, including credit card spending, credit card payment, and credit score. To compute credit card spending, we include purchases using credit cards, cash withdrawals and convenience checks but exclude

¹⁴For further details, see the Federal Register <https://www.federalregister.gov/documents/2020/09/04/2020-19654/temporary-halt-in-residential-evictions-to-prevent-the-further-spread-of-COVID-19>.

¹⁵We work with a 1 percent random sample of the data.

balance transfers so as to avoid double counting. In order to account for seasonality, we calculate year-over-year changes of the three outcome terms, the first two as percentage changes and the last as change in credit score points. We exclude zip codes with fewer than 100 accounts in 2020 to ensure that the change statistics are not affected by outliers. We merge eviction moratorium data and other macroeconomic controls such as unemployment rate and house price index (HPI) to our credit card data using geographic identifiers such as county FIPS and state name, depending on the level of granularity of the macro variables.

As suggested above, the paper seeks to assess the effects of eviction moratoria on a wide array of indicators of household spending and well-being. To that end, we also use the real-time Opportunity Insight Economic Tracker (hereinafter Opportunity Insight) data from [Chetty et al. \(2020\)](#) that measure consumer spending. These data are compiled largely based on aggregated and anonymised information on credit and debit card spending collected by Affinity Solutions Inc.¹⁶ The Opportunity Insight data are not as granular in geography as the Federal Reserve data in that they are available only at the state- or county-level. However, a distinct advantage of the Opportunity Insight data is that, at the state-level, they contain measures of consumption by category of spending, including non-durable spending, spending on grocery and food store, spending on health care, and the like. The data are seasonally-adjusted in that year-over-year changes are calculated. The seasonally-adjusted series are then compared to the pre-COVID-19 levels in the first four weeks of 2020 (January 4-31).

To assess the effect of rental policy interventions on food insecurity and mental health disorders we compiled information from the Census COVID-19 Household Pulse Survey.

¹⁶Affinity Solutions Inc is a company that aggregates consumer credit and debit card spending information to support a variety of financial service products, such as loyalty programs for banks. Affinity Solutions captures nearly 10% of debit and credit card spending in the U.S.

That Survey commenced on April 23, 2020 and sought to provide insights into household social and economic COVID-19 pandemic effects. The Survey collected information on a weekly basis for 10 consecutive weeks on food sufficiency and security. We define “food insecurity” as the share of survey respondents that indicated that they sometimes or often don’t have enough food to eat (in the past 7 days). We also use search query data from Google Trends to develop broad-based and real-time search indicators related to food insecurity.¹⁷ As of October 2020, Google accounted for 62% of all US internet searches.¹⁸ Hence, internet queries through Google are representative of the US internet population. Google Trends reports the search frequency for a given search term relative to all other search terms in the form of a Search Volume Index (SVI).¹⁹ We begin by considering food insecurity related keywords, such as “food” in combination with the word “help” or “assistance”. This process led to three key search terms, including “Food Stamps”, “Food Assistance”, “Food Banks Near Me”. Regarding indicators of household mental health, the National Center for Health Statistics (NCHS) partnered with the Census Bureau to include three questions in the 2020 weekly Household Pulse Survey that ask about symptoms of anxiety or depression. The three mental health outcome terms include “feeling anxious”, “can’t stop worrying”, and “feeling down”. For each of the three indicators, we define the percentage of people who replied that they experience this feeling more than half the days or nearly everyday over the last seven days.

¹⁷<https://trends.google.com/trends/>

¹⁸As measured by statista. Further, according to the Pew Research Center, 92% of online adults use search engines, See <http://www.pewinternet.org/Reports/2011/Search-and-email/Report.aspx>.

¹⁹For more information, see Chauvet et al. (2016)

B. Summary Statistics

Table 1 presents summary statistics of those variables (see Table A.1 for detailed definition of each variable). Panel A reports summary statistics for the eviction filing and state and county eviction moratoria, implemented in the US as a response to the COVID-19 pandemic. The mean number of eviction filings among cities in the U.S. on April 23 2020 was 63; eviction filings rose to 139 on July 9. As of April 23, 40 states had implemented eviction moratoria.

Panel B reports the Federal Reserve Y-14M variables, including credit card spending, payment, and credit score. Our credit card data sample from the Federal Reserve contains 46,064 monthly observations for 9,870 zip codes for April-August 2020. The sample includes all 50 states and the District of Columbia. Due to the pandemic and related shutdown, there is a large reduction in credit card spending. The average year-over-year (YoY) spending declined about -14% from April to August 2020. Credit card payment also declined year-over-year. These trends are also depicted in Figure 2. Panel A of the figure shows a large decline in spending in April followed by a slow recovery through the summer months. Panel B shows significant variations across states in credit card spending. Finally, in Appendix Figure A.1, we plot the distribution of the zip code-level credit card spending and payment changes. The time-series spending patterns as well as cross zip code variations are clearly evidenced in the density plots.

Panel C reports the change in various categories of consumer spending relative to January 2020,²⁰ as reported by Opportunity Insight (Chetty et al. (2020)). The trends in the main categories are depicted in Figure 3 for selected a few states and Washington DC.

Panels D and E report summary information on food insecurity and population mental health and by race from the COVID-19 Census Pulse Survey. Panel F reports summary

²⁰Seasonally adjusted credit/debit card spending relative to January 4-31 2020, in annual terms

information on food insecurity search query from Google Trends. The Google indices indicate an increase in search for terms related to food insecurity throughout the March to August 2020 study period.

As a first step in the analysis, we seek to assess the reasonableness of the eviction moratorium data by correlating state eviction moratoria and reductions in eviction filings. Our information on eviction filings is obtained from the Eviction Tracking System of the Eviction Lab dataset as described above (see [Benfer et al. \(2021\)](#)). As shown in Appendix Table A.2 we separately assess the effects of state and county eviction moratoria on eviction filings in the 27 U.S. cities covered in the Eviction Lab data. Our regressions include county-level labor and housing market controls as well as county and week fixed effects. The county-level eviction moratoria regressions alternatively employ MSA by week fixed effects. Column 1 in Table A.2 shows that an additional week of state eviction moratoria treatment (lagged in two weeks) is associated with a decline of 129 eviction filings compared to a state-weekly average of 125 eviction filings.²¹ A difference-in-differences (DID) regression shown in Column 2 suggests that the reduction of eviction filings is mostly in high renter share counties, which is intuitive. Here *Target* is an indicator that the county is ranked in the top quartile in terms of both renter share and unemployment rate.²²

As described above, certain counties implemented eviction moratoria even in the presence of similar state-wide policy treatment. In columns 3 and 4 of Table A.2, we seek to ascertain whether there is an incremental benefit to county-level policy. To address that question, we select places where both state- and county-level eviction moratoria were in place and re-run

²¹Similarly, [Ellen et al. \(2020\)](#) study the effect of implementing universal access to counsel in New York City for low-income tenants facing eviction and find a reduction in the share of eviction filings.

²²To derive a clean identification of the effect of state eviction moratorium, in the first two columns, we comprise the sample to include only those states (state-week) where no county-level eviction moratorium was in place. For each state, we move the implementation dates by two weeks, such that the focus variable is lagged by two weeks.

our models. Column 3 of Table A.2 shows that an additional week of county eviction moratoria (in already treated states) is associated with a decline of 80 eviction filings compared to a state- weekly average of 125 eviction filings. However, the DID results shown in Column 4 fail to indicate significant incremental effects of county eviction moratoria among targeted high renter share counties. Overall, imposition of eviction moratoria had the intended effect of reducing eviction filings during a period of pandemic distress.

C. Empirical Strategy

We employ a panel data model with fixed effects to identify the relation between eviction moratorium and household well-being. Our observations are at zip code-, county-, or state-level and our outcome variables vary by month or week. Given sample structure, we estimate the following model:

$$Y_{it} = \alpha + \beta V_{it} + X'_{it}\gamma + \tau_t + \zeta_i + \varepsilon_{it}, \quad (1)$$

where Y_{it} stands for the outcome in zip code/county/state i at time t , V_{it} is an indicator of the treatment, eviction moratorium, in geography i and period t ; and X_{it} is a matrix of time- and space-varying control variables such as unemployment rate and house price appreciation. τ_t and ζ_i are time- and geography- fixed effects. Finally, ε_{it} stands for the error term, which are assumed to be clustered at the state- or county-level. The coefficient β is the treatment effect of eviction moratoria.

Eviction moratoria specifically target renter populations, especially those that are having rental payment difficulties. Therefore, we use the contrast between renters and homeowners to aid in identification. In that regard, in addition to the baseline model we explained above,

we estimate the following treatment intensity difference-in-differences (DID) regression:

$$Y_{it} = \alpha + \beta_1 V_{it} + \beta_2 V_{it} R_i + \beta_3 R_i + X'_{it} \gamma + \tau_t + \zeta_i + \varepsilon_{it}, \quad (2)$$

where R_i is a treatment intensity indicator and it is based on the local renter share and unemployment rate as a proxy for the share of local population in financial distress. More specifically, R_i is a dummy variable for zip codes in the top two quartiles in terms of both renter share and unemployment rate in April, the first peak of the COVID-19 pandemic.²³ Note that the impact of R_i is absorbed by the fixed effects in the regression. In this DID setting, eviction moratorium is the treatment, and areas with high renter share and high financial distress are more intensively "treated". β_2 is the lower-bound estimate of the treatment effect. This augmented specification helps our inference of the causal impact as renters (especially those in financial distress), not homeowners, are the target beneficiaries of the eviction moratoria intervention. This same econometric structure is utilized in analysis of Opportunity Insights and other outcome terms at the county and state levels.

IV. Results

A. Credit Card Spending, Payment and Credit Score

We first present results based on the Federal Reserve Y-14M credit card data. Our sample is a zip code by month panel of year-over-year changes in credit card spending, payment, and borrower credit score.²⁴ The data span April to August of 2020. Table 2 contains

²³See, e.g., "Three peaks: How the coronavirus pandemic is evolving in each state," NBC News, November 12, 2020.

²⁴The unit of observation is zip code month.

estimates of the impact of state-level eviction moratoria. Our focus variable is an indicator of presence of a state-level eviction moratoria in the zip code during a particular month. We lag the focus variable by two weeks.²⁵

In column 1, we show the baseline model results for credit card spending. The positive coefficient of the *State Evic. Mor.* term indicates that the presence of a state eviction moratorium is associated with elevated zip code credit card spending. Zip codes are heterogeneous in demographic structure and economic conditions. Hence, we include zip code-fixed effects to control for cross-sectional variations in these and other factors. We also include a month-fixed effect to control for time variation in economic or other conditions (note that possible seasonality is addressed via our focus on year-over-year changes in the spending term), In addition, we include two county-level and time variant drivers of zip code spending, including those that proxy for fluctuations in household income and wealth. Those factors are the county-level unemployment rate and one-quarter lagged house price appreciation (HPA). Unemployment status is a major factor that affects household income and related propensity to spend and service debt. HPA provides a proxy for fluctuations in capacity to spend out of housing wealth.²⁶

Column 1 estimates the average rental eviction moratorium treatment effect. Note that COVID-19 eviction moratoria sought to target unemployed renter households experiencing difficulties in payment of rent. Hence, our target group is defined as those zip codes in the upper half of renter share with high levels of unemployment in April 2020. The focus variable is an interaction of *State Evic. Mor.* with the *Target* indicator. Results of the treatment intensity difference-in-differences (DID) analysis indicate a positive and significant effect of

²⁵To identify the effects of state eviction moratorium, we comprise a sample of only those states (state-month) where no county-level eviction moratorium was in place.

²⁶As shown in column 1, local unemployment rates are negatively associated with spending growth. HPA is estimated with a positive sign but is insignificant.

state eviction moratoria on credit card spending among targeted zip codes. The regression includes controls for county unemployment rate, lagged HPA and zip code- and month-fixed effects. The estimated credit card spending effect of state-level eviction moratorium is also economically significant. The one-month target zip code treatment effect is 1.356 percent, meaning that a 12-month treatment effect amounts to about 16 percent ($1.356 \times 12 = 16$). To put this into perspective, the average year-over-year decline in credit card spending in April is 25 percent, and the 75th percentile is 38 percent.

In Appendix Figure A.2, we show results of the parallel trend test. We shift the moratoria implementation (“event”) dates by a defined number of weeks for each state and then re-run the DID regression. Results indicate that there exists a parallel trend between treatment and control groups prior to the actual event date, validating our assumption of no pre-trend in the DID analysis.

We now turn to credit card payments. Here our specification also includes lagged spending to account for the fact that households typically increase debt paydown in the wake of an increase in prior month’s spending. Column 3 shows results of estimation of the baseline model while column 4 shows results of the difference-in-differences (DID) analysis of eviction moratoria among targeted high renter share zip codes. While the average treatment effect is not statistically significant, the estimated coefficient for eviction moratoria treatment in targeted areas is positive and significant, indicating elevated debt payoff among targeted zip codes in states implementing eviction moratoria. The payment effect of state eviction moratoria among targeted zones is also economically significant: a 12-month eviction moratorium is associated with a 14 percent increase credit card debt paydown.²⁷

Finally, the last two columns of Table 2 show the estimated impact of state eviction

²⁷Consistent with our priors, lagged spending growth is estimated with a positive and significant coefficient.

moratorium on borrowers' credit score. Given that credit score is typically viewed as a lagging indicator of borrowers' credit usage and performance, we use two-month lead credit score. Hence we study changes in borrowers' credit score two months subsequent to the implementation of eviction moratoria. The model specification is similar to those of the spending and payment regressions, except that we now include lagged spending and payment as added controls. As shown, while the average treatment effect is insignificant, we estimate a positive and statistically significant effect of eviction moratoria in target zip codes. The magnitude of the effect is relatively small: a 12-month treatment of state-level eviction moratorium results in a 4 point increase in credit score.²⁸

As described above, certain counties implemented eviction moratoria even in the presence of similar state-wide policy treatment. In those cases, we seek to ascertain whether there was an incremental benefit to the county-level interventions. To address that question, we select places that enacted state-level eviction moratoria and then re-estimated our models so as to assess the effects of added county treatment.²⁹ As shown in Appendix Table A.3, the estimated treatment terms are not statistically significant, suggesting little incremental effect of county-level treatment among states that enacted rental eviction moratoria.

²⁸During the pandemic study period, government provided emergency income support to households including stimulus checks and added unemployment benefits, many of whom are the credit card borrowers that we study in this paper. To account for the potential impact of transfer income on credit card spending and payment, we included real disposable income as an additional control and re-estimated all models. Results are robust and highly consistent with what we present in Table 2.

²⁹Given that the treatment effect of interest is now at the county-level, we use MSA by month-fixed effects to account for variations in economic and other factors both across MSAs and over time. These fixed effects also absorb the state-level treatment effects, so the coefficient of the county-level eviction moratorium captures the incremental effect of the county-level policy.

B. Consumer Spending by Category

We seek to expand the above credit card spending analyses using data from the Opportunity Insight database assembled by [Chetty et al. \(2020\)](#). The Opportunity Insight data are not as granular in geography as the Federal Reserve data, but an advantage of that dataset is that it covers both credit and debit cards. In addition, the Opportunity Insight data enable disaggregation of household spending by category of consumption.

Before we move on to detailed spending categories, we compare the aggregate spending effects as reflected in the Opportunity Insight data and in the Federal Reserve data. To facilitate comparison, our model timeframe and specification consistent with that of the credit card zip code analysis.

In Appendix Table [A.4](#) , Column 1 shows that an additional week of state eviction moratorium is associated with an increase of overall annual spending of 1.2 percent. This compared to an overall decline in yearly spending of 23 percent (see Table [1](#)). Results displayed in column 2 indicate that a one-week state treatment effect among policy targeted counties is associated with an annual spending increase of 1.7 percent.³⁰ Overall, results of the Opportunity Insights data serve to corroborate analysis of Federal Reserve credit card data in estimating positive and significant salutary effects of state pandemic rental eviction moratoria on household consumption spending.

The disaggregation of household spending by category in the Opportunity Insights data allows us to test for effects of the role of eviction moratoria in supporting immediate and pressing household consumption needs, notably including nondurable retail and food con-

³⁰In columns 3 and 4 of Table [A.4](#) , we undertake assessment analogous to the above of incremental effects of county-level eviction moratoria on county level spending. Consistent with the credit card analysis, results of the baseline Opportunity Insights model fail to provide evidence of significant increments in household consumption spending among counties also adopting eviction moratoria.

sumption. As suggested above, deferral of household rent payments as provided by the eviction moratoria may have enabled re-direction of scarce household financial resources to immediate consumption needs. Here we would expect to see asymmetric effects of policy intervention with more beneficial treatment effects estimated for non-durable categories.

Results of this analysis are presented in Table 3 . There we report on the impact of state-level eviction moratoria on state spending by category. As evident, model specification is similar to those above. Definition of spending category is described in a note to Table 3 and is in accordance to the Opportunity Insight data. Overall, results of disaggregation of spending by category provides new insights as are consistent with hypotheses. As evidenced in the pattern of coefficients on the treatment term, in general household spending is significantly boosted by eviction moratoria treatment in the various retail, grocery, and food service categories, indicating broad unanticipated effects of the policy treatment in supporting household food needs. Table 3 shows that a state eviction moratoria is associated with an annual increase in spending on food service (column 1) by 1 percent, with a 0.9 percent increase in grocery spending (column 3), and an annual increase in non-durable spending (column 9) by 1.4 percent.

C. Food Insecurity

The period of the COVID-19 pandemic similarly was marked by widespread media reports of food insecurity among populations substantially adversely affected by virus economic fallout. As indicated above, rental eviction moratoria and related deferral of rent payments enabled re-direction of household scarce financial resources to food and grocery spending. In so doing, the rental eviction policy treatment may have helped to alleviate household food

insecurity.³¹ In this section, we employ new pandemic period survey research data from the Census Bureau to directly assess the effects of eviction moratoria on survey-based measures of food insecurity. Our survey-based measures come from the Household Pulse Survey, an entirely new survey intended to measure the effect of the pandemic on the well-being of households. Our paper uses the data collected for Phase 1 of the Household Pulse Survey, which commenced on April 23, 2020 and concluded on July 21, 2020.³² Specifically, we assess survey responses whereby households declare that in the prior 7 days they "Sometimes do not have enough food to eat" or "Often do not have enough food to eat". We evaluate state-level survey responses over the April 23 2020 through July 9 2020 period. Responses to the food insecurity questions were also provided only for Hispanic or Latino and for African American households.

In panel A of Table 4 we use information from the Census Pulse survey and report the results of regressions of state eviction moratoria on food insecurity. We define "food insecurity" as the share of respondents who over the past 7 days declared that they sometimes or often didn't have enough food to eat. We include week fixed effects to control for time variation in overall economic or other conditions. We also include state fixed effects to control for related cross-sectional variations. In addition, we include two state-level and time variant drivers of food insecurity, namely the state-level unemployment rate and the

³¹Rosen et al 2020 survey almost 800 households in Los Angeles in 2019 to examine the impact of housing affordability constraints on Los Angeles renters. They find that rent-burdened households are more likely to have reduced food consumption than non-rent-burdened households, especially among Latino and Black families.

³²The Household Pulse Survey was a 20-minute online survey studying how the coronavirus pandemic impacted households across the country from a social and economic perspective. The survey asked questions about how education, employment, food security, health, housing, social security benefits, household spending, consumer spending associated with stimulus payments, intention to receive a COVID-19 vaccination, and transportation were affected by the ongoing crisis. For more information, see <https://www.census.gov/programs-surveys/household-pulse-survey.html>. Data collection for Phase 2 of the Household Pulse Survey began on August 19, 2020. As this paper undertakes analysis of eviction moratoria treatment effects through the end of August, 2020, we focus only on the initial phase of the survey.

one-quarter lagged rate of house price appreciation (HPA), to proxy for cross-state and over time fluctuations in income and wealth. Column 1 of Table 4 estimates the average rental eviction moratorium treatment effect (lagged in two weeks) on food insecurity. The estimated coefficient is negative but not statistically significant. In column 2, we focus on food insecurity among the sampled African American population. There the estimated effect is negative and statistically significant; an additional week of rental eviction moratoria treatment is associated with a decline of 2 percent in the number of African American households that declared as food insecure. On average, over the 10 weeks of the Census Pulse Survey, 21 percent of African American households declared that in the prior 7 days they "Sometimes do not have enough food to eat" or "Often do not have enough food to eat". Results do not yield a significant effect of rental policy treatment on either food insecurity among Hispanic households or in household use of food banks.³³

We seek to corroborate effects of rental eviction moratoria on food insecurity using search query information downloaded from Google Trends. That data allow us to develop real-time indicators of food insecurity.³⁴ As of October 2020, Google accounted for 62 percent of all US internet searches.³⁵ Hence, internet queries through Google are representative of the US internet population. Google Trends reports the search frequency for a given search term relative to all other search terms in the form of a Search Volume Index (SVI).³⁶ We begin by considering food insecurity keywords, such as "food" in combination with the word "help." This process leads to 3 key search terms, including "Food Stamps", "Food Assistance", "Food Banks Near Me", "Help Food".

³³As indicated in the survey as those households that use "Food pantry or food bank as provider of free groceries or free meal/Total, in the last 7 days.

³⁴<https://trends.google.com/trends/>

³⁵As measured by statista. Further- more, according to the Pew Research Center, 92 percent of online adults use search engines, See <http://www.pewinternet.org/Reports/2011/Search- and- email/Report.aspx>.

³⁶For more information, see [Chauvet et al. \(2016\)](#)

In panel B of Table 4 report the results from regressions of eviction moratoria on food insecurity, using related search query terms from Google Trends, controlling for unemployment rate, and week and state fixed effect. Columns 1 and 3 of Table 4 show that state eviction moratoria significantly reduce Google search for "Food Stamps" and "Food Banks Near Me". An additional week of a state eviction moratorium reduces Google search query for "Food Stamps" by 3.4, relative to an average SVI for that term of 40.5 between March to August 2020. Similarly, an additional week of state eviction moratoria reduce the amount of Google search of "Food Banks Near Me" by 5.1, relative to an average Google search for that term of 20.5 between March to August 2020.

D. Mental Health

The Census Household Pulse Survey partnered with the National Center for Health Statistics to monitor changes in population mental health in the wake of the COVID-19 pandemic. Indeed, a myriad of anecdotal reports suggested broad-based and elevated deterioration in mental health in the wake of the COVID-19 pandemic. Table 1 provides summary information from the Census Pulse Survey indicated that on average some 30 percent of households felt depressed or down during the pandemic survey period. Indeed, fear of eviction and related inability to pay rent may have contributed to elevated anxiety or related deterioration in mental health. If so, those symptoms may have been relieved by a temporary stay in eviction. Specifically, the Census Pulse Survey included questions on the frequency of anxiety and depression symptoms. Our paper uses responses to three questions from the survey including frequency of "feeling nervous, anxious, or on edge for more than half the days or nearly everyday", "not being able to stop or control worrying for more than half the days or nearly everyday", and "feeling down, depressed, or hopeless for more than

half the days or nearly everyday”. That information was tabulated each week from April 23 2020 to July 9 2020 at the state level. The survey data also provides information on those questions separately for Hispanic and African American households.

Table 5 reports the results from regressions of state eviction moratoria on the survey indicators of mental health. We include a weekly fixed effect to control for time variation in the overall economic or other conditions. We also include state-level fixed effects to control for cross-sectional variations. As above, we control for state-level unemployment rate and one-quarter lagged house price appreciation (HPA). Columns 1-3 of Table 5 estimate the average rental eviction moratorium treatment effect (lagged in two weeks) on the share of households that reported “feeling anxious” during the pandemic. As indicated in column 3, a negative and significant treatment coefficient is estimated for African American households. Here an additional week of rental eviction moratorium is associated with a decline of 1.9 percent in the share of African American households who reported “feeling anxious”. On average, Pulse Survey results showed an increase by roughly one-third in the share of African American households who reported “feeling anxious” during the April to August 2020 pandemic period. Similarly, as shown in column 12, a negative and statistically significant rental eviction moratoria treatment effect is estimated for share of African American households “feeling down” during the pandemic study period. Results indicate that an additional week of policy treatment is associated with a reduction by 1.6 percent in the share of African American households who reported “feeling down”. As suggested in the summary information, the pandemic study period witnessed a roughly one-quarter increase in share of African American households who reported “feeling down”. Column 4 of Table 5 shows that eviction moratoria lower the number of households that declare they “Can’t stop worried” by 1%, compare to an overall increase of 23.8% in the amount of households that “Can’t stop worried” during

the pandemic.

V. Conclusions and Discussion

The COVID-19 pandemic exposed an estimated 17 million U.S. households to eviction risk.³⁷ To assure ongoing shelter of idled households and to damp pandemic virus spread, many states and counties in the U.S. enacted rental eviction moratoria. In this paper, we apply new panel data from the 2020 pandemic period to test the effects of rental eviction moratoria on measures of household well-being including household spending and debt, food insecurity, and mental health outcomes.

Our findings suggest that COVID-19 rental eviction moratoria had broad salutary effects during a period of widespread virus and economic distress. We firstly document that pandemic eviction moratoria resulted in substantial reduction in eviction filings. Analysis of both Federal Reserve and Opportunity Insights data indicate that the imposition of rental eviction moratoria served to boost household spending, notably as regards food and grocery spending and among targeted high renter share and high unemployment neighborhoods. Eviction moratoria also reduced Census Pulse Survey measures of food insecurity and mental stress, especially among African American households. Results are further corroborated in analysis of search query data from Google.

However, the above estimated benefits associated with eviction moratoria come with a cost. Moody's Analytics estimates that upward to \$70 billion in outstanding rent debt was

³⁷See [Benfer \(2020\)](#). While the pandemic has focused attention on eviction risk during a period of virus and related economic exigency, it is important to note that tenant evictions are commonplace during normal times and that research clearly documents their adverse and deleterious effects on individuals and communities. For example, evictions are associated with increased violence in communities ([Sampson and Sharkey, 2008](#)), lower educational attainment ([Pribesh and Downey, 1999](#)), and lasting negative health outcomes ([Dong et al., 2005](#)).

owed to landlords at the end of 2020. Further, the housing assistance provisions of the 2021 American Rescue Plan Act cover only a small portion of those moratoria-deferred rents. The National Low-Income Housing Coalition estimates that the average renter household will owe \$5,400 in missed payments even in the aftermath of 2021 federal assistance.³⁸ Also, the University of Arizona Cost of Eviction Calculator estimates that expiration of eviction moratoria could lead to emergency shelter, medical and foster care, and juvenile delinquency costs associated with evicted and newly homeless renters in the range of \$62 to \$129 billion.

In the absence of new measures to address widespread and accrued shortfalls in rent, large numbers of households could face housing instability, economic hardship, and adverse health outcomes. Among relief measures, numerous states have passed legislation to direct 2021 federal stimulus funds to defray some portion of qualified renter deferred rents. The federal government also has enacted programs to provide mortgage forbearance to some renter property owners. Finally, the combination of expansive fiscal and monetary stimulus will help to accelerate the economic recovery and to put renter households back to work. While our research findings demonstrate broad and not well-appreciated renter and local economic benefits of temporary eviction moratoria, substantial ongoing efforts likely will be necessary to address accrued shortfalls in rent and to keep families stably housed.

³⁸<https://nlihc.org/sites/default/files/costs-of-COVID19-evictions.pdf>

References

- Agarwal, S., B. Ambrose, L. Lopez, and X. Xiao (2020). Did the payment protection program help small businesses? evidence from commercial mortgage-backed securities. *SSRN Working Paper 3674960*.
- Agarwal, S., C. Liu, and N. Souleles (2007). Reaction of consumer spending and debt to tax rebates: Evidence from consumer credit data. *Journal of Political Economy* 115(6), 986–1019.
- Ambrose, B., X. An, and L. Luis (2020). Eviction risk of rental housing: Does it matter how your landlord finances the property? *SSRN Working Paper 3745974*.
- An, X., L. Cordell, L. Geng, and K. Lee (2021). Inequality in the time of covid-19: Evidence from mortgage delinquency and forbearance. *SSRN Working Paper 3789349*.
- Ater, I., Y. Elster, D. Genesove, and E. Hoffmann (2020). Agreements must be kept? residential leases during covid-19.
- Baker, S. R., R. A. Farrokhnia, S. Meyer, M. Pagel, and C. Yannelis (2020). How does household spending respond to an epidemic? consumption during the 2020 covid-19 pandemic. *The Review of Asset Pricing Studies* 10(4), 834–862.
- Bartik, A., M. Bertrand, F. Lin, J. Rothstein, and M. Unrath (2020). Measuring the labor market at the onset of the covid-19 crisis. *NBER Working Paper 27613*.
- Benfer, E. (2020). Covid-19 eviction moratoria by state, commonwealth, and territory. *Wake Forest University School of Law*. <https://docs.google.com/spreadsheets/d/e/2PACX-1vTH8dUIbfnt3X52TrY3dEHQCAm60e5nqo0Rn1rNcf15dPGeXxM9QN9UdxUfEjxwvfTKzbCbZxJMdR7X/pubhtml>.
- Benfer, E. A., S. J. Greene, and M. Hagan (2020). Approaches to eviction prevention. *SSRN Working Paper 3662736*.
- Benfer, E. A., D. Vlahov, M. Y. Long, E. Walker-Wells, J. Pottenger, G. Gonsalves, and D. E. Keene (2021). Eviction, health inequity, and the spread of covid-19: Housing policy as a primary pandemic mitigation strategy. *Journal of Urban Health*, 1–12.
- Chauvet, M., S. Gabriel, and C. Lutz (2016). Mortgage default risk: New evidence from internet search queries. *Journal of Urban Economics* 96, 91–111.
- Cherry, F. S., E. X. Jiang, G. Matvos, T. Piskorski, and A. Seru (2020). Government and private household debt relief during covid-19. *NBER Working Paper 28357*.
- Chetty, R., J. Friedman, N. Hendren, M. Stepner, et al. (2020). How did covid-19 and stabilization policies affect spending and employment? a new real-time economic tracker based on private sector data. *NBER Working Paper 27431*.

- Collinson, R. and D. Reed (2018). The effects of evictions on low-income households. *Unpublished Manuscript.[Google Scholar]*, 1–82.
- Currie, J. and E. Tekin (2015). Is there a link between foreclosure and health? *American Economic Journal: Economic Policy* 7(1), 63–94.
- Desmond, M. (2012). Eviction and the reproduction of urban poverty. *American journal of sociology* 118(1), 88–133.
- Desmond, M. (2016). *Evicted: Poverty and profit in the American city*. Crown.
- Desmond, M. and R. T. Kimbro (2015). Eviction’s fallout: housing, hardship, and health. *Social forces* 94(1), 295–324.
- Diamond, R., T. McQuade, and F. Qian (2019). The effects of rent control expansion on tenants, landlords, and inequality: Evidence from san francisco. *American Economic Review* 109(9), 3365–94.
- DiMaggio, M., A. Kermani, B. Keys, T. Piskorski, R. Ramcharan, A. Seru, and V. Yao (2017). Interest rate pass-through: Mortgage rates, household consumption, and voluntary deleveraging. *American Economic Review* 107(11), 3550–3588.
- Dong, M., R. F. Anda, V. J. Felitti, D. F. Williamson, S. R. Dube, D. W. Brown, and W. H. Giles (2005). Childhood residential mobility and multiple health risks during adolescence and adulthood: the hidden role of adverse childhood experiences. *Archives of pediatrics & adolescent medicine* 159(12), 1104–1110.
- Eichenbaum, M. S., S. Rebelo, and M. Trabandt (2020). The macroeconomics of epidemics. *NBER Working Paper 26882*.
- Elenev, V., T. Landvoigt, and S. Van Nieuwerburgh (2020). Can the covid bailouts save the economy? Technical report, National Bureau of Economic Research.
- Ellen, I. G., K. O’Regan, S. House, and R. Brenner (2020). Do lawyers matter? early evidence on eviction patterns after the rollout of universal access to counsel in new york city. *Housing Policy Debate*, 1–22.
- Favilukis, J., P. Mabile, and S. V. Nieuwerburgh (2019). Affordable housing and city welfare. *NBER Working Paper 25906*.
- Gabriel, S., M. Iacoviello, and C. Lutz (2021). A crisis of missed opportunities? foreclosure costs and mortgage modification during the great recession. *The Review of Financial Studies* 34(2), 864–906.
- Glaeser, E. L. and E. F. Luttmer (2003). The misallocation of housing under rent control. *American Economic Review* 93(4), 1027–1046.

- Granja, J., C. Makridis, C. Yannelis, and E. Zwick (2020). Did the paycheck protection program hit the target? *NBER Working Paper 27095*.
- Greenberg, D., C. Gershenson, and M. Desmond (2016). Discrimination in evictions: Empirical evidence and legal challenges. *Harv. CR-CLL Rev.* 51, 115.
- Johnson, D. S., J. A. Parker, and N. S. Souleles (2006). Household expenditure and the income tax rebates of 2001. *American Economic Review* 96(5), 1589–1610.
- Jones, C. J., T. Philippon, and V. Venkateswaran (2020). Optimal mitigation policies in a pandemic: Social distancing and working from home. *NBER Working Paper 26984*.
- Jowers, K., C. Timmins, N. Bhavsar, Q. Hu, and J. Marshall (2020). Housing precarity & the covid-19 pandemic: Impacts of utility disconnection and eviction moratoria on infections and deaths across us counties. *NBER Working Paper 28394*.
- Mongey, S., L. Pilossoph, and A. Weinberg (2020). Which workers bear the burden of social distancing policies. *CEPR Covid Economics* 12, 69–86.
- Panchal, N., R. Kamal, K. Orgera, C. Cox, R. Garfield, L. Hamel, and P. Chidambaram (2020). The implications of covid-19 for mental health and substance use. *Kaiser family foundation*.
- Pribesh, S. and D. B. Downey (1999). Why are residential and school moves associated with poor school performance? *Demography* 36(4), 521–534.
- Rosen, J., S. Angst, S. D. Gregorio, and G. Painter (2020). How do renters cope with unaffordability? household-level impacts of rental cost burdens in los angeles. *USCPrice Research Brief*.
- Sampson, R. J. and P. Sharkey (2008). Neighborhood selection and the social reproduction of concentrated racial inequality. *Demography* 45(1), 1–29.
- Sheen, J., A. Nande, E. L. Walters, B. Adlam, A. Gheorghe, J. Shinnick, M. F. Tejada, A. J. Greenlee, D. Schneider, A. L. Hill, et al. (2020). The effect of eviction moratoriums on the transmission of sars-cov-2. *medRxiv*.
- Sims, D. P. (2007). Out of control: What can we learn from the end of massachusetts rent control? *Journal of Urban Economics* 61(1), 129–151.

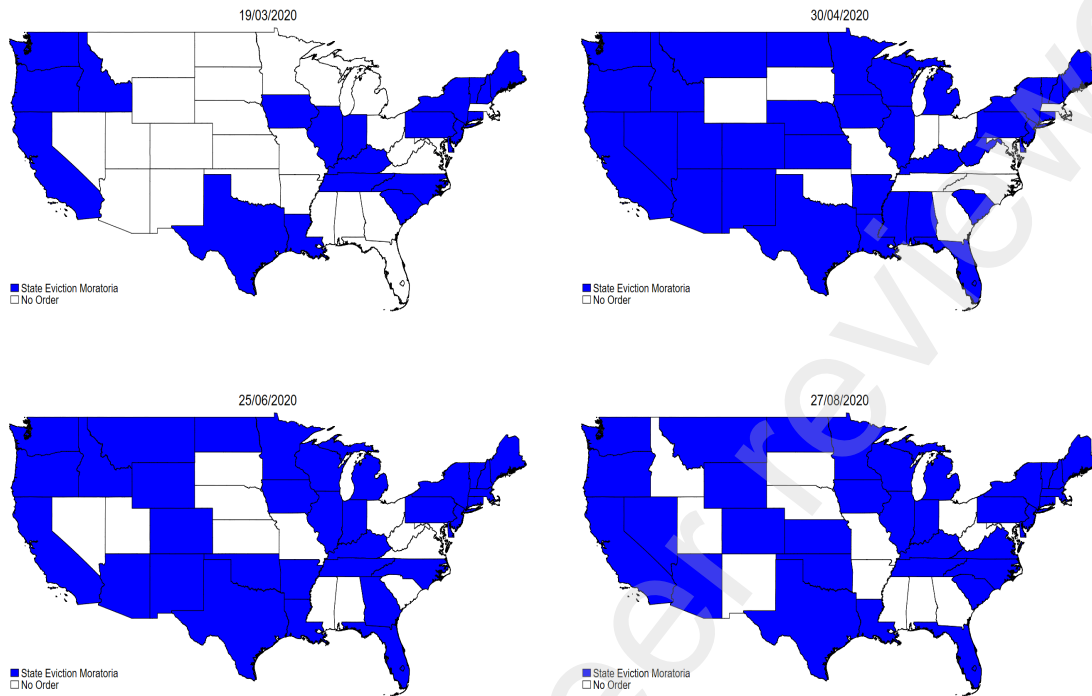


Figure 1. Dynamic Maps of Eviction Moratoria for U.S. States

Notes: The figure describes the geographic and temporal incidence of eviction moratoria using a series of dynamic treatment maps at the state-level. The maps are updated on an ongoing basis and are available at the following website: <https://covid19evictionmoratoria.anderson.ucla.edu/map/>. Eviction Moratoria Refers to implementation of eviction moratorium in specific locations due to the COVID-19 pandemic. Data sources include: The Eviction Lab at Princeton University, Emily Benfer at Wake Forest University, and authors' own calculations.

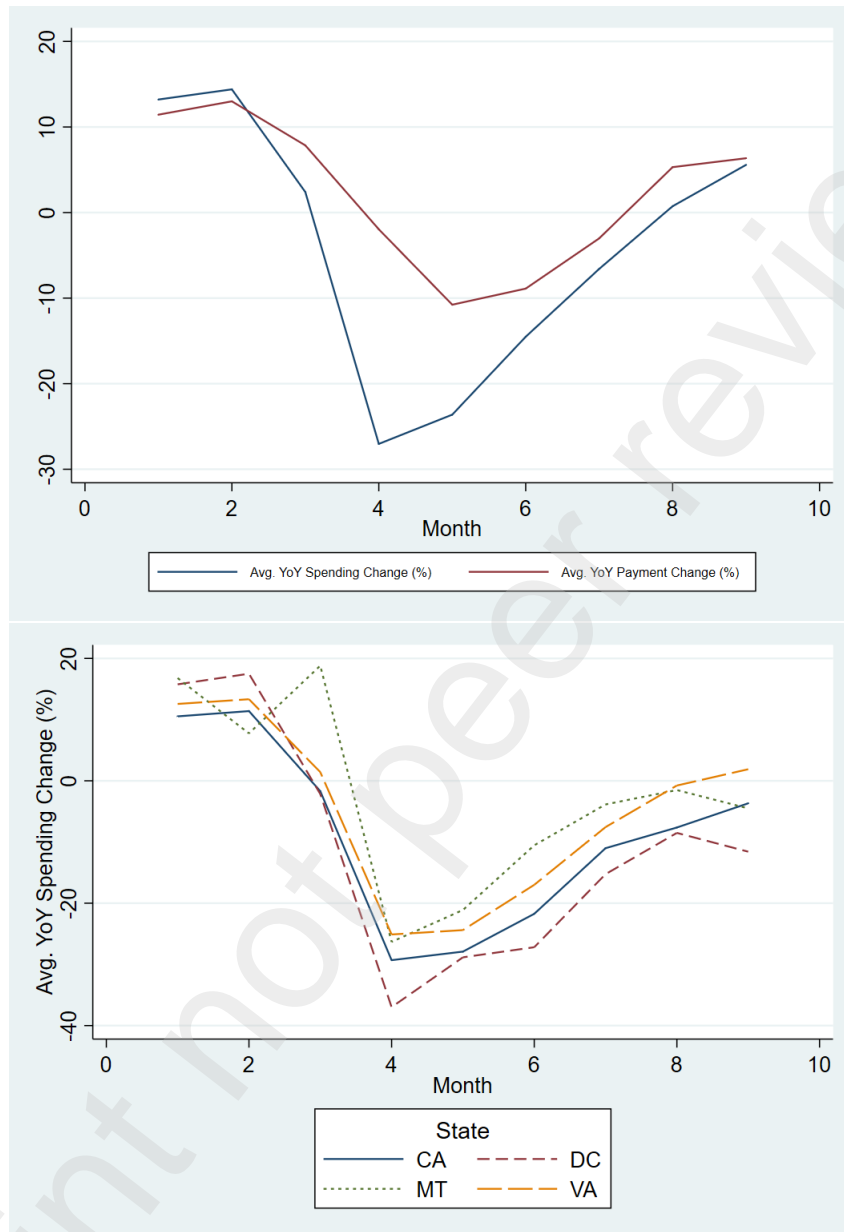


Figure 2. Credit Card Spending and Payment Year-Over-Year Changes

Notes: The figure describes the average year-over-year changes in zip code-level credit card spending and payment. Panel A shows the averages of a national sample of zip codes and Panel B shows the averages by state for a selected number of states. We exclude zip codes with fewer than 100 credit card accounts in our data as well as those outside of Metropolitan Statistical Areas (MSAs) to minimize outlier impact. Data source is the Federal Reserve Y-14M.

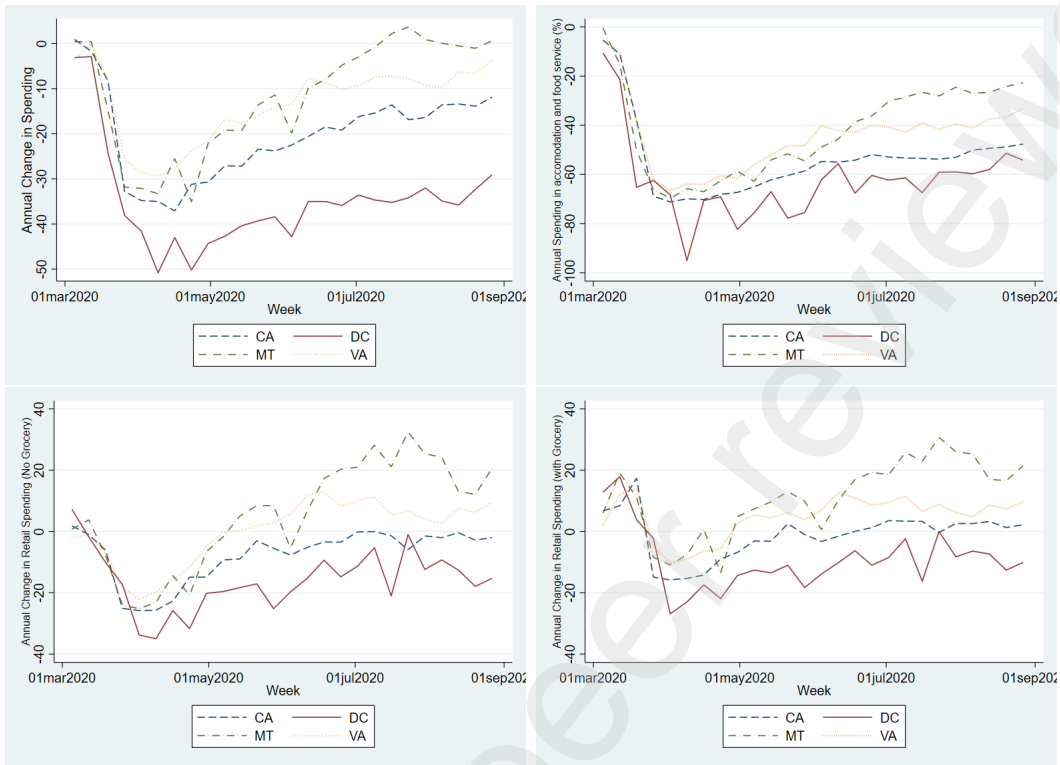


Figure 3. Spending by Categories Year-Over-Year Change

Notes: The figure describes the average year-over-year changes in state spending by categories. Panel A shows the averages change by week overall spending for a selected number of states and Panel B shows the averages change by week in accommodation and food service for a selected number of states. Panel C shows the annual averages change by week on retail spending (no grocery) for a selected number of states and Panel D shows the annual averages change by week on retail spending (with grocery). Data source is the Opportunity Insight Economic Trackers.

Table 1 Summary Statistics

| | March-August 2020 | | | | |
|---|-------------------|--------|-----------|--------|-------|
| | Obs | Mean | Std. Dev. | Min | Max |
| | (1) | (2) | (3) | (4) | (5) |
| Panel A - Eviction Moratoria | | | | | |
| County Eviction Filing | 1,148 | 125 | 212 | 0 | 1,890 |
| State Evic. Mor. | 1,326 | 0.75 | 0.43 | 0 | 1 |
| County Evic. Mor. | 16,016 | 0.09 | 0.28 | 0 | 1 |
| Panel B - Federal Reserve Y-14M: Credit Cards | | | | | |
| Number of credit card accounts | 9,697 | 391 | 278 | 100 | 2,495 |
| Spending change | 45,835 | -13.96 | 24.86 | -56.65 | 65.33 |
| Payment change | 45,832 | -3.71 | 25.91 | -48.21 | 80.98 |
| Score change | 36,038 | 3.19 | 4.67 | -67.62 | 31.57 |
| Panel C - Opportunity Insight Database | | | | | |
| County Spending | 41,392 | -10.11 | 16.10 | -118 | 38.7 |
| State food service spending | 1,326 | -39.42 | 16.67 | -95 | 4.96 |
| State merchandise stores | 1,326 | -15.53 | 17.05 | -63.3 | 28.1 |
| State grocery spending | 1,326 | 13.88 | 12.36 | -53.8 | 103 |
| State health care | 1,326 | -26.18 | 21.12 | -109 | 126 |
| State transportation | 1,326 | -52.8 | 13.68 | -98.3 | 1.11 |
| Retail with grocery | 1,326 | 7.13 | 9.02 | -26.9 | 35.7 |
| Retail no grocery | 1,326 | 4.13 | 12.27 | -35 | 34 |
| Durable | 1,326 | -108.2 | 29.22 | -200.1 | 29.11 |
| Non-durable | 1,326 | -67.27 | 50.3 | -268.1 | 92.98 |
| Panel D - Census Pulse Survey: Food Insecurity | | | | | |
| Food insecurity | 612 | 9.45 | 2.9 | 2.65 | 20.4 |
| Food insecurity Hispanic | 504 | 16.8 | 8.5 | 0.76 | 54.6 |
| Food insecurity Black | 434 | 21.4 | 11.2 | 3.26 | 85.2 |
| Food banks | 612 | 2.22 | 1.23 | 0.13 | 8.75 |

Summary Statistics - Cont.

| | March-August 2020 | | | | |
|--|-------------------|-------|-----------|-------|-------|
| | Obs | Mean | Std. Dev. | Min | Max |
| | (1) | (2) | (3) | (4) | (5) |
| Panel E - Google Search Query | | | | | |
| Food Stamps | 1,326 | 40.5 | 22.8 | 0 | 100 |
| Food Assistance | 1,170 | 23.9 | 28.0 | 0 | 100 |
| Food Banks | 1,170 | 20.45 | 25.5 | 0 | 100 |
| Help Food | 1,326 | 37.1 | 26.9 | 0 | 100 |
| Panel F - Census Pulse Survey: Mental Health | | | | | |
| Feeling Anxious | 612 | 29.4 | 4.21 | 18.4 | 42.7 |
| Feeling Anxious Hispanic | 604 | 33.5 | 12.2 | 7.01 | 82.2 |
| Feeling Anxious Black | 530 | 31 | 12 | 2.55 | 90.8 |
| Cant Stop Worrying | 612 | 23.8 | 4.24 | 13.2 | 37.1 |
| Cant Stop Worrying Hispanic | 602 | 28.4 | 11.8 | 2.95 | 80.5 |
| Cant Stop Worrying Black | 521 | 28.7 | 11.7 | 1.05 | 88.6 |
| Feeling Down | 612 | 20.8 | 3.88 | 11 | 34.1 |
| Feeling Down Hispanic | 593 | 25.4 | 11.4 | 2.13 | 92.8 |
| Feeling Down Black | 503 | 24.3 | 11.1 | 2.12 | 77.5 |
| Panel G - Macro Variables | | | | | |
| County unemp. rate | 4,163 | 10.44 | 4.01 | 2.8 | 34.4 |
| County HPA | 4,163 | 4.56 | 2.88 | -8.37 | 15.64 |
| State DPI change | 255 | 4.58 | 3.28 | 0.51 | 12.41 |

Notes: This table reports the summary statistics of the variables used in the paper. Panel A reports summary statistics for the eviction filing and state and county eviction moratoria, implemented in the US as a response to the COVID-19 pandemic. Panel B reports the Federal Reserve Y-14 Regulatory Report variables, including credit card spending, payment, and credit score. These variables are winsorized at the 1st and 99th percentiles. Panel C reports the change in various categories of consumer spending relative to January 2020, seasonally adjusted credit/debit card spending relative to January 4-31 2020, as was documented at Opportunity Insight (Chetty et al. (2020)). Panel D and E report from the Census Pulse Survey measures of food insecurity and mental health. Panel F reports Google search query variables, and finally Panel G reports macroeconomic variables. See Appendix Table A.1 for variable definitions. Data sources include: The Eviction Lab at Princeton University, the Federal Reserve Y-14M, the Opportunity Insight Economic Tracker, the Census Pulse Survey, and Google.

Table 2 Effects of State-level Eviction Moratoria on Credit Card Utilization

| | Zip Code by Month Panel | | | | | |
|-------------------------|-------------------------|-----------|----------------|---------|--------------|----------|
| | Spending Change | | Payment Change | | Score Change | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| State Evic. Mor. | 1.867* | 1.458 | 0.249 | -0.610 | -0.131 | -0.216 |
| | (0.988) | (1.036) | (1.353) | (1.440) | (0.170) | (0.176) |
| State Evic. Mor.×Target | | 1.356** | | 1.199* | | 0.341*** |
| | | (0.583) | | (0.707) | | (0.116) |
| County unemp. rate | -0.401*** | -0.459*** | -0.276 | -0.328* | -0.016 | -0.031 |
| | (0.136) | (0.131) | (0.186) | (0.173) | (0.035) | (0.034) |
| County HPA 1Q lag | 0.006 | -0.006 | -0.181 | -0.191 | 0.017 | 0.013 |
| | (0.110) | (0.108) | (0.134) | (0.137) | (0.029) | (0.029) |
| Spending change 1M lag | | | 0.162** | 0.162** | -0.001 | -0.001 |
| | | | (0.060) | (0.060) | (0.002) | (0.002) |
| Payment change | | | | | 0.004*** | 0.004*** |
| | | | | | (0.001) | (0.001) |
| Constant | -10.259*** | -9.527*** | 3.183 | 3.828 | 3.444*** | 3.631*** |
| | (1.523) | (1.482) | (2.351) | (2.298) | (0.442) | (0.436) |
| Dep Var Mean | -13.00 | -13.00 | -3.02 | -3.02 | 3.21 | 3.21 |
| Zip Code FE | X | X | X | X | X | X |
| Month FE | X | X | X | X | X | X |
| N | 20,996 | 20,996 | 20,650 | 20,650 | 16,477 | 16,477 |
| R2 | 0.5788 | 0.5790 | 0.4887 | 0.4888 | 0.8457 | 0.8459 |

Notes: This table presents our estimates of the impact of state-level eviction moratorium on consumer credit card spending, payment and credit score based on zip code by month panel data of YoY changes of the outcome variables. Our focus variable here is an indicator of whether the state in which the zip code is located had an eviction moratorium in place during a particular month. For each state, in the spending and payment regression, we lag the eviction moratorium indicators by two weeks, so we end up with spending and payment data from April to August to reflect the impact of eviction moratorium between late March and early August. For the credit score regressions, we lag the eviction moratorium indicators by two months so the credit score data are from May to September to reflect the impact of eviction moratorium from March to July. To derive a clean identification of the effect of state eviction moratorium, we comprise the sample to include only those states (state-week) where no county-level eviction moratorium was in place. We also exclude zip codes with fewer than 100 credit card accounts in our data as well as those outside of MSAs to minimize outlier impact. About 4,000 zip codes remain in these regressions. Data sources include: The Federal Reserve Y14M, BLS, BEA, and the Census. Robust standard errors in parentheses with error terms clustered at the state-level; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 3 Effects of State-Level Eviction Moratoria on Consumption by Category

| | Food Service Spending | Merchandise Stores | Grocery Spending | Health Care | Transportation | Retail with Grocery | Retail No Grocery | Durable | Non Durable |
|------------------|-----------------------|-----------------------|----------------------|-------------------|----------------------|----------------------|----------------------|----------------------|-------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) |
| State Evic. Mor. | 0.991* (0.530) | 0.860* (0.522) | 0.917* (0.526) | 1.632 (2.026) | -0.241 (0.527) | 0.992* (0.590) | 1.382* (0.712) | -0.663 (1.484) | 1.373* (0.712) |
| Unemp. rate IV | -0.067 (0.062) | -0.338 (0.418) | -0.356 (0.220) | -0.103 (0.187) | -0.055 (0.061) | -0.167 (0.115) | -0.517 (0.398) | -0.081 (0.481) | -0.018 (0.062) |
| HPA | 0.002 (0.537) | 0.161 (0.260) | 0.812 (0.611) | 0.405 (0.248) | 0.647 (0.640) | 0.363 (0.531) | 0.916 (0.638) | 0.269 (0.658) | 0.346 (0.717) |
| Constant | -9.570*** (0.678) | -11.215*** (2.499) | 11.887*** (0.722) | 1.007 (0.852) | -3.206*** (0.849) | -7.640*** (0.508) | 35.822*** (6.112) | -7.640*** (0.656) | 3.235 (2.525) |
| County FE | X | X | X | X | X | X | X | X | X |
| Week FE | X | X | X | X | X | X | X | X | X |
| N | 1,122 | 1,122 | 1,122 | 1,122 | 1,122 | 1,122 | 1,122 | 1,122 | 1,122 |
| R2 | 0.849 | 0.901 | 0.873 | 0.606 | 0.756 | 0.966 | 0.886 | 0.756 | 0.606 |

Notes: This table presents our estimates of the impact of state-level eviction moratoria on state spending by categories, relative to its level in January 2020, seasonally adjust; relative to 2019, e.g., the change in card spending in the second week in April is calculated as ((Spending for April 8 through April 14 2020) - (Spending for April 8 through April 14 2019)) - ((Spending for January 4 through January 31 2020) - (Spending for January 4 - January 31 2019)). Nondurable goods include wholesale trade, agriculture, forestry and hunting, general merchandise, apparel and accessories, health and personal care stores, and grocery stores. We follow Chetty et al. (2020) definition of durable goods as the following groups: motor vehicles, sporting and hobby goods, home improvement centers, consumer electronics, and telecommunications equipment. Data Sources include: Eviction Lab, and Opportunity Insight database compiled by Chetty et al. (2020). Robust standard errors in parentheses with error terms clustered at the state-level; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 4 Effects of State-level Rental Eviction Moratoria on Food Insecurity

| Panel A - Census Pulse Survey | | | | |
|--------------------------------------|----------------------|----------------------|----------------------|----------------------|
| | Insecurity All | Insecurity Black | Insecurity Hispanic | Food Banks |
| | (1) | (2) | (3) | (4) |
| State Evic. Mor. | -1.906 (2.712) | -1.958* (1.053) | 1.581 (2.712) | -2.227 (2.655) |
| County unemp. rate IV | 0.001 (0.040) | 0.114 (0.186) | 0.013 (0.021) | -0.003 (0.040) |
| Constant | 1.160*** (0.245) | 1.277*** (0.233) | 1.213*** (0.231) | 1.218*** (0.218) |
| County FE | X | X | X | X |
| Week FE | X | X | X | X |
| N | 612 | 612 | 612 | 612 |
| R2 | 0.112 | 0.109 | 0.112 | 0.114 |
| Panel B - Google Trends | | | | |
| | Food Stamps | Food Assistance | Food Banks Near Me | Help Food |
| | (1) | (2) | (3) | (4) |
| State Evic. Mor. | -3.401* (1.789) | -2.723 (2.790) | -5.124* (2.697) | -1.819 (2.457) |
| County unemp. rate IV | 0.127 (0.276) | 0.109 (0.426) | -0.093 (0.401) | -0.326 (0.351) |
| Constant | 68.904*** (4.256) | 15.213*** (3.843) | 36.413*** (3.724) | 38.137*** (3.469) |
| County FE | X | X | X | X |
| Week FE | X | X | X | X |
| N | 1,122 | 1,122 | 1,122 | 1,122 |
| R2 | 0.301 | 0.022 | 0.090 | 0.023 |

Notes: This table reports the results from regressions of state eviction moratoria on food insecurity. In panel A, We define "food insecurity" as the percentage of people that declared that sometimes or often they don't have enough food to eat (in the past 7 days). Columns 1 reports results on overall food insecurity and columns 2 and 3 report results on food insecurity among Hispanic and Black, respectively. Columns 4 reports results on the percentage of people that use food pantry or food bank as provider of free groceries or free meal, in the last 7 days. The data is from the Census Pulse survey from 4/23/2020 to 7/9/2020. In panel B, we use Google data to collect sensitive information directly from individuals seeking assistance via internet search on food insecurity. While these and related searches are derived from all households, a universe that includes both owners and renters, the bulk of such searches likely emanate from lower-income household, which is correlated with renters. We infer that when a user seeks help via a Google search. Data sources include: Eviction Lab, Google Trends, and Census Pulse Survey. Robust standard errors in parentheses with error terms clustered at the state-level; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table 5 Effects of State-level Eviction Moratoria on Mental Health

| | (1) | (2) | (3) | (4) | (5) | (6) | (10) | (11) | (12) |
|-----------------------|----------------------|--------------------------------|-----------------------------|--------------------------|------------------------------|---------------------------|----------------------|-----------------------------|--------------------------|
| Feeling Anxious | | Feeling Anxious Hispanic | Feeling Anxious Black | Cant Stop Worrying | Cant Worrying Hispanic | Cant Worrying Black | Feeling Down | Feeling Down Hispanic | Feeling Down Black |
| State Evic. Mor. | -2.979 (2.601) | -1.395 (2.785) | -1.866*** (0.577) | -0.983* (0.578) | -1.330 (2.310) | -0.985 (2.451) | -0.725 (2.372) | -2.191 (2.645) | -1.627*** (0.576) |
| County unemp. rate IV | 0.027 (0.060) | 0.149 (0.271) | 0.069 (0.057) | -0.209 (0.258) | 0.109 (0.318) | 0.068 (0.291) | -0.001* (0.001) | 0.001 (0.003) | -0.002 (0.003) |
| Constant | 31.307*** (1.215) | 39.455*** (4.896) | 34.329*** (5.508) | 23.899*** (1.167) | 24.725*** (4.803) | 26.197*** (5.183) | 19.513*** (1.146) | 21.700*** (4.890) | 23.865*** (5.119) |
| County FE | X | X | X | X | X | X | X | X | X |
| Week FE | X | X | X | X | X | X | X | X | X |
| N | 612 | 612 | 612 | 612 | 612 | 612 | 612 | 612 | 612 |
| R2 | 0.327 | -0.037 | -0.116 | 0.360 | -0.053 | -0.096 | 0.265 | -0.077 | -0.105 |

Notes: This table reports the results from regressions of eviction moratoria on four different mental health disorders, taken from the Census Pulse Survey. The four mental health outcome terms include: feeling anxious, can't stop worrying, and feeling down. For each of the three indicators, we define the percentage of people who replied that they experience this feeling more than half the days or nearly everyday over the last seven days. Data sources include: Eviction Lab and Census Pulse Survey. Robust standard errors in parentheses with error terms clustered at the state-level; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Appendix

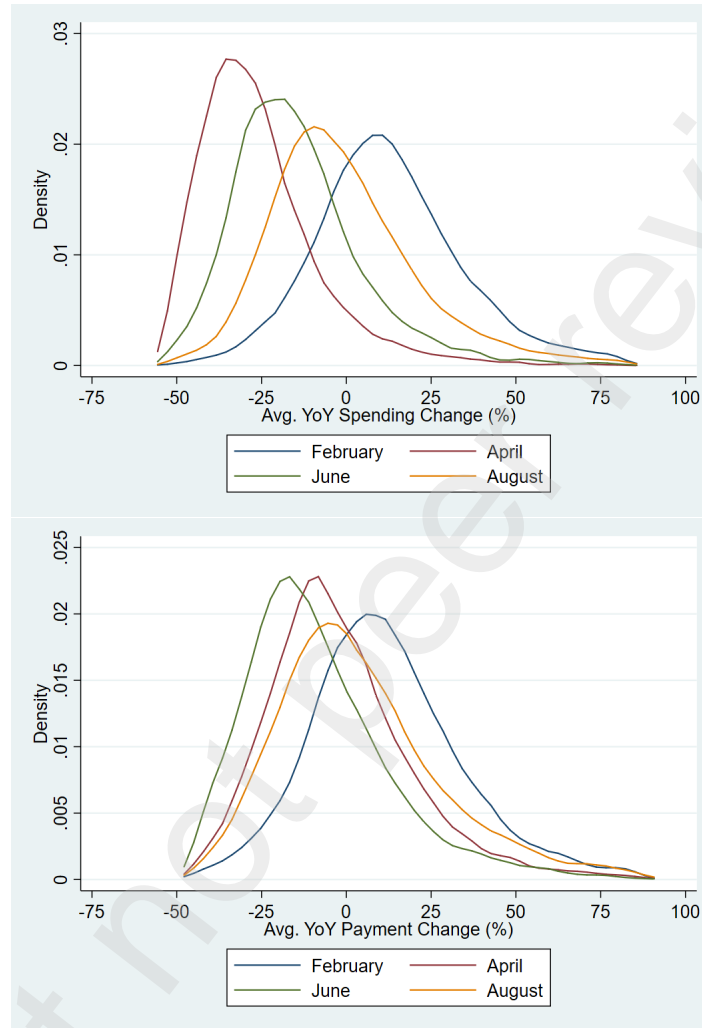


Figure A.1. Distribution of Zip Code Credit Card Spending/Payment Changes

Notes: These figures describe the kernel density of year-over-year changes in zip code-level credit card spending and payment. Panel A shows the averages of a national sample of zip codes and Panel B shows the averages by state for a selected number of states. We exclude zip codes with fewer than 100 credit card accounts in our data as well as those outside of MSAs to minimize outlier impact. Data source is the Federal Reserve Y-14M.

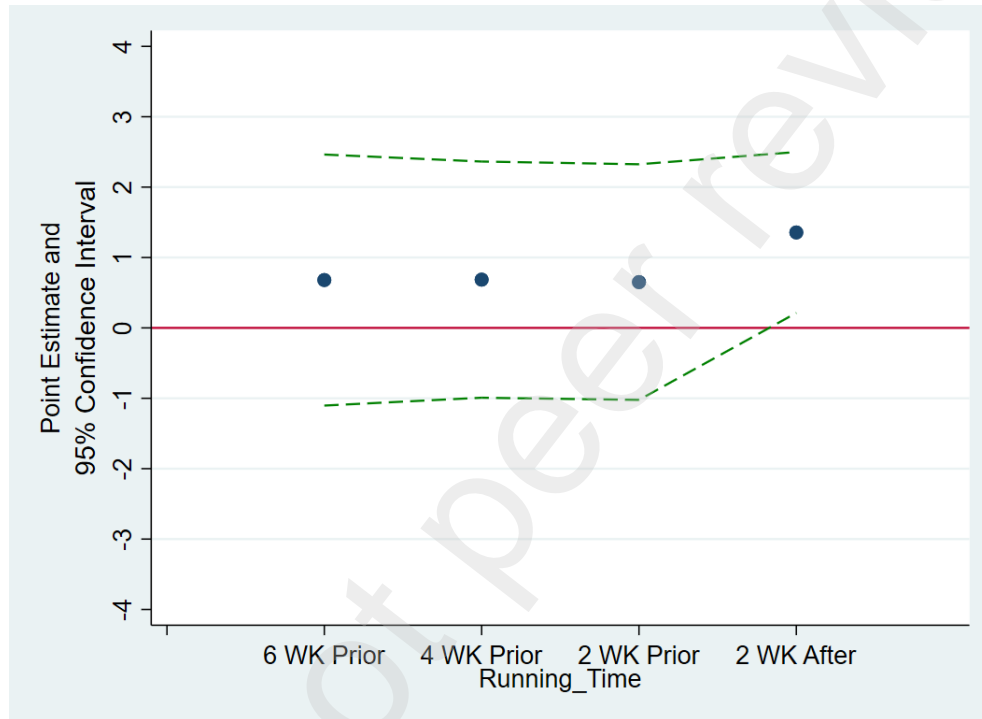


Figure A.2. Test of Parallel Trend for Credit Card Spending

Notes: This figure plots the point estimates and confidence intervals of the focus variable "State EvicMor×Target" in the regression in Table 2 Column 2 when we shift the "event" dates as indicated on the X-axis in the chart. See Table 2 for more notes. Data sources include: The Federal Reserve Y14M, BLS, BEA, and the Census.

Table A.1 Description of the Variables

| | |
|--|--|
| Panel A - Eviction Moratoria from Eviction Lab | |
| County Eviction Filings | Number of eviction cases being filed, by counties |
| State Eviction Moratoria | Dummy for whether the state implemented eviction moratorium during a particular month/week |
| County Eviction Moratoria | Dummy for whether the county implemented eviction moratorium during a particular month/week |
| Panel B - Federal Reserve Y-14M: Credit Cards | |
| Number of credit card accounts | Number of credit card account in the Y14M random sample in each zip code |
| Spending change | YoY change in total credit card spending in a particular zip code and month (%) |
| Payment change | YoY change in total credit card payment in a particular zip code and month (%) |
| Score change | YoY change in average credit score in a particular zip code and month |
| Panel C - Opportunity Insight Database | |
| County Spending | Seasonally adjusted county credit/debit card spending, in annual terms |
| State food service spending | Seasonally adjusted spending in accommodation and food service, in annual terms |
| State merchandise stores | Seasonally adjusted spending in general merchandise stores, apparel and accessories |
| State grocery spending | Seasonally adjusted spending grocery and food store, in annual terms |
| State health care | Seasonally adjusted spending in health care and social assistance, in annual terms |
| State transportation | Seasonally adjusted spending in transportation and warehousing, in annual terms |
| retail with grocery | Seasonally adjusted spending in retail with grocery, in annual terms |
| retail no grocery | Seasonally adjusted spending in retail with no grocery, in annual terms |
| durable | Spending in transportation and warehousing, and in arts, entertainment, and recreation |
| non durable | Spending in health care, grocery and food store, merchandise stores, and food service |
| Panel D - Census Pulse Survey: Food Insecurity | |
| food insecurity | % of households that answer that in the last 7 days they sometimes or often not have enough food to eat, from 4/23/2020 to 7/9/2020 for a duration of 12 weeks |
| food insecurity Hispanic | Food insecurity for Hispanic or Latino |
| food insecurity Black | Food insecurity for Black alone, not Hispanic |
| food banks | % of households that used, in the last 7 days, food pantry or food bank as provider of free groceries or free meal |

Description of the Variables - Cont.

| | |
|--|---|
| Panel E - Census Pulse Survey: Mental Health | |
| Feeling Anxious | Frequency of feeling nervous, anxious, or on edge for more than half the days or nearly everyday as a % of total households |
| Feeling Anxious Hispanic | Feeling anxious for Hispanic or Latino |
| Feeling Anxious Black | Feeling anxious for Black |
| Cant Stop Worrying | Frequency of not being able to stop or control worrying for more than half the days or nearly everyday as a % of total households |
| Cant Stop Worrying Hispanic | Cant Stop Worrying for Hispanic or Latino |
| Cant Stop Worrying Black | Cant Stop Worrying for Black |
| Feeling Down | Frequency of feeling down, depressed, or hopeless for more than half the days or nearly everyday as a % of total households |
| Feeling Down Hispanic | Feeling Down for Hispanic or Latino |
| Feeling Down Black | Feeling Down for Black |
| Panel F - Google Search Query | |
| Food Stamps | Search Volume for "food stamps" |
| Food Assistance | Search Volume for "Food Assistance" |
| Help Food | Search Volume for "Help Food" |
| Panel G - Macro Variables | |
| County unemp. rate | County unemployment rate in a particular month |
| County HPA | YoY change in county house price index |
| State DPI change | YoY change in state real disposable income |

Notes: This table explains the meaning of the variables. Data source include: The Eviction Lab at Princeton University, the Federal Reserve Y-14M, the Opportunity Insight Economic Tracker, and the Census Pulse Survey.

Table A.2

Eviction Filings Regression Results

| | County Eviction Filing | | | |
|--------------------------|-------------------------|------------------------|------------------------|-----------------------|
| | (1) | (2) | (3) | (4) |
| State Evic. Mor. | -129.283*** (26.921) | -17.560 (43.329) | | |
| State Evic. Mor.×Target | | -85.737* (48.839) | | |
| County Evic. Mor. | | | -80.383*** (30.160) | -32.265 (46.111) |
| County Evic. Mor.×Target | | | | -92.332 (70.688) |
| County unemp. rate IV | 3.656 (6.442) | 1.590 (6.420) | 4.093 (16.947) | 3.175 (18.387) |
| County HPA 1Q lag | -0.808 (7.300) | -3.332 (7.308) | -1.975 (16.889) | -0.348 (19.402) |
| Constant | 268.206*** (70.386) | 232.096*** (75.209) | 87.868 (96.416) | -451.628 (300.133) |
| County FE | X | X | X | X |
| Week FE | X | X | | |
| MSA×Week FE | | | X | X |
| N | 261 | 261 | 261 | 261 |
| R2 | 0.317 | 0.326 | 0.325 | 0.395 |

Notes: This table reports the results from regressions of state eviction moratoria on eviction filing. We use data from the Eviction Lab, that built the Eviction Tracking System (ETS), a unique dataset that track eviction filings as they happen. The dataset includes currently 27 different cities in the US. Columns 1 and 2 report results on the effect of a state eviction moratoria, and columns 3 and 4 report results on the effect of a county eviction moratoria, controlling for county-level one-quarter lagged unemployment rate and one-quarter lagged house price appreciation (HPA), and county and week fixed effects. Data source is the Eviction Lab at Princeton University. Robust standard errors in parentheses with error terms clustered at the state- or county-level, depending on the focus variable; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.3 Effects of County-level Eviction Moratoria on Credit Card Utilization

| | Zip Code by Month Panel | | | | | |
|--------------------------|-------------------------|-----------------------|---------------------|---------------------|---------------------|---------------------|
| | Spending Change | | Payment Change | | Score Change | |
| | (1) | (2) | (3) | (4) | (5) | (6) |
| County Evic. Mor. | 0.043 (0.553) | -0.135 (0.651) | -1.199 (1.259) | -1.347 (1.294) | -0.304 (0.188) | -0.344 (0.226) |
| County Evic. Mor.×Target | | 0.559 (0.786) | | 0.246 (1.471) | | 0.136 (0.257) |
| County unemp. rate IV | -0.053* (0.031) | -0.056* (0.031) | -0.062* (0.037) | -0.062 (0.038) | -0.011** (0.005) | -0.011** (0.005) |
| County HPA 1Q lag | 0.022 (0.221) | 0.038 (0.223) | -0.486** (0.245) | -0.486* (0.246) | -0.087* (0.050) | -0.084* (0.049) |
| Spending change 1M lag | | | 0.002 (0.002) | 0.002 (0.002) | -0.001 (0.002) | -0.001 (0.002) |
| Payment change | | | | | 0.008*** (0.002) | 0.008*** (0.002) |
| Constant | -16.749*** (0.979) | -16.802*** (0.976) | -2.426** (1.090) | -2.424** (1.084) | 4.081*** (0.245) | 4.067*** (0.239) |
| Dep Var Mean | -17.12 | -17.12 | -6.11 | -6.11 | 3.40 | 3.40 |
| Zip Code FE | X | X | X | X | X | X |
| MSA×Month FE | X | X | X | X | X | X |
| N | 14,234 | 14,234 | 14,012 | 14,012 | 11,383 | 11,383 |
| R2 | 0.5986 | 0.5986 | 0.5311 | 0.5311 | 0.8505 | 0.8505 |

Notes: This table presents our estimates of the incremental impact of county-level eviction moratorium on consumer credit card spending, payment and credit score based on zip code by month panel data of YoY changes of the outcome variables. Our focus variable here is an indicator of whether the county in which the zip code is located had an eviction moratorium in place during a particular month. For each state, in the spending and payment regression, we lag the eviction moratorium indicators by two weeks, so we end up with spending and payment data from April to August to reflect the impact of eviction moratorium between late March and early August. For the credit score regressions, we lag the eviction moratorium indicators by two months so the credit score data are from May to September to reflect the impact of eviction moratorium from March to July. For the identification of the incremental effect of county-level eviction moratorium, we include in these regressions zip codes where there were both state- and county-level eviction moratoria. The impact of state-level eviction moratorium is absorbed by the MSA×Month fixed effects. We also exclude zip codes with fewer than 100 credit card accounts in our data as well as those outside of MSAs to minimize outlier impact. About 4,000 zip codes remain in these regressions. Data sources include: The Federal Reserve Y14M, BLS, BEA, and the Census. Robust standard errors in parentheses with error terms clustered at the county-level; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

Table A.4 Effects of Eviction Moratoria on Consumer Spending

| | County by Week Panel | | | |
|--------------------------|----------------------|----------------------|----------------------|----------------------|
| | (1) | (2) | (3) | (4) |
| State Evic. Mor. | 1.178*** (0.425) | 1.167 (0.932) | | |
| State Evic. Mor.×Target | | 1.673* (0.918) | | |
| County Evic. Mor. | | | 0.214 (0.574) | 0.066 (0.897) |
| County Evic. Mor.×Target | | | | 0.172 (0.447) |
| County unemp. rate IV | -0.049 (0.056) | -0.034 (0.059) | -0.014 (0.058) | -0.029 (0.060) |
| County HPA 1Q lag | 0.021 (0.105) | 0.049 (0.040) | 0.057 (0.040) | 0.075* (0.041) |
| Constant | -3.990*** (0.676) | -3.199*** (0.339) | -4.794*** (0.413) | -2.318*** (0.410) |
| County FE | X | X | X | X |
| Week FE | X | X | | |
| MSA×Week FE | | | X | X |
| N | 5,010 | 5,010 | 4,527 | 4,527 |
| R2 | 0.530 | 0.532 | 0.417 | 0.424 |

Notes: This table presents our estimates of the impact of state-level and county-level eviction moratorium on county spending. The dependent variable is year-over-year changes in spending, benchmarked to pre-pandemic levels (see, [Chetty et al. \(2020\)](#) for more details). In column 1, we show the baseline model results for the Opportunity Insights spending term controlling for county-level one-quarter lagged unemployment rate and one-quarter lagged house price appreciation (HPA), and county and week fixed effects. Our focus variable here is an indicator of whether the state in which the county is located had an eviction moratorium in place during a particular week. For each state, we move the implementation dates by two weeks, so that the focus variable is lagged by two weeks. To derive a clean identification of the effect of state eviction moratorium, we comprise the sample to include only those states (state-week) where no county-level eviction moratorium was in place. In column 2, we focus on the target group that is defined as those counties in the upper quartile of renter share with high levels of unemployment in April 2020, using difference-in-differences regression. In columns 3 and 4 our focus variable is an indicator of whether the county had an eviction moratorium in place during a particular week, in states that had eviction moratorium in place. We move the implementation dates by two weeks, so that the focus variable is lagged by two weeks and we add an interaction term between MSAs and Week fixed effect. Data Sources include: Eviction Lab, and Opportunity Insight database compiled by [Chetty et al. \(2020\)](#). Robust standard errors in parentheses with error terms clustered at the state- or county-level, depending on the focus variable; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.