The Effect of Unemployment Insurance on Rental Housing Evictions[*]

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Abstract

In a typical year, US landlords file over 2 million evictions, 900,000 of which result in the removal of an individual or family from their home (Desmond et al., 2018). The majority of evictions are filed for nonpayment of rent, which can result from employment instability or job loss. This paper explores the potential of unemployment insurance (UI) to serve as an eviction prevention program by mitigating the effect of unemployment on eviction. Exploiting variation in UI benefits across states and over time, I estimate the effect of state-level UI benefits on county-level eviction filing rates. I find that when UI benefits are low, an increase in county-level unemployment leads to a decrease in eviction filing rates. By contrast, when UI benefits are high, an increase in unemployment leads to an increase in eviction filings. Albeit counterintuitive, these results are consistent with recent literature on landlord-tenant interactions, particularly serial evictions. My results suggest that a clear understanding of the eviction process is necessary to creating effective eviction prevention policies.

Keywords: Unemployment, unemployment insurance, eviction, eviction prevention (JEL R00)

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1. Introduction

In a typical year, US landlords file over 2 million evictions, 900,000 of which result in the removal of an individual or family from their home (Desmond et al., 2018). Eviction is associated with numerous negative consequences including economic hardship (Humphries, et al., 2018, Kahlmeter et al., 2018), residential instability (Desmond & Shollenberger, 2015; Collinson & Reed, 2019a), homelessness (Crane & Warner, 2000; Collinson & Reed, 2019a), disrupted educational attainment (Collinson & Reed, 2019b) and physical and mental health issues (Desmond & Kimbro, 2015; Rojas & Stenberg, 2016; Vasquez-Vera, 2017; Collinson & Reed, 2019a). These consequences carry costs not only to the individuals that experience them directly but also to the communities in which they live. Eviction can place direct and indirect fiscal costs on governments, taxpayers, and social-welfare groups as they pay for sidewalk cleanup, enforcement of evictions, homelessness, and increases in individuals requiring aid (Lindsey, 2010). During the current pandemic, eviction could lead to further spread of the coronavirus, which endangers public health (CDC, 2020a).

A key motivation for policy intervention is to avoid the additional unseen costs of eviction borne by renters, landlords, taxpayers, and those in the surrounding community. A program that has the potential to aid renters in the ongoing eviction crisis is unemployment insurance (UI). Most evictions are filed for nonpayment of rent, which can result from employment instability or job loss (Sills et al., 2018). As a result, UI has the potential to serve as an eviction prevention program by mitigating the effect of unemployment on eviction.

In this paper, I explore the effect of UI benefits on eviction filings. Using data from nearly all US counties from 2002-2016, I estimate the effect of state-level UI benefits on county-level eviction filing rates. My identification strategy rests on the exogeneity of variation in UI

benefits across states and over time. Despite what intuition may indicate, I find that when UI benefits are low, an increase in the county-level unemployment rate decreases eviction filings. By contrast, when UI benefits are high, an increase in the unemployment rate increases eviction filings. These results are robust to changes in the specification and although perhaps counterintuitive, are consistent with the literature on landlord-tenant interactions, particularly serial evictions.

This paper contributes to the growing body of literature on eviction in several ways. First, it focuses on eviction prevention, which has yet to be thoroughly addressed in the literature. Second, it highlights the importance of studying eviction filings, which have been focused on less in the literature than eviction judgments. Lastly, it addresses the importance of understanding landlord-tenant relationships, particularly from the landlord's perspective.

Overall, my results suggest that the effectiveness of eviction prevention programs lies in creating them with a clear understanding of landlord-tenant interactions. If we want to create effective eviction prevention policies, we need to understand the mechanisms through which evictions take place. These results provide useful information for policymakers as they attempt to address the ongoing eviction crisis.

2. Background

2.1 Eviction

Eviction is an action taken by a landlord to remove a tenant from a rental property. In the United States, eviction is supposed to follow a legal process. However, previous research suggests that *informal evictions*, those where a landlord removes a tenant from a rental property without following the legal process, are prevalent (Desmond, 2012; Desmond & Shollenberger, 2015). Due to data limitations, the prevalence of informal evictions across the United States is

unknown. As a result, like much of the existing literature, this paper focuses exclusively on *formal evictions*, those that follow the legal process. The formal eviction process is guided by landlord-tenant laws and overseen by courts. Each state maintains its own laws and courts, which may differ from others. However, the process is generally the same and contains the following three steps: (1) file, (2) trial, and (3) judgment.

The formal eviction process begins when the landlord files for eviction. An *eviction filing* is the opening of an eviction case by the landlord. A landlord can file for eviction for many reasons. The most common reasons across states are a tenant failing to pay rent, failing to maintain aspects of the lease, or remaining in the property after the lease ends (LexisNexis, 2017). After the eviction case is opened, the tenant is served a notice giving them a date to appear in court for a trial. At trial, both landlords and tenants are given the opportunity to present evidence in their favor. Previous research suggests that most judgments are awarded in the landlord's favor (Sills et al., 2017; UNCC Urban Institute, 2018). An *eviction judgment* is a decision in favor of the landlord, which results in possession of the property returning to the landlord and the tenant being removed from their home. However, not all eviction filings turn into eviction judgments. For example, the tenant may leave prior to the trial, or the landlord and the tenant may come to an agreement (UNCC Urban Institute, 2017). In both cases, an eviction judgment is avoided.

Avoiding an eviction judgment is not always good news for a tenant. If the tenant remains in the home but fails to pay rent or maintain another aspect of the lease a second time, the landlord can file again. *Serial filings*, those that occur repeatedly for the same tenant in the same rental unit, are common. Nationally, over a third of all filings in 2014 were attributed to households who were filed against more than once (Leung et al., 2019). Among DC households

with an eviction filing in 2018, nearly 60 percent had at least one other filing against them at some other point between 2014 and 2018 (McCabe and Rosen, 2020).

Although much of the prior literature focuses on eviction judgments, this paper follows the recent trend in the literature to focus on eviction filings. This new focus on eviction filings is important. First, not all filings lead to judgments, which means more households are affected by filings (Garboden and Rosen, 2019). The Eviction Lab, the first national database on eviction, records eviction filings and eviction judgements from 2000 to 2016 (Desmond et al., 2018). Columns 2 and 3 in Table 1 present the number of eviction filings and eviction judgments, respectively. In column 4, I calculate the percentage of eviction filings that result in an eviction judgment. I find that less than less than half of all filings result in a judgment. A study in Washington, DC found that in 2018, only about 5.5 percent of filings resulted in a judgment (McCabe and Rosen, 2020). If we ignore eviction filings, we are ignoring the largest part of the eviction process.

Second, the threat of eviction embodied by filings has been tied to its own set of negative consequences. The threat of eviction has been shown to cause stress and financial strain for families (Vasquez-Vera, 2016; Sills et al., 2018; Immergluck et al., 2019). Additionally, it can lead some tenants to offer up favors, such as labor or sex, to work off debt (Garboden and Rosen, 2019). Tenants can also be less likely to seek help in situations of domestic violence or housing code violations (Garboden and Rosen, 2019). By focusing only on eviction judgments, the prior literature may not have captured the full impact of the eviction process on those that experience it (Garboden and Rosen, 2019).

Third, by preventing eviction filings, we can prevent eviction judgments. Existing prevention methods, like emergency rental assistance or access to legal aid, focus on preventing

judgments, not filings. These services are often not available until a tenant receives an eviction filing. Although these programs have been successful in avoiding some eviction judgments, they are not always successful at keeping tenants in their homes. Sometimes the removal of a tenant cannot be avoided, so these services are negotiating better terms for the removal like giving the tenant more time to move out (LANC, 2017). By focusing on the front end of the eviction process, we may be better able to address eviction judgments.

To prevent eviction filings, we need to be considering the entire eviction process. Most eviction cases are filed for nonpayment of rent (Sills et al., 2018; Urban Institute at UNCC, 2018; McCabe and Rosen, 2020). If landlords wish to ensure that they receive their rent, they must file for eviction. Additionally, filing for eviction often allows landlords the opportunity to charge the tenant with late fees, which has been shown to increase the tenant's costs by as much as 20% (Leung, et al., 2020). Further, if the tenant does indeed continue to miss their rental payments, filing for eviction is the only way for landlords to legally ensure that they can remove the tenant from their property. These outcomes suggest that eviction prevention that focuses only on the tenant is inherently flawed. Eviction is a process that involves two parties: the landlord and the tenant. There needs to be a concern for the landlords' actions as well, not just the tenant (McCabe and Rosen, 2020).

2.2 Unemployment Insurance

Unemployment insurance is a social insurance program that aims to assist individuals who have lost their jobs while they look for a new one. The program consists of two types of benefits: regular benefits and extended benefits. The regular benefits program is run by the states and overseen by the United States Department of Labor. It is a state-federal partnership where the states have primary control. Regular benefits are available to the unemployed regardless of

economic conditions. During economic downturns, additional programs can be enacted. The states, the federal government, or both can run these extended benefits programs. Extended benefits are only available to the unemployed during poor economic conditions.

2.2.1 Regular Benefits

Regular UI benefits can broadly be characterized by the weekly benefit amount and benefit duration. The weekly benefit amount is how much an individual receives in benefits each week. The benefit duration is the number of weeks an individual can receive benefits. Each state sets its own maximum weekly benefit amount and maximum benefit duration, the highest weekly benefit amount, and the highest number of weeks of benefits an individual can obtain. Although the maximum weekly benefit amount varies greatly across states, the maximum benefit duration is typically 26 weeks. Regular UI benefits tend to replace about half of a workers' lost wages.

Table 2 shows the change in the maximum weekly benefit amount and the maximum benefit duration in each state from 2002 to 2016. The maximum weekly benefit amount varies greatly across states and time with some states reducing their maximum weekly benefit while others have maintained or increased it. For example, North Carolina had a maximum weekly benefit amount of $396 in 2002, but only $350 in 2016, not adjusted for inflation. This increase is equivalent to about a 12 percent decrease in the nominal maximum weekly benefit amount. The opposite extreme, North Dakota, provided a maximum weekly benefit amount of only $290 in 2002, but increased it by about 118 percent by 2016 to provide $633. Unlike maximum benefit amount, there is much less variation in maximum benefit duration. The smallest maximum benefit duration decreased from 26 weeks to 12 weeks from 2002 to 2016 in Florida, while the largest maximum benefit duration remained at 30 weeks in Massachusetts.

If UI benefits are to aid in eviction prevention, it would be through replacement of workers' lost wages. Table 3 depicts the potential impact of UI on renters in each state. Column 1 contains the median renter household income (monthly); column 2, the potential unemployment insurance benefit (monthly); column 3, the median gross rent (monthly), and column 4, the maximum benefit duration (weeks). Column 5 calculates the potential impact of UI on renters through the median gross rent as a percentage of unemployment insurance benefits. Across all 50 states, rent makes up less than 100% of monthly UI benefits. This result indicates that, in all states, monthly UI benefits have the potential to cover monthly rent. However, some states benefits are far more likely to cover rent than others. For example, Arizona's median gross rent takes up 94% of monthly UI benefits, whereas North Dakota's median gross rent takes up only 48% of monthly UI benefits.

Renters who have lost their job may be concerned not just about the amount of benefits they receive, but also the length of time they receive them. Column 6 calculates the potential impact of UI on renters through the maximum months of coverage that maximum benefit duration provides. Most states provide 6 months of coverage. Massachusetts provides the most coverage, nearly 7 months (30 weeks), while Florida provides the least coverage, under 3 months (12 weeks). If UI benefits do not aid in eviction prevention, it may be that UI does not replace enough of workers' lost wages or does not provide a long enough duration of benefits.

2.2.2 Extended Benefits

Extended UI benefits can affect regular UI benefits in amount or duration. The two extended benefit programs that are of interest to this paper are the Emergency Unemployment Compensation (EUC) program and the Extended Benefits (EB) program. Both these programs affected regular UI benefits by extending benefit duration at some point from 2002-2016.

However, length of extensions differed by program and by the level of unemployment in a given state.

The EUC program was enacted in June 2008 and ran thru December 2013. It provided several extensions to the duration of unemployment benefits, which were determined by levels of unemployment in the state. At its peak, the EU program provided four tiers worth of extensions, providing up to 53 additional weeks of benefits for some states. The EB program, which is permanent, was adopted in 1970. This program provides a mandated extension of duration when the state's unemployment rate reaches certain levels. However, states can opt for additional triggers that are considered easier to reach. Prior to the Great Recession only a few states opted into these triggers. Usually, fifty percent of the EB program is paid for by the Federal government and fifty percent by the states, but during and after the Great Recession, from 2008 to 2013, the federal government completely paid for the EB program. As a result, a few states elected to use the optional easier triggers during the period the Federal government completely covered the cost.

Although extended benefits may affect filings, this paper focuses only on the effects of regular UI benefits, because they are consistently available throughout the time period. Additionally, these are the first benefits an individual receives, even when extensions are in effect. My empirical work does control for the presence of extended benefits, but it does not discuss the effect of these benefits in depth. As a robustness check, I do evaluate the impact of UI benefit generosity on eviction filing rates using a measure that incorporates extended benefits.

3. Data

3.1 Data and Variables

3.1.1 Evictions

Accurately measuring eviction is challenging. The literature uses two types of data most often: administrative data or survey data. Both types have their shortcomings. Survey data is limited in that it can undercount the prevalence of rental housing evictions or it can fail to capture a complete picture of housing displacement (Lundberg and Donnelly, 2018; Porton et al., 2020). As a result, many researchers use administrative data. However, administrative data is limited in that it does not capture informal evictions and can contain errors (Lundberg and Donnelly, 2018; Porton et al., 2020). Porton et al (2020) argue that administrative data can overcome its shortcomings by careful cleaning of the dataset.

My data for eviction outcomes comes from the Eviction Lab database, which is the most comprehensive eviction database to date (Desmond et al., 2018). The database contains estimates of eviction filings and eviction judgments from administrative records from 2000 to 2016. These estimates are provided at the block group-, tract-, city-, county-, state-, and national-level. The data have been carefully cleaned, addressing one of the primary concerns about administrative data.

To capture eviction outcomes, I use the county-level *eviction filing rate* from 2002 to 2016. I choose to exclude the 2000 and 2001 data, because more counties have missing data in those years than in the rest of the data. The eviction filing rate is the number of eviction filings in a county (which may include multiple filings against the same household) divided by the number of renter-occupied households in the county multiplied by 100. As a result, the *eviction filing rate* can be interpreted as the number of eviction filings per 100 renter-occupied households.

3.1.2 UI Benefits

Data for state UI policies come from Hsu et al. (2018b) and the US Department of Labor Employment & Training Administration. Hsu et al. (2018b) is the publicly available dataset for

Hsu et al (2018a). The authors collected maximum weekly benefits and maximum benefit duration for each state from the Significant Provisions of State Unemployment Insurance Laws. These documents track the minimum and maximum benefits awarded in each state, as well as the durations and qualifications in each state. I use their data from 2002 to 2010. I complete the dataset by obtaining data for 2011 to 2016, following the same process as Hsu et al. (2018a). I use maximum weekly benefits and maximum benefit duration in each state from the January publication of the Significant Provisions of State UI Laws for 2011 to 2016 (Department of Labor, 2011-2016).

To capture each state's UI policy, I follow Hsu et al. (2018a) by focusing on each state's UI generosity. Like Hsu et al. (2018a), I construct *maximum benefit* from the product of each state's maximum weekly benefit and maximum number of weeks for which benefits are paid (excluding extensions weeks from the EUC and EB programs). *Maximum benefit* captures the generosity of each state's UI policy. It serves as a proxy for the total regular benefits that an unemployment insurance claimant could receive during an unemployment spell (Hsu et al, 2018a). As a sensitivity check, I also consider a number of additional measures of UI generosity to see if the results differ.

For measures of UI extensions, specifically the Extended Benefits (EB) and Extended Unemployment Compensation (EUC) programs, I collect data from the EB and EUC trigger notices provided by the US Department of Labor Employment & Training Administration (https://oui.doleta.gov/unemploy/claims_arch.asp). These trigger notices capture when each state's unemployment rate was high enough to initiate the starting or stopping each of these programs. I collect trigger notices for the last week of December in each year from 2002-2016

for the EB program (the duration available, as the EB program is permanent) and from 2008-2013 for the EUC program (the duration available, as the EUC program was temporary).

I capture extended benefits as a separate control. I construct *extended benefits*, which is the product of each state's maximum weekly benefit and number of extension weeks for which benefits are paid. I calculate the number of extension weeks from the EUC and EB trigger notices from the last week of December in each year. I assume that the maximum number of extension weeks available during this week is the number of extension weeks available during the entire year. I combine the maximum number of extension weeks for each program to yield the total number of extension weeks for which benefits are paid.

3.1.3 Controls

In the empirical work that follows, I include county-level controls. I collect data on county-level household income, gross rent, rent burden, and race from the Eviction Lab. I pull data on county-level unemployment rates from the Bureau of Labor Statistics (BLS) Local Area Unemployment Statistics (LAUS). The BLS LAUS contains unemployment rates for all counties in the United States across time. I use the county-level unemployment rates from 2000 to 2016. The BLS LAUS is the most comprehensive data on unemployment at the county-level making it the best choice for this research. Lastly, I define counties as urban or rural according to the rural using the rural-urban continuum codes from the U.S. Department of Agriculture, Economic Research Service (USDA ERS; 2004,2013).

I also include controls for state-level economic conditions that may affect county-level eviction filing rates. I include a measure of real GDP per capita, which I take from the Bureau of Economic Analysis from 2002-2016; the Housing Price Index (HPI), which I obtain from the Federal Housing Finance Agency; the state-level unemployment rate, which I collect from the

Bureau of Labor Statistics, Local Area Unemployment Statistics; and state annual wages from the Bureau of Labor Statistics, Quarterly Census of Employment and Wages.

3.2 Descriptive Statistics

The final data set used in this paper is an unbalanced county-level panel dataset containing 39,369 observations from 2,924 US counties from 2002-2016. The dataset includes all continental US counties except for DC and Maryland. DC has been excluded because it is not a county or a state making it difficult to include in the analysis. Maryland is excluded because it has a significantly different way of counting its eviction filings, which makes its data difficult to compare to other states.

Means and standard deviations for all variables are presented in Table 4. The first part of the table describes the state-level data, while the second half of the table describes the county-level data. The average maximum regular benefit is $10,650 with a standard deviation of $381. Note that the variation in the maximum benefit is primarily driven by the variation in maximum weekly benefit, as opposed to maximum duration. There is much more variability across states and time in benefit amounts than in the number of weeks those benefits are paid out. Turning to the county-level data, the average eviction filing rate is 3.1 with a standard deviation of 4.78.

4. Descriptive Analysis

If UI benefits prevent eviction filings, it is likely by mitigating a negative effect of unemployment on eviction filings. I begin by exploring the relationship between unemployment rates and eviction filing rates graphically. *Unemployment Rate* is a continuous variable, which is difficult to capture in a simple graphical analysis, so I use it to construct two groups: *Low Unemployment Rate* and *High Unemployment Rate*. For each year of data, I group counties by comparing their unemployment rate to the median unemployment rate. If a county's

Unemployment Rate is less than the median in a given year, the county is considered a *Low Unemployment Rate* county in that year. If a county's *Unemployment Rate* is greater than or equal to the median in a given year, the county is considered a *High Unemployment Rate* county in that year. In Figure 1, I plot the average eviction filing rate over time by *Unemployment Rate* groups. It shows that the average eviction filing rate among counties with high unemployment rates tends to be higher than the average eviction filing rate among counties with low unemployment rates. In most years prior to 2007, the means are not statistically different. In 2007, the means begin to diverge and by 2008, the means are statistically different. Although the gap begins to close around 2014, the means remain statistically different between the two groups through 2016. This suggests that the relationship between unemployment and eviction filings may differ over time.

Next, I explore the relationship between UI benefits and eviction filing rates graphically. Like *Unemployment Rate*, *Max Benefit* is a continuous variable, so I use it to construct two groups: *Low Max Benefit* and *High Max Benefit*. Again, I group counties by comparing their UI benefits to the median UI benefit. If a county's *Max Benefit* is less than the median in a given year, the county is considered a *Low Max Benefit* county in that year. If a county's Max Benefit is greater than or equal to the median in a given year, the county is considered a *High Max Benefit* county in that year. In Figure 2, I plot the average eviction filing rate over time by *Max Benefit* groups. It shows that the average eviction filing rate among counties with low benefits tends to be higher than the average eviction filing rate among counties with high benefits. In most years prior to 2007, the means are not statistically different. In 2007, the means begin to diverge and by 2008, the means are statistically different. They remain so through 2016. Figure 2 suggests there may not have been an effect of regular UI benefits on eviction filing rates prior to

the Great Recession, but higher UI benefits may have helped eviction filing rates remain low during and after the Great Recession.

Lastly, I combine the two previous figures to explore the potential mitigating effect of UI benefits on unemployment rates. When benefits are low, a change from low to high unemployment may increase the average eviction filing rate, because low benefits can do little to mitigate the potential negative effect of unemployment. However, when benefits are high, a change from low to high unemployment may not increase the average eviction filing rate, because high benefits mitigate the negative effect of unemployment. In Figure 3, I plot the average eviction filing rate over time by unemployment and UI benefits.

Prior to the Great Recession, the average eviction filing rate across groups is relatively consistent. In 2008, the averages begin to diverge. The low benefit, high unemployment rate group begins to see a significantly higher average eviction filing rate than the other three groups. This pattern remains even after the Great Recession. In 2009, the average eviction filing rate for the other three groups begins to diverge. The high benefit, low unemployment rate group now has a significantly lower average eviction filing rate. Both the low benefit, high unemployment rate group and the high benefit, low unemployment rate group have similar average eviction filing rates, until 2013, when the average for the high benefit, high unemployment rate group becomes significantly smaller.

The graph suggests that UI benefits may be able to mitigate a negative effect of unemployment during and after the Great Recession. When benefits are low, a change from low to high unemployment increases the average eviction filing rate significantly, which suggests that low benefits can do little to mitigate the negative effect of unemployment. However, when benefits are high, a change from low to high unemployment does not always increase the average

eviction filing rate significantly, which suggests that high benefits mitigate the negative effect of unemployment.

5. Methodology

The graphical relationships are revealing, but the simple plots over time do not control for other county or state characteristics. To account for such factors, I turn to regression analysis. In developing my estimation equation, I use Figures 1-3 as a guide. Figures 1 and 2 suggest that I allow for the possibility of different effects of unemployment rates and UI benefit generosity before, during, and after the Great Recession. During the Great Recession unemployment uptake and duration increased (BLS, 2020; Kroft et al., 2016). Additionally, the characteristics of the unemployed changed (Mattingly et al., 2011). Unemployment rates amongst single mothers and those living in urban areas increased significantly (Mattingly et al., 2011). Both groups are especially prone to eviction. Figure 4 suggests that I allow for the possibility of different effects of unemployment rates at different levels of UI benefits. Research shows that the marginal person transitioning into unemployment differs when the unemployment rate is low than when it is high (Ahn and Hamilton, 2020). Taken together, the figures, as well as economic research, suggest the inclusion of interaction terms.

My primary method for answering the question of how state-level UI benefit generosity affects county-level eviction filings rates is the following specification. The main estimating equation takes the following form:

$$\begin{aligned} EFR_{cst} = {} & \beta_0 + \beta_1 Max\ Benefit_{st} + \beta_2 Unemployment\ Rate_{cst} + \beta_3 GR_t + \beta_4 Post\ GR_t \\ & + \beta_5 Max\ Benefit_{st} \times Unemployment\ Rate_{cst} + \beta_6 GR_t \times Max\ Benefit_{st} \\ & + \beta_7 GR_t \times Unemployment\ Rate_{cst} \\ & + \beta_8 GR_t \times Max\ Benefit_{st} \times Unemployment\ Rate_{cst} \\ & + \beta_9 Post\ GR_t \times Max\ Benefit_{st} + \beta_{10} Post\ GR_t \times Unemployment\ Rate_{cst} \\ & + \beta_{11} Post\ GR_t \times Max\ Benefit_{st} \times Unemployment\ Rate_{cst} + \boldsymbol{\gamma X}_{cst} + \boldsymbol{\delta Z}_{st} \\ & + \boldsymbol{\lambda}_s + \varepsilon_{cst} \end{aligned}$$

The dependent variable, *EFR*, is the eviction filing rate for county, *c*, in state, *s*, and year, *t*. The independent variables are *Max Benefit*, the product of the maximum weekly benefit amount and the maximum benefit duration (in weeks) for state, *s*, in year, *t*; *Unemployment Rate*, the unemployment rate for county, *c*, in year, *t*; *GR*, a dummy variable indicating that the year, *t*, is during 2008 or 2009; and *Post GR*, a dummy variable indicating that the year, *t*, is after 2010. **X** is a vector of county characteristics; **Z** is a vector of time-variant state characteristics; **λ** represents a vector of state fixed effects; and ε is the error term. *Max Benefit* and *Unemployment Rate* are demeaned (with respect to the mean for the entire sample) before they are interacted, so β_5 measures the change in the county-level eviction filing rate associated with the average county-level unemployment rate in a state with average UI generosity before the Great Recession. β_8 and β_{11} measure this change during and after the Great Recession, respectively. The vector **X** includes median household earnings, median gross rent, median rent burden, percent African American, percent Hispanic, and a dummy variable equal to 1 if the county is urban and 0 otherwise. The vector **Z** includes the following state-level economic conditions: the state unemployment rate, log of real GDP per capita, home price growth, average wages, and maximum UI benefit extensions. The main results reported in Table 6 are ordinary least squares estimates of the fixed effects model with standard errors adjusted for clustering at the state level.

Determining a causal effect of UI benefit generosity on eviction filing rates relies on the assumption that differences in UI benefit generosity are not correlated with other factors that affect changes in eviction filing rates. This assumption seems plausible as UI benefit generosity is captured at the state-level, while eviction filing rates are captured at the county-level. Eviction filing rates are determined locally, but individual local factors should not influence state-level policy choices.

A concern could be that state legislators change UI generosity in response to economic shocks, which may be determinants of county-level eviction filing rates and could confound my estimates. To address this concern, I follow Hsu et al. (2018) and estimate the correlation of benefit levels with various state macroeconomic variables, conditional on state fixed effects. Unlike Hsu et al. (2018), the results, which are reported in columns 1-4 of Table 5, show evidence of a relation. Individually, I estimate a positive, statistically significant relationship between UI benefits and real GDP per capita, we well as between UI benefits and state wages. When estimating the correlation of benefits levels with all state macroeconomic variables, I find a positive, statistically significant relationship between UI benefits and the state unemployment rate, as well as between UI benefits and real GDP per capita. This difference may be due to differing time periods because my analysis extends to 2016, whereas previous research has stopped around 2010. To account for the resulting endogeneity, I include these variables in my main estimating equation. As a robustness check, I estimate the model with state-by-year fixed effects.

6. Results

I begin by estimating a simple model that only includes *Unemployment Rate*, *Max Benefit*, *GR*, and *Post GR*. In terms of the main estimating equation presented in Section 5, this simple model excludes all interactions terms. In this specification, the coefficient on *Unemployment Rate* measures the average association between unemployment rates and eviction filing rates. As reported in column 1 of Table 6, the estimate is positive. The coefficient on *Max Benefit* measures the average association between maximum benefit generosity and eviction filing rates. As reported in column 1 of Table 6, the estimate is positive and statistically significant. The coefficient of 0.148 suggests that a $1,000 increase in state-level maximum UI

benefit generosity leads to a 0.148 increase in county-level eviction filings per 100 renter-occupied households. The coefficients on *GR* and *Post GR* show that, on average, eviction filing rates increased during and after the Great Recession.

To determine whether there is a mitigating effect of UI benefits on unemployment, I estimate the same simple model with the inclusion of one interaction term, *Unemployment Rate* × *Max Benefit*. These estimates are reported in column 2 of Table 6. Recall that both *Unemployment Rate* and *Max Benefit* are demeaned, so the coefficient on *Unemployment Rate* measures the change in the average county-level eviction filing rate for a change in the unemployment rate at the mean maximum UI benefit generosity. The coefficient on the *Unemployment Rate* × *Max Benefit* interaction is positive and statistically significant. The coefficient of 0.0435 suggests that the marginal effect of *Unemployment Rate* increases by 0.0435 eviction filings per 100 renter-occupied households for every $1,000 increase in maximum UI benefit generosity. This suggests that, instead of mitigating the effect of the unemployment rate, benefits reinforce the effect.

Thus far, I have examined unemployment and benefits to gauge the average effect of benefit generosity on filing rates. However, the graphical analysis in Section 4 suggested that the effect of unemployment on filings, as well as unemployment on filings by benefits, may differ by time period, namely during and after the Great Recession. To assess how the interaction between benefits and unemployment differs across time periods, I interact the *Unemployment Rate* × *Max Benefit* interaction with the period indicator variables. As reported by Column 3 in Table 6, the coefficient on *Max Benefit* remains positive and statistically different from zero. The coefficient on the *Unemployment Rate* × *Max Benefit* interaction is positive and statistically significant. Taken together, the coefficients on *Max Benefit* and *Unemployment Rate* × *Max Benefit* capture

the effect of benefit generosity on eviction filings before the Great Recession.

I find that the interaction between benefits and unemployment differs by time period. The coefficients on the *Great Recession* × *Unemployment Rate* × *Max Benefit* interaction and the *Post Great Recession* × *Unemployment Rate* × *Max Benefit* interaction are both negative and statistically significantly different from zero. These interaction terms suggest that the positive interaction effect is mitigated during and after the Great Recession.

The coefficients on the interaction terms are difficult to interpret. To ease interpretation, in Figure 4, I plot the expected eviction filings per 100 renter-occupied households at different values of benefits and unemployment rates in each time period. Each line captures a different level of unemployment. For ease of interpretation, benefits are measured as weekly benefits for 26 weeks duration. In terms of maximum benefits used in the model $200, $400, and $600 are equivalent to $5,200, $10,400, and $15,600, respectively. The x-axis captures values of unemployment, namely full employment (4%), mean unemployment (6.5%), and high unemployment (10%). All of these are values of unemployment rates observed in my sample. Moving along a given line shows the effect of an increase in unemployment rate on expected eviction filings.

As shown, prior to the Great Recession, at low unemployment, there is a negative effect of increasing unemployment on predicted eviction filings. However, as benefits increase, the effect of unemployment on filings becomes positive. During and after the Great Recession, the overall effects are less extreme. The effect of increasing unemployment on predicted filings remains negative for low benefits during and after the Great Recession. As benefits increase, the effect of unemployment on predicted eviction filings again become positive. However, it is not as strong of relationship as that before the Great Recession.

6.1 Robustness

The results presented in column 3 of Table 6 are robust to a number of changes in specification. The results of these alternative specifications are presented in Tables 7 and 8. In column 1 of Table 7, 1 examine the robustness of the model to the use of real values instead of nominal. Results remain unchanged. In column 2-4, I estimate the model without state-level controls, with county fixed effects, and with state-by-year fixed effects, respectively. Results are consistent with those in the primary specification. The models robustness to state-by-year fixed effects is noteworthy, because it eliminates our earlier concern about economic shocks.

In columns 1-3 of Table 8, I estimate the model using different measures of UI benefit generosity. In column 1, I use maximum weekly benefit, in column 2, maximum duration, and in column 3, average weekly benefit amount paid. These results are relatively consistent with those in the primary specification. All but maximum benefit duration suggest a positive relationship between benefits and filings. All three suggest that the effect is reinforced by unemployment rates and mitigated over time. Finally, in Column 4 of Table 8, I weight the primary model by county population. The main conclusion of a positive relationship between benefits and filings, which is reinforced by unemployment hold. However, in this model, that relationship does not appear to change over time.

7. Discussion

My results show a robust, positive interaction between benefits and unemployment, which decreases slightly during and after the Great Recession. The consistently positive relationship appears counterintuitive. UI benefits are a source of income that could be used to pay rent, so an increase in benefits could make it easier for individuals or families to make their rental payments, especially during times of high unemployment. We would expect, or at least

hope, that an increase in UI benefits would lead to a decrease in eviction filings as the unemployment rate increases. That is, we would expect the interaction term to be negative. Furthermore, the graphical analysis supported this hypothesis. My results suggest the opposite, which warrants further discussion.

First, it is important to understand why the graphical analysis and the empirical results tell different stories. The graphical analysis plotted averages over time. It did not account for other county or state characteristics. Once those characteristics are accounted for, the relationship changed. An important factor that the graphs do not account for is state fixed effects. Because my data is counties that are within states, with a state-level policy, it is important to control for fixed effects. Once these fixed effects are included the relationship changes. See Appendix A for more details.

Table 9 presents the adjusted predictions of county-level eviction filings per 100 renter-occupied households at representative values of benefits and unemployment before, during, and after the Great Recession. I choose the same levels of benefits and unemployment I plotted in Figure 4. All of the controls have been set to their means. The table depicts the consistently positive relationship between benefits and filings. Holding unemployment constant, as we increase UI benefit generosity, we see an increase in the expected county-level eviction filings per 100 renter-occupied households. However, the predicted values are quite small across the entire table.

Additionally, Table 9 depicts that the relationship between unemployment and filings varies by benefits. When benefits are low, as we increase unemployment, we see a decrease in the expected county-level eviction filings per 100 renter-occupied households. This negative relationship holds across all time periods. However, the predicted values remain quite small

across the entire table. When benefits are average, as we increase unemployment, we increase the eviction filing rate. This relationship also holds across all time periods. Finally, when benefits are large, as we increase unemployment, we increase the eviction filing rate even more.

Taken together, these results seem to suggest a small change in the number of county-level eviction filings. However, these small county-level effects can result in larger state-level effects once aggregated. For example, using the estimates from the main model, increases the maximum UI benefit generosity by $1,000, we would expect to see 0.296 more eviction filings per 100 renter-occupied households at the mean level of unemployment. Using North Carolina, where I attended undergraduate and graduate school, as an example, in 2016, the Eviction Lab database estimates that there were over 1.3 million renter-occupied households. Assuming this number, an increase in maximum UI benefits generosity by $1,000 in North Carolina could result in 3,848 more eviction filings in a given year with average unemployment. If we expect about 40 percent of those filings to result in judgments, then this increase in benefits could lead to nearly 1,540 eviction judgments across the state. According to my calculations using data from the Eviction Lab, in an average year, the number of eviction filings is nearly 150,000. This increase in benefits could lead to around a 2.5 percent increase in filings in the state.

My results suggest that the relationship between benefits and filings cannot be understood in isolation from the relationship between benefits and unemployment. When benefits are low, an increase in the unemployment rate leads to a decrease in the eviction filing rate. When benefits are high, an increase in the unemployment rate leads to an increase in the eviction filing rate. These relationships hold to a lesser extent during and after the Great Recession. These results are consistent with the literature on landlord-tenant interactions, particularly serial filings.

Landlord-tenant interactions are best viewed from the landlord's point of view (Garboden and Rosen, 2019). Eviction judgments are costly to landlords. "From a landlord's perspective, even the most straightforward evictions result in 2 months of lost rent plus turnover costs" (Garboden and Rosen, 2019). Although eviction judgements lead to the removal of a problem tenant, it comes with the costs associated with going to court, turning over the unit, and finding a new tenant. Qualitative research from Baltimore, MD, Cleveland, OH, and Dallas, TX suggests that landlords prefer a tenant to a vacancy (Garboden and Rosen, 2019).

There are two actions a landlord can take when dealing with a problem tenant: filing an eviction to reach an eviction judgment (Type 1) or filing an eviction to reach an eviction filing (Type 2). Because an eviction judgment is costly, a landlord will file to reach an eviction judgment only when they believe their tenant will not pay their back rent (Garboden and Rosen, 2019). An eviction filing, on the other hand, is not costly. Eviction filings allow a landlord to reach an eviction judgment if needed. Further, eviction filings can induce a tenant to pay and can give the landlord the opportunity to collect late fees (Garboden and Rosen, 2019). These benefits lead to much of the serial eviction filings we see across the US. As a result, many landlords will file not to reach an eviction judgment, but simply for the sake of filing to receive any of these benefits.

When benefits are low, landlords may perceive that there is less of a social safety net. Therefore, as unemployment increases, landlords may be more likely to file for eviction to reach eviction judgement, because they know their tenants will not be able to pay their back rent. This logic explains the decrease in eviction filings that we see when unemployment rates increase. Essentially, landlords may be switching from Type 2 landlords to Type 1 landlords. By contrast, when benefits are high, landlords may perceive that there is more of a social safety net. As

unemployment increases, landlords may be more likely to file for eviction to reach an eviction filing, because they know their tenants will eventually be able to pay as a result of their benefits. This logic explains the increase in eviction filings that we see when unemployment rates increase. Landlords are filing to file, which likely results in even more eviction filings, because individuals are remaining in their homes, but behind on their rent.

Finally, the interaction between benefits and unemployment, and that interaction relationship with eviction filings remains during and after the Great Recession, albeit it decreases. In the context of the preceding discussion, this result suggests that during times of economic recession landlords may be less sure that their tenant will eventually be able to pay and less sure that they will be able to find a satisfactory new tenant. These negative impacts on the likelihood of filing for eviction mitigate the positive relationship between benefits and filings. This outcome persists even after the Great Recession due to the slow recovery and potentially lasting change in the interactions between landlords and tenants.

8. Conclusion

In this paper, I study the effect of UI benefits on rental housing evictions. To do so, I exploit differences in UI generosity across states and over time. I find that county-level eviction filing rates increase as state-level benefits become more generous. This positive relationship is smaller during and after the Great Recession. Despite what intuition may indicate, these results make sense within the framework of the landlord-tenant relationship. Landlords are more likely to file when they are sure that their late tenants will eventually pay. Although the effects are somewhat small at the county-level, the aggregated effect can be larger. For example, a $1,000 increase in maximum benefit generosity in North Carolina could lead to 3,848 additional eviction filings in the state.

These results suggest that increases in UI generosity can lead to unintended consequences for renters. However, these results do not mean that policymakers should refrain from increasing UI generosity and cannot rely on unemployment insurance as an eviction diversion program. My results suggest that we need to think more clearly about how we create and implement eviction diversion programs. Preventing eviction filings requires delivery of benefits in advance of the day rent is due. If tenants are late on their rent, they will continue to be filed on.

Additionally, these results highlight the importance of understanding the landlord-tenant relationship. When studying eviction, the literature has focused almost exclusively on the tenant's perspective. Although tenants certainly suffer a larger fallout from eviction, the landlord perspective is incredibly important. If we do not understand the landlord-tenant relationship, we will never be able to understand why certain programs, like unemployment insurance, are not preventing filings like our intuition suggested they would. Ultimately, we need a clear understanding of the mechanisms through which evictions take place if we wish to prevent evictions.

TABLES AND FIGURES

Table 1. The Percentage of Eviction Filings that Result in Eviction Judgments over Time

Year	Eviction Filings	Eviction Judgments	Filings to Judgments (%)
2002	2,085,491	864,918	41
2003	2,134,014	910,361	43
2004	2,177,018	940,817	43
2005	2,306,580	969,303	42
2006	2,441,067	1,019,600	42
2007	2,002,531	958,605	48
2008	2,079,865	996,233	48
2009	2,108,719	952,699	45
2010	2,374,084	993,531	42
2011	2,452,080	987,999	40
2012	2,420,135	983,666	41
2013	2,378,464	930,693	39
2014	2,394,318	908,977	38
2015	2,288,732	870,325	38
2016	2,350,042	898,479	38

Source: Eviction Filings and Eviction Judgments come from the Eviction Lab national-level data.

Notes: Eviction filings is equal to the total number of eviction filings in the United States each year, including those filed against the same household. Eviction judgments is equal to the total number of eviction judgments in the United States each year. Filings to Judgments equals column 3 divided by column 2 multiplied by 100. Column 4 is rounded to the nearest whole percent.

Table 2. The Change in UI Benefits over Time by State

	Maximum Weekly Benefit Amount			Maximum Benefit Duration		
State	2002	2016	% Change	2002	2016	% Change
AL	190	265	39%	26	26	0%
AZ	205	240	17%	26	26	0%
AR	333	451	35%	26	20	-23%
CA	330	450	36%	26	26	0%
CO	390	552	42%	26	26	0%
CT	481	673	40%	26	26	0%
DE	330	330	0%	26	26	0%
FL	275	275	0%	26	12	-54%
GA	284	330	16%	26	14	-46%
ID	315	410	30%	26	26	0%
IL	431	595	38%	26	25	-4%
IN	312	390	25%	26	26	0%
IO	347	529	52%	26	26	0%
KS	333	474	42%	26	16	-38%
KY	329	415	26%	26	26	0%
LA	258	247	-4%	26	26	0%
ME	408	595	46%	26	26	0%
MA	768	1083	41%	30	30	0%
MI	300	362	21%	26	20	-23%
MN	452	658	46%	26	26	0%
MS	200	235	18%	26	26	0%
MO	250	320	28%	26	13	-50%
MT	286	487	70%	26	28	8%
NE	262	392	50%	26	26	0%
NV	301	417	39%	26	26	0%
NH	331	427	29%	26	26	0%
NJ	446	657	47%	26	26	0%
NM	277	473	71%	26	26	0%
NY	405	420	4%	26	26	0%
NC	396	350	-12%	26	13	-50%
ND	290	633	118%	26	26	0%
OH	414	587	42%	26	26	0%
OK	304	505	66%	26	26	0%
OR	400	549	37%	26	26	0%
PA	438	581	33%	26	26	0%
RI	518	707	36%	26	26	0%
SC	268	326	22%	26	20	-23%
SD	234	366	56%	26	26	0%

TN	275	275	0%	26	26	0%
TX	319	479	50%	26	26	0%
UT	365	509	39%	26	26	0%
VT	312	446	43%	26	26	0%
VA	268	378	41%	26	26	0%
WA	496	664	34%	30	26	-13%
WV	338	424	25%	26	26	0%
WI	324	370	14%	26	26	0%
WY	283	491	73%	26	26	0%

Source: Maximum Weekly Benefit Amount (WBA) and Maximum Benefit Duration come from the January publications of the US Department of Labor Employment & Training Administration's Significant Provisions of State UI Laws.
Notes: Maximum WBA is equal to the highest value listed for each state. Dollar values in columns 2-3 are nominal. Duration values in columns 5-6 are in weeks. Columns 4 and 7 are rounded to the nearest whole percent.

Table 3. The Potential Value of UI Benefits to Renters

State	Median Household Income	Potential UI Benefit	Median Gross Rent	UI Rent Burden	Maximum Coverage
AL	2,249	1,124	743	66%	6
AK	4,483	1,914	1,208	63%	6
AZ	3,212	1,039	976	94%	6
AR	2,378	1,189	701	59%	4.62
CA	3,936	1,949	1,375	71%	6
CO	3,516	1,758	1,171	67%	6
CT	3,336	1,668	1,115	67%	6
DE	3,122	1,429	1,048	73%	6
DC	4,235	1,554	1,376	89%	6
FL	3,055	1,191	1,086	91%	2.77
GA	2,990	1,429	933	65%	3.23
HI	4,594	2,297	1,483	65%	6
ID	2,691	1,346	790	59%	6
IL	3,033	1,516	950	63%	5.77
IN	2,594	1,297	768	59%	6
IO	2,642	1,321	741	56%	6
KS	2,849	1,424	789	55%	3.7
KY	2,363	1,182	707	60%	6
LA	2,224	1,070	808	76%	6
ME	2,543	1,272	797	63%	6
MD	4,140	1,862	1,314	71%	6
MA	3,448	1,724	1,179	68%	6.93
MI	2,564	1,282	818	64%	4.62
MN	3,064	1,532	912	60%	6
MS	2,272	1,018	728	72%	6
MO	2,706	1,353	771	57%	3
MT	2,714	1,357	741	55%	6.47
NE	2,777	1,388	769	55%	6
NV	3,263	1,632	1,003	61%	6
NH	3,589	1,794	1,026	57%	6
NJ	3,713	1,857	1,244	67%	6
NM	2,498	1,249	804	64%	6
NY	3,411	1,706	1,194	70%	6
NC	2,718	1,359	839	62%	3
ND	3,216	1,608	776	48%	6
OH	2,587	1,293	759	59%	6
OK	2,614	1,307	744	57%	6
OR	3,110	1,555	1,015	65%	6
PA	2,863	1,432	881	62%	6
RI	2,782	1,391	948	68%	6
SC	2,637	1,318	841	64%	4.62

SD	2,657	1,329	706	53%	6
TN	2,634	1,191	806	68%	6
TX	3,244	1,622	956	59%	6
UT	3,430	1,715	954	56%	6
VT	2,709	1,355	925	68%	6
VA	3,664	1,637	1,159	71%	6
WA	3,757	1,879	1,135	60%	6
WV	2,169	1,085	682	63%	6
WI	2,820	1,410	802	57%	6
WY	3,236	1,618	840	52%	6

Source: Calculations based on 2016 American Community Survey and the January 2016 publication of the US Department of Labor Employment & Training Administration's Significant Provisions of State UI Laws.

Notes: Values in columns 2-5 are monthly. The median household income is median income among renter households in each state. The potential UI benefit is the minimum value of either half the value of the monthly median household income or the state's monthly maximum benefit. The state's monthly maximum benefit is calculated by multiplying 4.33 to the state's maximum weekly benefit amount values (Table 2, Column 3). The maximum duration is the state's maximum duration in weeks. The maximum coverage is calculated by dividing 52 (the number of weeks in a year) by the maximum duration values (Table 2, Column 6).

Table 4. Summary Statistics

	Mean	Median	SD
Panel A. State characteristics (2002-2016, N = 705)			
Unemployment insurance			
Max Benefit ($ thousands)	10.65	10.19	3.81
Max Weekly Benefit ($ thousands)	0.41	0.39	0.13
Max Regular Duration (weeks)	25.77	26.00	1.89
Real Maximum UI Benefit	12.01	11.58	4.11
Average Weekly Benefit ($ thousands)	0.29	0.28	0.05
Adjusted Max Benefit ($ thousands)	18.79	12.99	13.99
Economic variables			
Unemployment rate (%)	6.02	5.60	2.01
log of real GDP per capita	10.78	10.76	0.18
Home price growth (%)	2.29	2.35	5.96
Average annual wages ($ thousands)	41.94	40.97	8.03
Panel B. County characteristics (2002-2016, N = 39,369)			
Eviction and housing			
Eviction filing rate	3.10	1.54	4.78
Employment, income, and rent			
Unemployment rate (%)	6.50	5.90	2.72
log of median household income	10.75	10.75	0.24
Median gross rent ($ hundreds)	6.76	6.41	1.87
Median rent burden	27.10	27.20	4.79
Demographics			
African American (%)	8.37	1.72	14.06
Hispanic (%)	7.68	2.83	12.80
Urban	0.34	0.00	0.47

Notes: This table describes my main sample. Max Benefit, Max Weekly Benefit, Average Weekly Benefit, and Adjusted Max Benefit are not adjusted for inflation. Home price growth is captured by the percent change in the Housing Price Index. Average annual wages capture the average state-level wage.

Figure 1: Average Eviction Filing Rate over Time by Unemployment

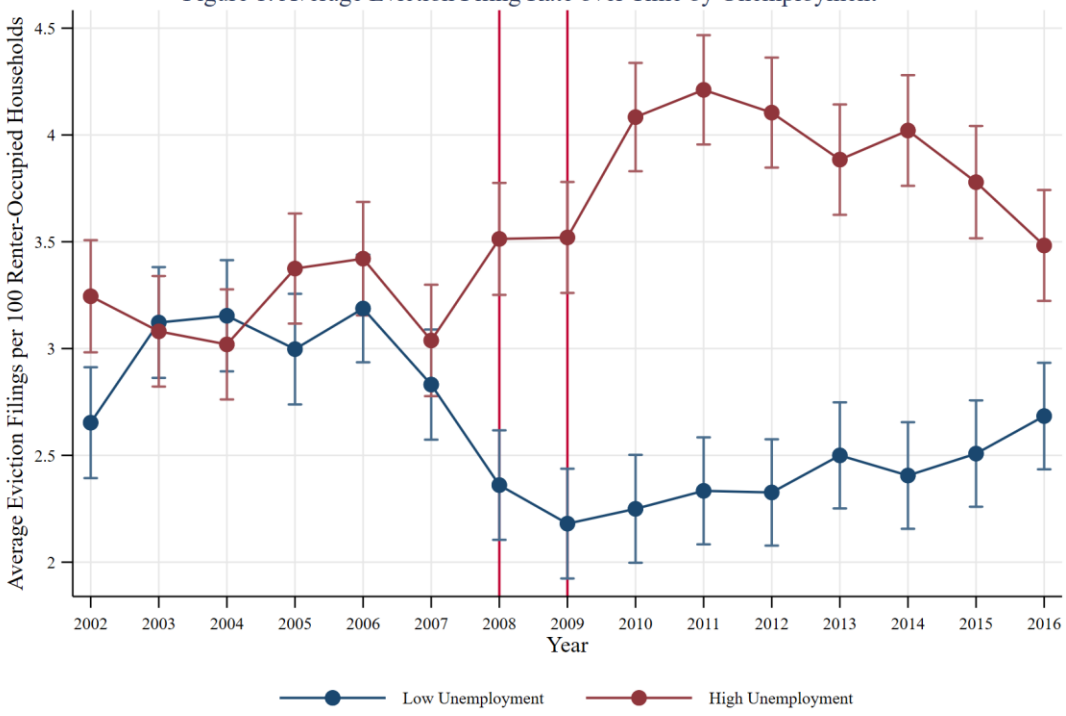

Figure 2: Average Eviction Filing Rate over Time by Max Benefit

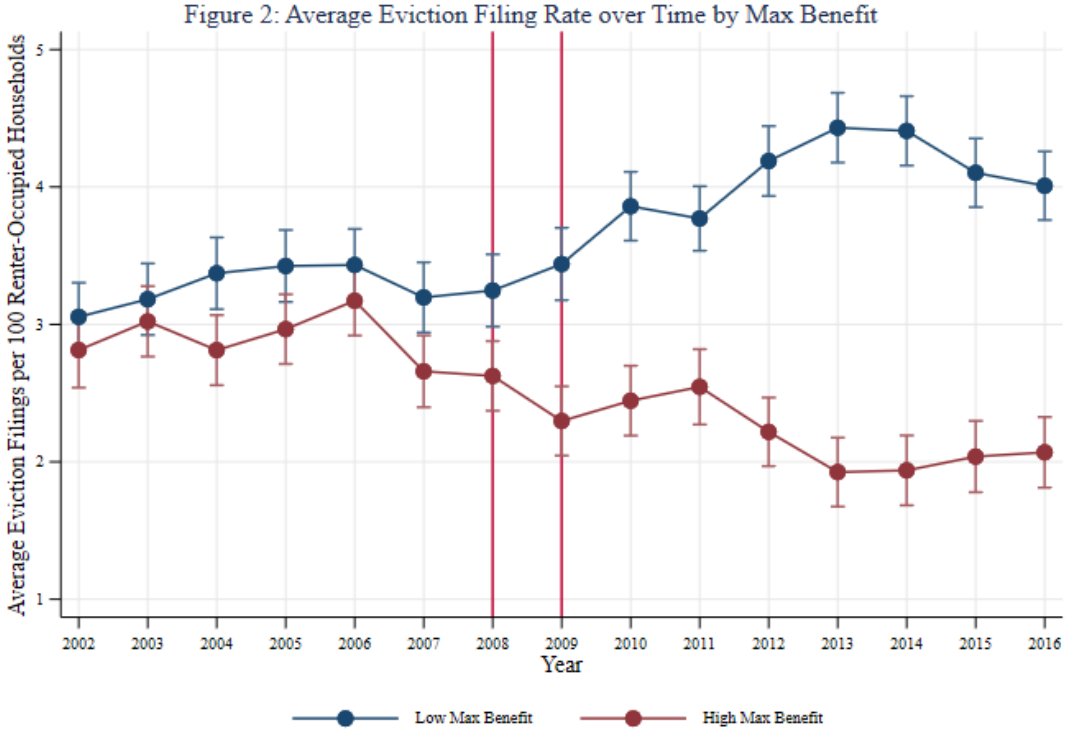

Figure 3: Average Eviction Filing Rate over Time by Max Benefit and Unemployment

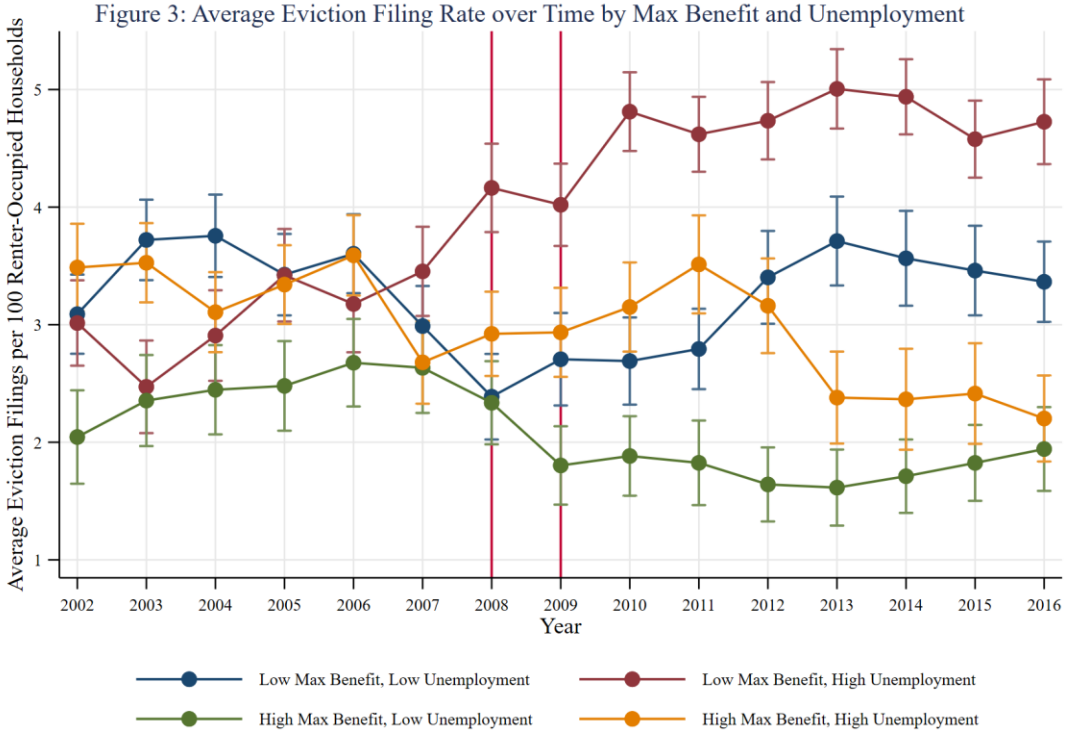

Table 5. Regressions of Maximum UI Benefit on Economic Variables

	Maximum UI Benefit				
	(1)	(2)	(3)	(4)	(5)
Unemployment Rate	-0.0132				0.249**
	(0.084)				(0.109)
Real GDP per Capita		8.993***			8.055***
		(1.915)			(2.839)
Housing Price Index			-0.0144		-0.00555
			(0.014)		(0.015)
Wages				0.358***	0.187
				(0.101)	(0.122)
Observations	705	705	705	705	705
R^2	0.9205	0.9315	0.9207	0.9316	0.9361

Notes: Clustered standard errors in parentheses. Clustering at the state-level. Each model includes state and year fixed effects. Maximum UI Benefit captured in real terms.
* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6. The Effect of Max UI Benefit on Eviction Filing Rates, 2002-2016

	Eviction Filing Rate		
	(1)	(2)	(3)
Max UI Benefit	0.148***	0.164***	0.296***
	(0.034)	(0.031)	(0.073)
Unemployment Rate	0.0191	0.0236	0.148
	(0.060)	(0.060)	(0.108)
Great Recession (GR)	0.524**	0.766***	0.426*
	(0.213)	(0.235)	(0.228)
Post Great Recession (Post GR)	0.689**	0.860***	0.534*
	(0.274)	(0.283)	(0.284)
Max UI Benefit × Unemployment Rate		0.0435***	0.113***
		(0.010)	(0.028)
GR × Max UI Benefit			-0.109*
			(0.064)
GR × Unemployment Rate			-0.137*
			(0.076)
GR × Max UI Benefit × Unemployment Rate			-0.0646**
			(0.025)
Post GR × Max UI Benefit			-0.140**
			(0.061)
Post GR × Unemployment Rate			-0.142*
			(0.073)
Post GR × Max UI Benefit × Unemployment Rate			-0.0745***
			(0.028)
County controls	Yes	Yes	Yes
State controls	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes
Observations	39369	39369	39369
R^2	0.5179	0.5206	0.5221

Notes: Clustered standard errors in parentheses. Clustering at the state-level. County controls include median household income, median gross rent, median rent burden, percent African American, and percent Hispanic. State controls include extended benefits, unemployment rate, real GDP, HPI, and average annual wage. Significance is * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Figure 4. Predictive Margins
The Effect of UI Benefits on Eviction Filing Rates

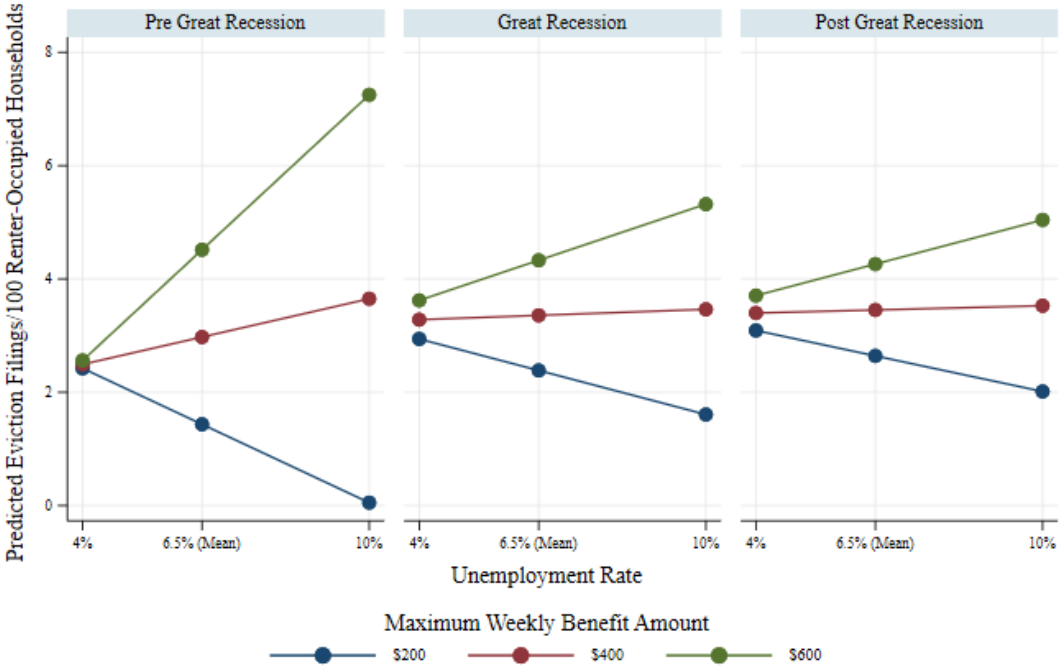

Table 7. Robustness of Model to Changes to Real Values and Changes in Fixed Effects

	Eviction Filing Rate			
	Real Values (1)	Drop State Controls (2)	County FE (3)	State-by-year FE (4)
Max UI Benefit	0.299***	0.194*	0.185***	
	(0.071)	(0.103)	(0.057)	
Unemployment Rate	0.0640	0.223**	-0.00480	0.195*
	(0.095)	(0.110)	(0.026)	(0.105)
Max UI Benefit × Unemployment Rate	0.0967***	0.123***	0.0191**	0.128***
	(0.027)	(0.031)	(0.008)	(0.031)
Great Recession (GR)	0.166	-1.085***	-0.0462	
	(0.180)	(0.357)	(0.119)	
Post Great Recession (Post GR)	-0.0145	-1.586***	0.170	
	(0.187)	(0.487)	(0.179)	
GR × Max UI Benefit	-0.0994	-0.162**	-0.0378	
	(0.061)	(0.072)	(0.040)	
GR × Unemployment Rate	-0.0807	-0.254**	-0.0172	-0.222***
	(0.061)	(0.107)	(0.034)	(0.074)
GR × Max UI Benefit × Unemployment Rate	-0.0528**	-0.0842***	-0.0203**	-0.0466**
	(0.025)	(0.028)	(0.009)	(0.023)
Post GR × Max UI Benefit	-0.127**	-0.146*	-0.0577	
	(0.057)	(0.073)	(0.038)	
Post GR × Unemployment Rate	-0.0398	-0.203**	0.00641	-0.190***
	(0.059)	(0.091)	(0.031)	(0.067)
Post GR × Max UI Benefit × Unemployment Rate	-0.0581**	-0.0934***	-0.0242**	-0.0481
	(0.027)	(0.030)	(0.010)	(0.029)
County controls	Yes	Yes	Yes	Yes
County fixed effect	No	No	Yes	No
State controls	Yes	No	Yes	No
State fixed effects	Yes	Yes	No	No
State-by-year fixed effects	No	No	No	Yes
Observations	39369	39369	39369	39369
R^2	0.523	0.517	0.926	0.542

Notes: Column 1 presents results from the primary specification with real, instead of nominal, values for benefits, median household income, and median gross rent. Column 2 presents results from the primary specification without state-level controls. Column 3 presents results from the primary specification with county fixed effects. Column 4 presents results from the primary specification with

state-by-year fixed effects. Clustered standard errors in parentheses. Clustering at the state-level. County controls include median household income, median gross rent, median rent burden, percent African American, and percent Hispanic. State controls include extended benefits, unemployment rate, real GDP, HPI, and average annual wage. Significance is * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 8. Robustness of Model to Changes in Max UI Benefit and Addition of Weights

	Eviction Filing Rate			
	WBA	Duration	AWBA	Weighted
	(1)	(2)	(3)	(4)
Max UI Benefit	0.00922***	-0.0151	0.0138**	0.419*
	(0.002)	(0.057)	(0.005)	(0.234
Unemployment Rate	0.186	-0.00813	0.167	0.341
	(0.114)	(0.103)	(0.129)	(0.207)
Max UI Benefit × Unemployment Rate	0.00329***	0.0958**	0.00472**	0.105*
	(0.001)	(0.037)	(0.002)	(0.055)
Great Recession (GR)	0.332	0.487**	0.246	0.117
	(0.229)	(0.209)	(0.273)	(0.485)
Post Great Recession (Post GR)	0.409	0.642**	0.404	0.450
	(0.288)	(0.287)	(0.347)	(0.697)
GR × Max UI Benefit	-0.00345*	0.0620	-0.00564	-0.139
	(0.002)	(0.095)	(0.004)	(0.117)
GR × Unemployment Rate	-0.169**	0.00133	-0.173*	-0.131
	(0.080)	(0.072)	(0.097)	(0.158)
GR × Max UI Benefit × Unemployment Rate	-0.0020***	-0.0459	-0.00254*	-0.0740
	(0.001)	(0.050)	(0.001)	(0.047)
Post GR × Max UI Benefit	-0.0042**	0.0969	-0.00502	-0.149
	(0.002)	(0.072)	(0.004)	(0.127)
Post GR × Unemployment Rate	-0.184**	0.0230	-0.162*	-0.0960
	(0.080)	(0.066)	(0.093)	(0.163)
Post GR × Max UI Benefit × Unemployment Rate	-0.0023***	-0.0717**	-0.0031**	-0.0778
	(0.001)	(0.035)	(0.001)	(0.049)
County controls	Yes	Yes	Yes	Yes
State controls	Yes	Yes	Yes	Yes
State fixed effects	Yes	Yes	Yes	Yes
Observations	39369	39369	39311	39369
R^2	0.522	0.518	0.520	0.653

Notes: Column 1 uses maximum weekly benefit amount (WBA) as the measure of UI benefit generosity. Column 2 uses maximum benefit duration as the measure of UI benefit generosity. Column 3 uses average weekly benefit amount (AWBA) as the measure of UI benefit generosity. Column 4 weights the primary specification by county population. Clustered standard errors in

parentheses. Clustering at the state-level. County controls include median household income, median gross rent, median rent burden, percent African American, and percent Hispanic. State controls include extended benefits, unemployment rate, real GDP, HPI, and average annual wage. Significance is * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 9. Expected County-Level Eviction Filings by UI Benefits and Unemployment Rates

			Expected Eviction Filings		
Weekly Benefit	Maximum Benefit	Unemployment Rate	Pre-Great Recession	During Great Recession	Post-Great Recession
$200	$5,200	4%	2.42	2.94	3.09
$200	$5,200	6.5%	1.43	2.39	2.64
$200	$5,200	10%	0.05	1.61	2.01
$400	$10,400	4%	2.49	3.28	3.40
$400	$10,400	6.5%	2.97	3.36	3.45
$400	$10,400	10%	3.65	3.46	3.53
$600	$10,400	4%	2.56	3.62	3.71
$600	$10,400	6.5%	4.51	4.33	4.26
$600	$10,400	10%	7.25	5.32	5.04

Notes: This table plots the expected eviction filings per 100 renter-occupied households at the county-level from the primary regression results.

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APPENDIX A

Although the graphical analysis suggests that higher benefits lead to lower average eviction filing rates, the graphical analysis does not account for other county or state-level controls. Once some of these things are accounted for the results change. Table A1 presents these results. In column , I present the difference in average eviction filing rates between the high and low benefit groups from Figure 1. In columns 2 and 3, I present these same estimates controlling for state fixed effects and state fixed effects and state controls, respectively. Although column 1 shows consistently lower average eviction filings for the high benefit group, columns 2 and 3 show consistently higher average eviction filings for the high benefits group. State trends are important to control for, so it is important to control for state fixed effects. The inclusion of these effects changes the results from intuitive to counterintuitive.

Table A1. Average Eviction Filing Rates over Time by UI Benefit Groups

	Average Eviction Filing Rate		
	(1)	(2)	(3)
2003 × High Max Benefit	-0.0329	0.446***	0.593***
	(0.182)	(0.156)	(0.164)
2004 × High Max Benefit	-0.242	0.282*	0.568***
	(0.182)	(0.156)	(0.176)
2005 × High Max Benefit	-0.0895	0.423***	0.813***
	(0.181)	(0.155)	(0.188)
2006 × High Max Benefit	0.117	0.616***	1.231***
	(0.181)	(0.155)	(0.204)
2007 × High Max Benefit	-0.396**	0.350**	1.206***
	(0.184)	(0.159)	(0.231)
2008 × High Max Benefit	-0.430**	0.307**	1.333***
	(0.181)	(0.156)	(0.255)
2009 × High Max Benefit	-0.758***	0.161	1.189***
	(0.181)	(0.155)	(0.298)

2010 × High Max Benefit	-0.610***	0.291*	1.421***
	(0.181)	(0.156)	(0.317)
2011 × High Max Benefit	-0.509***	0.309*	1.625***
	(0.189)	(0.163)	(0.340)
2012 × High Max Benefit	-0.837***	0.184	1.692***
	(0.180)	(0.152)	(0.333)
2013 × High Max Benefit	-1.130***	0.347**	1.934***
	(0.180)	(0.153)	(0.345)
2014 × High Max Benefit	-1.117***	0.284*	2.096***
	(0.181)	(0.154)	(0.375)
2015 × High Max Benefit	-1.016***	0.286*	2.282***
	(0.183)	(0.155)	(0.401)
2016 × High Max Benefit	-0.986***	0.275*	2.361***
	(0.182)	(0.154)	(0.410)
Constant	3.055***	2.859***	-31.28***
	(0.127)	(0.105)	(7.086)
State fixed effects	No	Yes	Yes
State controls	No	No	Yes
Observations	39393	39393	39393
R^2	0.0233	0.3816	0.3823

Notes: This table presents results from a regression of eviction filing rates on the interaction between years and the benefit groups. As a result, these estimates are the difference between the average eviction filing rates for the high benefit group versus the low benefit group.