A Difference-in-Differences Analysis of the Effect of the Minimum Wage on Eviction Rates

by

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Abstract

Taking advantage of the variation across states in minimum wages and eviction rates, I use various difference-in-differences approaches to assess the effect of state-level increases in the minimum wage on county-level eviction rates. This depends upon the assumption that state-level minimum wage changes are exogenous to each county. Eviction rates are measured as the percent of renter households that were legally evicted.[1] Just having any minimum wage, as a policy, has little impact. Results can range from decreasing the eviction rate by 0.72 percentage points to increasing it by 0.71 percentage points. The continuous variable difference-in-differences results depend upon minimum wage intensity, and more strongly suggest that a higher minimum wage would decrease eviction rates. This paper finds that increasing the percentage deviation of the state minimum wage from the federal minimum wage by 1 percentage point is expected to decrease eviction rates by 1.92 percentage points to 7.04 percentage points. This is a large impact, as the average eviction rate is 1.67%.

[1] This research uses data from The Eviction Lab at Princeton University, a project directed by Matthew Desmond and designed by Ashley Gromis, Lavar Edmonds, James Hendrickson, Katie Krywokulski, Lillian Leung, and Adam Porton. The Eviction Lab is funded by the JPB, Gates, and Ford Foundations as well as the Chan Zuckerberg Initiative. More information is found at evictionlab.org.

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1. Introduction

Evictions are landlord-initiated, involuntary renter expulsion, typically because the tenant was behind on paying rent. According to the American Housing Survey,[2] the percentage of all renter occupied units in the United States that were unable to pay all or part of the rent increased slightly from 6.17% to 6.3% from 2013 to 2017. Of those, 49.5-51.5% were behind one month, 21-23.8% were behind two months, and 23.8% were behind three months. In 2013, 74.5% of those threatened with an eviction notice cited failure to pay rent as the reason. Although people at any income level may be evicted, those at the bottom of the income distribution are most susceptible.

The purpose of this study is to add to the relatively nascent understanding of evictions, by looking at what impact increasing the state minimum wage might have on them. I approach this question by using three difference-in-difference models, differentiating between treated and control states by whether they increased their minimum wage beyond that of the federal government. The first model evaluates the minimum wage as a policy, as in whether or not the state had one that was superior to the federal minimum wage. Irrespective of the level of the minimum wage, the minimum wage as a policy may serve to signal the responsiveness of state legislators to low-income workers. This analysis ignores the common occurrence of repeated minimum wage increases, wherein a treated state continues to raise its minimum wage in subsequent years.

[2] The Department of Urban Housing and Development sponsors the American Housing Survey and surveys individual households every other year. The Delinquent Payments and Notices is a new section starting from 2013, and the Evictions section is also yet to be inaugurated.

The next model incorporates variable treatment intensity, so it takes into account the magnitude of a state's minimum wage increase, which is measured as the percent deviation from the federal level. This is more minimum-wage specific, as opposed to potentially indicating the results from any policy that one state implemented that others did not. The final model elaborates on the first by differentiating treated periods for each subsequent minimum wage increase. This has the potential to see how a minimum wage increase might have a persistent or lagging effect on eviction rates. It takes into account repeated minimum wage increases, but not by how much.

I analyze five case studies in total. The first three all happen to see a first minimum wage increase in 2005, and are based on some geographic proximity. In the southeast, Florida is a treated state whose counties' eviction rates are compared to those of Georgia and Tennessee. In the midwest, Minnesota and Wisconsin are treated, and are compared to counties in Iowa and Missouri. The last neighbor based case study is in the northeast. It evaluates the difference in eviction rates between the treated counties of the states New York and New Jersey against the untreated counties of Pennsylvania. The penultimate case study compares the counties of three states, Michigan, Nevada, and West Virginia, that observed a minimum wage increase in 2006, against the counties of twelve states that do not ever observe a minimum wage increase. The final case study compares the counties of nine states that first observed a minimum wage increase in 2007, against the same twelve states that do not. These two time-based studies have the benefit of spanning the contiguous United States and thus, more observations. Two important assumptions are that eviction rates were growing similarly between treated and control states, and that the state minimum wage is exogenous to each county.

Based on these case studies, I estimate that having a state minimum wage higher than that of the federal government can range from increasing or decreasing the eviction rate by 0.7 percentage points. On the whole, this is likely an insignificant result, as it may be confused with other state level policy changes. From the variable treatment intensity difference-in-differences, I estimate that increasing the state minimum wage by 1% from the federal minimum wage is expected to lower the eviction rate by 1.92 to 7.04 percentage points. The third model led to mixed results between the neighbor-based and time-based case studies, and also risks being confused for other state level policy changes.

The rest of this paper is structured as follows: Section 2 discusses background information, wherein 2.1 is a review of the relevant literature and 2.2 outlines an economic analysis of evictions. Section 3 describes the data used and its sources. Section 4 provides the various difference-in-differences approaches. Section 5 provides the results of each case study, with subsection 5.1 focusing on neighbor based comparisons and subsection 5.2 based on specific years where the minimum wage changed. Finally, section 6 reviews limitations and future work, while section 7 concludes.

2. Background

2.1 Literature Review

Good analysis and data of renters' evictions is more of a recent undertaking. Previous literature on eviction rates tends to examine eviction's impact on labor earnings and poverty. There are reasons unrelated to rent as to why a landlord would evict their tenants, which

according to the American Housing Survey (Appendix A), cover a quarter of threatened eviction notices. There could have been a lease violation if the tenant brought in extra boarders, or tried to sublet their room to another person. Sometimes, excessive property damage, domestic disturbances, or lawbreaking motivate a landlord to evict their tenant out of liability concerns over nuisance property ordinances. Sometimes, the building is condemned or the landlord is foreclosed upon, and the new owners have another use in mind for the property.

Taking advantage of such instances, one could somewhat isolate the causative impact of eviction on various economic outcomes. Desmond and Gershenson (2016) found that evictions increase the likelihood of being fired by 11-22%. From this, they conclude that housing stability promotes employment stability. A working paper by Collinson and Reed (2018) negates that evictions worsen employment outcome, but they do estimate that evictions modestly lower earnings. They used random assignment of New York City housing cases, and also found that a higher eviction rate increases the risk of homelessness, long-term residential instability, and emergency room use. Another paper done by Humphries et. al. (2019) also uses court cases, taking random assignments from Cook County, Illinois and linking them to credit bureau and payday loan data. They find that evictions decrease credit access and durable consumption. All of these researchers' work centers on addressing eviction as a cause of societal instability. Eviction itself causes people to lose their home, and sometimes their community and school district. Eviction itself can contribute directly to financial loss, economic distress, and higher rates of depression (Desmond 2015). Eviction itself invokes costs in either moving or storing goods, and the time necessary to find a new place to live. Finally, having an eviction on record can make it more difficult to get one's life back on track. Other landlords hesitate to lease their

place to a tenant who was previously evicted without compensation for the risk, which only prolongs the instability. Without another place to live, those who have lost their jobs have no permanent address for job applications, making finding another job and home almost impossible.

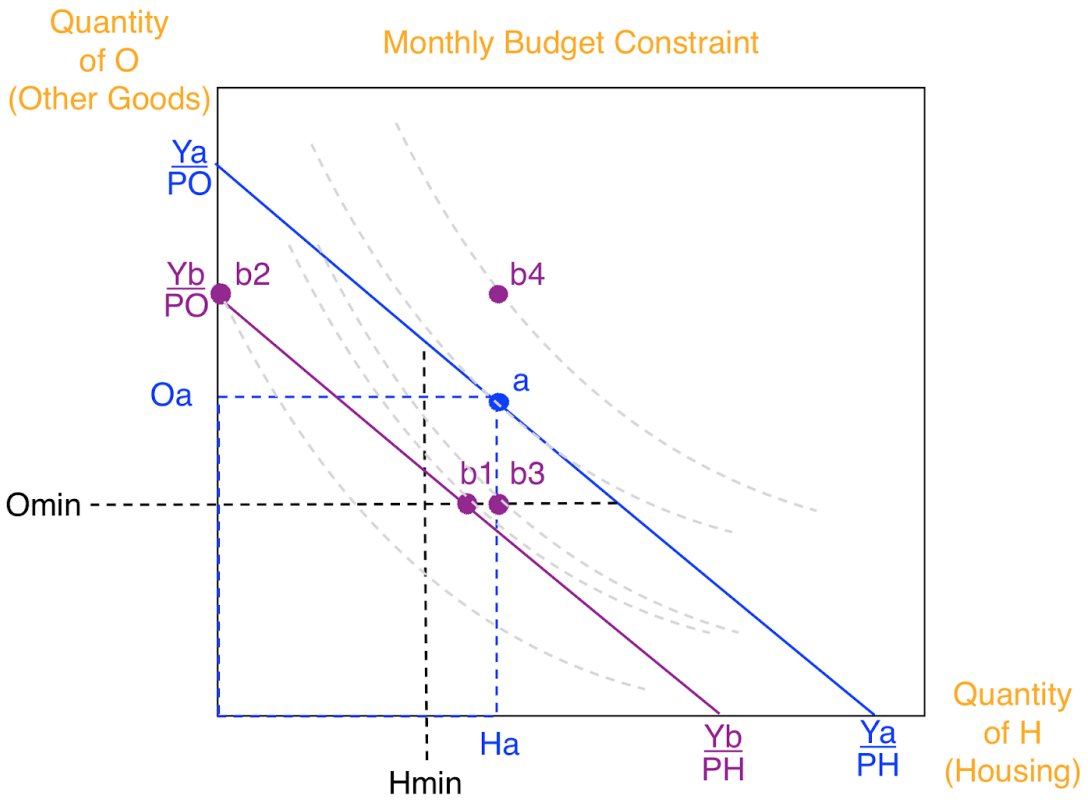
This paper contributes to the literature by going back in the other direction, and looking at the impact of labor earnings on eviction rates. More specifically, whether increasing the minimum wage reduces eviction rates, and by how much. In classical economics, an increase in the minimum wage, and therefore the cost of labor, could cause unemployment, because the quantity demanded of labor is lower than the quantity supplied. Those who are laid off could have more evictions relative to those who managed to retain their work. However, there has been some new empirical work that suggests that there is not a negative employment effect due to an increase in the minimum wage. This began with Card and Krueger's work in 1994, with a difference-in-differences empirical analysis of low wage employment between Pennsylvania and New Jersey subject to a minimum wage increase in New Jersey. Based on that single raise in 1992, they found that employment actually rose in New Jersey and fell in Pennsylvania. Their conclusion was that the minimum wage did not decrease employment, but this was a short run analysis. Cengiz et al. (2019) looked at over 138 minimum wage hikes from 1979 to 2016 and also found a zero or non-negative effect on employment, along with a statistically significant average wage increase for low-income workers in the states that had the minimum wage increase. Based on these two papers, the minimum wage does not necessarily have a strong negative employment effect, which suggests that its impact on individual budget constraints could be positive. It may serve as a social signal in terms of normalizing a higher amount of money for an hour of work, helping potential employees better negotiate a starting wage. If total

income rises, and more low-income workers earned more than were shifted into less desirable jobs, we would expect to see eviction rates decline with a moderately higher minimum wage. For employees that retained their job, it is an exogenous income boost. For employees that lose their job, it could send them completely outside of the housing market, in which eviction rates would also fall.

2.2 Theory

The first step to understanding how to reduce eviction rates is to understand how they come to be in the first place. Assume that over the long run, people choose a housing level they can repeatedly pay for on average. If their economic circumstances did not worsen due to a negative budget shock, they would be able to pay their rent every month. We begin with a simple monthly budget constraint between housing and all other goods, illustrated in Image 0. At the chosen consumption bundle a with a monthly income of Ya, Ha is the amount of housing for bundle a, and Oa is the amount of all other essential goods, such as food and transportation. The minimum amount of all other goods necessary, most dramatically, as in the amount of food required to be healthy, is illustrated by a lower barrier at the point Omin.

Image 0. General Evictions due to a Budget Shock



The minimum amount of housing, indicated by Hmin, exists more as a theoretical reference than an actual reality. At the very least, some states, counties, or cities have housing codes, otherwise known as property maintenance codes or sanitation codes, that set minimum standards to protect residents[3]. However, beyond this simple model, there is likely an informal market below this minimum, with a de facto gradient between Hmin and 0. Most obviously, a zero quantity of housing would be being homeless, outside. Whether or not a shelter or staying with friends and family is also at that point is up to interpretation. In some areas, landlords are

[3] "State and Local Housing Codes." National Center for Healthy Housing, 2020. https://nchh.org/information-and-evidence/healthy-housing-policy/state-and-local/healthy-housing-codes/by-state/.

allowed to rent units with property code violations as long as they inform tenants about the problems[4]. Even so, this lower threshold may be a barrier and discourage potential housing suppliers from entering the market. Aside from market departure, indicated by b2, this gradient is assumed away for this model.

A negative income shock, such as being laid off, a sudden car repair, or an unexpected healthcare bill, shifts the budget constraint inward to that of a new income Yb. If unemployment insurance or Medicaid does not sufficiently cover the shock, this makes it impossible for the tenant to pay the rent for the next month or catch up subsequently, unless they get favorable shocks later. Although this could occur at any income bracket level, low-income people are especially at risk because they have less in savings.

There are several possible outcomes for the tenant. If they can find another place to live quickly enough, they might move to any new consumption bundle between b1 and b2 along the budget constraint. This would involve costs for moving, storage, or a new security deposit, but this would not result in a formal eviction record. This could cover anything from being homeless at b2, wherein the new location would be the street, a shelter, or staying with friends or family, or being able to quickly make a new rental agreement elsewhere. The main benefit here would be avoiding an eviction record, preventing imposed storage or moving costs, and going to their next lowest indifference curve. However, low-income renters are unlikely to be able to sign a new rental agreement on such short notice, especially while being one month behind at another

[4] City of Milwaukee, *Landlord Training Program: Keeping Illegal and Destructive Activity Out of Rental Property*, 7th ed. (Milwaukee: City of Milwaukee, Department of Neighborhood Services, 2006), 12; Wisconsin Administrative Code, ATCP134.04, "Disclosure Requirements."

property. The most likely voluntary departure would be a b2 consumption bundle in the immediate short run until they can find a new place to live.

If the renter faces homelessness either way, in choosing between willingly moving out or being evicted, then by staying at Ha they would at least be able to consume at a higher indifference curve, up to b4, until forcibly removed to b2. The renter could consume b3, hoping that the landlord will be understanding and reduce or delay rent payment, especially if the landlord is unlikely to be able to find a replacement tenant. Delayed payment might be better than no payment at all, especially because it costs money and time to evict and find new tenants. Moreover, the tenant might have built up social credit by being trustworthy in previously making back payments of rent. In that case, the next month when the renter is back to the original Ya, they could make up the delayed payment by consuming between bundle b3 and bundle a thereafter, assuming their negative income shock does not entirely drag them under.

If the renter expects to be evicted regardless, then they could take advantage of the Ha quantity of housing while spending their monthly income on other necessary goods, or saving for whenever they move into a new place. Assuming they have an incentive to consume the largest bundle they can, the tenant would be outside of the budget constraint, somewhere between b3 and b4. The spending range between b3 and b4 may have to be dedicated specifically to eviction costs, of paying court fees or to store possessions. However, there are long run consequences to ignoring unpaid rent, in that an eviction record makes it harder to get a lease later in either limiting the number of landlords willing to rent to them, or incurring a premium for being a risky tenant.

If evictions are solely because of budget shocks, then an increase in the minimum wage should not have an impact because tenants should have already decided to only consume a quantity they could sustainably, repeatedly rent. If the minimum wage led to a higher income for the poorest people, they would move up to a larger budget constraint and to a higher indifference curve, and occupy better housing and purchase more goods. It is unlikely they would stay at the same unit, and thus, they would be subject to budget shock evictions all over again. They would still be at risk for an unemployment shock, as the minimum wage is only a benefit to those who earn it.

There are further reasons why the minimum wage may not have a significant effect on the eviction rate. There are a lot of exemptions for who can earn it. In Arkansas, Illinois, Nebraska, and Virginia the minimum wage is only applicable to employers of four or more. In Georgia and West Virginia, rates are only applicable to employers of six or more. In Indiana, Michigan, and Vermont, rates are only applicable to employers of two or more. The minimum wage mostly applies to firms that have at least $500,000 in annual volume of business and engage in or produce for interstate commerce, as well as education, government, and healthcare institutions. Therefore, the workers exempt from receiving the minimum wage are especially vulnerable, in terms of income and working in the smallest businesses. Seasonal amusement park workers, small newspaper employees, fishermen, small farm workers, casual babysitters, caretakers, those under 20 years of age, and some other professionals are not entirely guaranteed the minimum wage. Prison workers are also not guaranteed the minimum wage.

Therefore, most workers on the lower end of the income distribution earn far less than the minimum wage.[5] In 2016, twice as many workers in the United States worked for less than the federal minimum wage than those that worked at that wage. This is hardly a recent phenomenon; in earlier years it has been the case that of workers paid hourly rates, three times as many workers worked for less than the federal minimum wage than those that did. Admittedly, many of these individuals are teenagers, and likely work part-time in services like hospitality or in restaurants for some spending money outside of school. However, it is also the most impoverished who work in the lowest paying jobs who are the most subject to potential evictions. A minimum wage increase may just blow by them.

Were the minimum wage to have a negative impact on eviction rates then, supports the premise that it increases incomes more than unemployment. Either the eviction rates fall because a higher income helps cushion low-income individuals against budget shocks, or people fully exit the housing market. Perhaps the minimum wage increases inequality at the very low end of the income distribution, but given its poor coverage and many exemptions, it seems unreasonable that people would fully exit the market in the long run, for these minimum wage policies persist. Eviction rates could also rise in the long run with a minimum wage increase. People who are more likely to depend upon the minimum wage may move to states where it is higher, thus crowding the unskilled labor market and driving rent prices up. In addition to higher unemployment, this could be one way that an increase in the minimum wage would raise eviction rates.

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[5] "Characteristics of Minimum Wage Workers, 2016 : BLS Reports." U.S. Bureau of Labor Statistics. U.S. Bureau of Labor Statistics, April 1, 2017. https://www.bls.gov/opub/reports/minimum-wage/2016/home.htm.

3. Data

3.1 Eviction Rates

The data source for eviction rates comes from The Eviction Lab at Princeton University. The lab collected data from formal eviction records, as in information from the eviction court case, such as defendant and plaintiff names, defendant's address, monetary judgement information, and the outcome. The lab also collected county-level eviction rates from state reported landlord-tenant cases from 27 states, New York City, and Washington D.C.

According to the codebook, evictions are measured as the "number of eviction judgments in which renters were ordered to leave in a given area and year." This entails a lasting mark on the tenant's record, and is measured at the point where the court made a judgement, not when the sheriff shows up for the eviction process. This may be an underestimation, as they only count a single address, and not the number of residents, that received an eviction judgment per year.

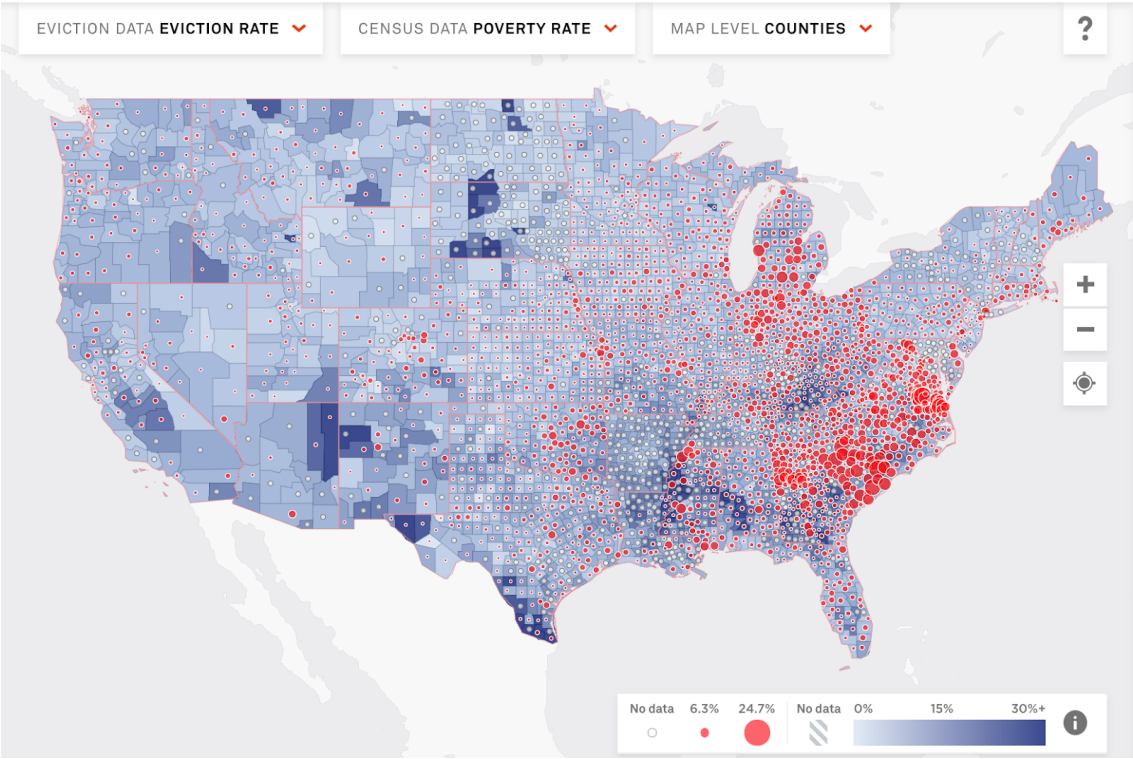
Eviction rates are measured as the percent of renter households that were legally evicted, as in "the ratio of the number of renter-occupied households in an area that received an eviction judgment." An eviction rate of 4.25, for example, means that about 1 in 25 renter households were evicted in the area of interest, which would be county for my purposes.

The eviction rate differs from the eviction filing rate, which would be the ratio of the number of eviction cases filed, including multiple cases filed against the same address, over the number of renter occupied homes. Eviction filings are often used by property managers to apply pressure to tenants who have not paid, as the first step of an eviction process. It can be effectively dismissed if the tenant can gather the money to pay rent, and would not leave a mark

on their record.

Therefore, the eviction rate is more indicative of when tenants absolutely could not pay rent and is better for this study. The downside is that eviction rates are less responsive in the short run, because it depends upon a court system and judgment. It is also likely to underestimate the number of instances where tenants were short on rent, if landlords prefer to avoid the inefficient, expensive court process and informally evict tenants. The Lab suggests that these informal evictions, done through threats or bribes, are more common and dire than formal evictions. These would still be instances where failure to pay rent is a reason to be displaced from home, and would therefore be beneficial to study.

Image 1. Mapped County Level Eviction Rates from the Princeton Eviction Lab. The size of the red circles on the maps corresponds to the eviction rate in each county, and the shade of blue corresponds to the poverty rate. The larger the red circle, the higher the eviction rate, and the darker the blue, the higher the poverty rate.



There are flaws with the data. It is incomplete, excluding some counties and the states of North Dakota, South Dakota, and Arkansas. States with private records do not have eviction rates available and thus these are not included in the data set, although the Eviction Lab did make an effort to impute missing values. Furthermore, the data only goes back to 2000, for some courts seal eviction data and others did not save it.

The Eviction Lab data set has also been critiqued for buying data from companies that landlords hire to check the eviction records of potential tenants, though there is a "subbed" Boolean variable indicating whether eviction numbers were pulled from an outside source. Other organizations, like the Acting Eviction Mapping Project, JustFix.nyc, Tenants Together, City Life / Vida Urbana, claim to work with tenants and grass roots organizations to get eviction information ("Eviction Lab Misses the Mark"). Their activism may bias eviction rates upward, but they may be better at collecting information on informal evictions. Their largest shortcoming is that each organization appears specific to a city, and thus unsuitable for comparisons based on state minimum wage differences.

It might have been interesting to use the other variables in the data set, such as population demographics, poverty rate, and rent burden, as covariates for the difference-in-differences regression, but they are repeated in five year clusters from various sources. For instance, the median gross rent uses a value from the 2000 Census summary file for years 2000 to 2004, and then a value from the 2009 5-year American Community Survey for years 2005 to 2009. This appears to be a common practice throughout the data set, so these variables cannot be relied upon in a regression.

Another variable of interest would be how many of those evicted are repeat offenders, or have only been evicted once. Differentiating between those who are constantly delinquent from those who got hit once by a budget shock, or those who become the former from the latter, would provide a better understanding of how evictions work. Most obviously, information on each specific tenant's income level and housing consumption level would resolve the question of to what degree evictions are independent of wages.

3.2 Minimum Wages

Minimum wage data comes from a combination of the historical changes in state minimum wage data from the Department of Labor[6], and the federal and state minimum wage changes compiled by Vaghul and Zipperer (2016) from the Washington Center for Equitable Growth. The Department of Labor minimum wage data is rounded, wherein the table lists the minimum wage that served for the majority of the year, if a state changed it after the first quarter. For instance, for a federal wage increase on July 24th, 2007 from $5.15 to $5.85, the minimum wage for 2007 $5.15. This risks ignoring the impact of a higher minimum wage on eviction in the latter months of 2007, and it is unclear whether that would lead to estimates biased upwards or downwards.

The data compiled by Vaghul and Zipperer track which day, month, and year federal, state, and sub-state governments changed their minimum wage, and goes from May 1974 to July 2016. Using this information, I calculate the expected yearly minimum wage based on when it

[6] "Changes in Basic Minimum Wages in Non-Farm Employment Under State Law: Selected Years 1968 to 2019." U.S. Department of Labor, January 2020. https://www.dol.gov/agencies/whd/state/minimum-wage/history.

was enacted. For example, the weighted federal minimum wage for the 2007 is 5.15*205/365+5.85*160/365 = $5.46, because July 24th is the 205th day of the year. For leap years, like 2008, the weighted minimum is adjusted for the higher number of days: 5.85*206/366+6.55*160/366 = $6.16. Final minimum wages per state per year are included in Appendix B.

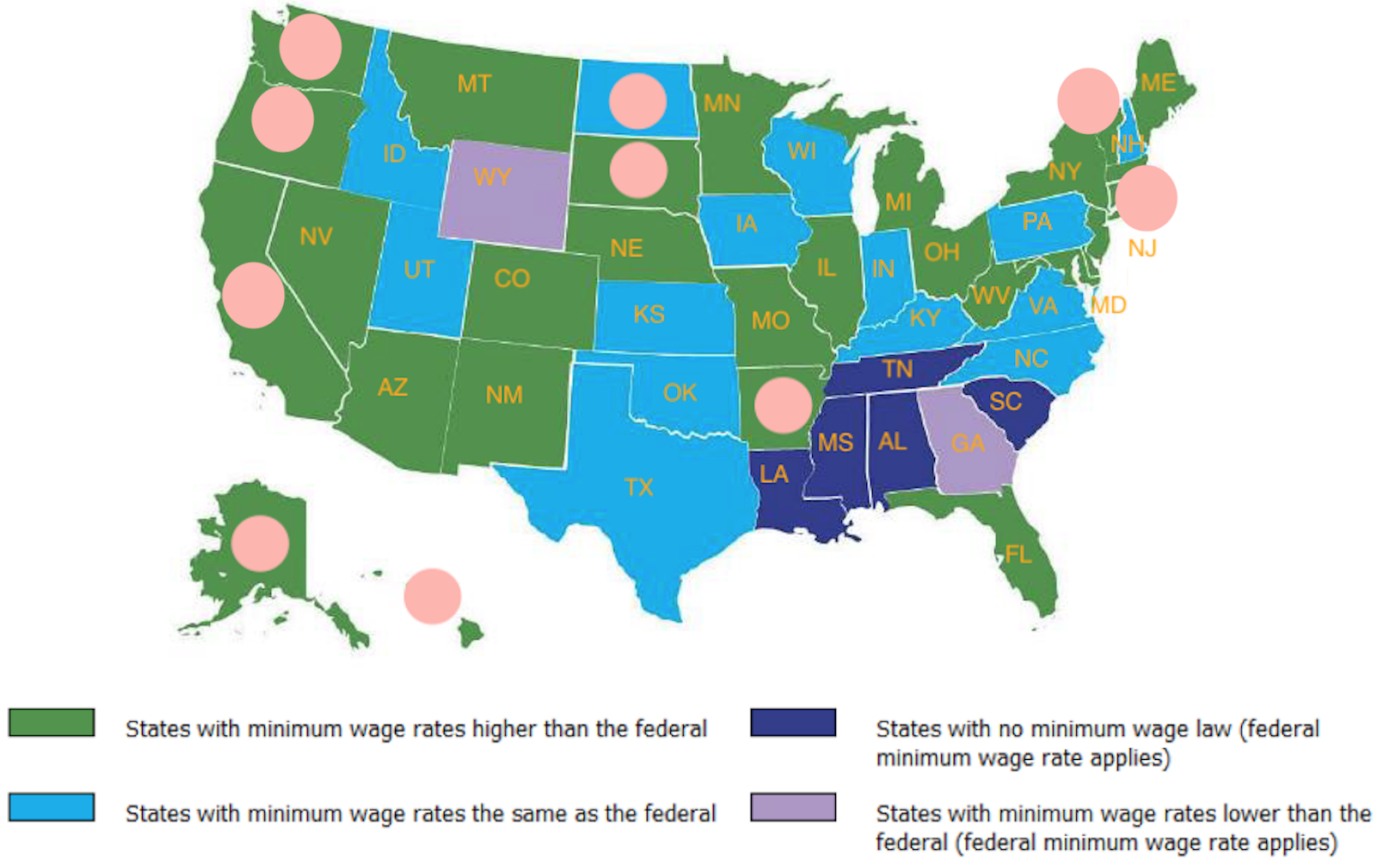
Because minimum wages are set at the state level, I assume they are exogenous to each county, and therefore assign each county that wage. In the case that it is overridden in a specific municipality, like Chicago, Illinois, or in Prince George's County, Maryland, I drop the entire county from the observations. Furthermore, I drop the states of Alaska and Hawaii for not having any neighbors. I also drop the states of California, Connecticut, Delaware, Oregon, Rhode Island, Vermont, Washington, and the District of Columbia for always having a minimum wage greater than the federal minimum wage throughout 2000 to 2016. Without an initial period where they were untreated and had only the federal minimum wage, they are not suitable for a difference-in-differences regression.

Table 0. County Level Summary Statistics (N=41091)

	Mean	Standard Deviation	Minimum	Maximum
Evictions	346.21	1389.45	0	42754
Eviction Rate	1.67	1.98	0	24.16
Eviction Filings	820.62	3918.1	0	116433
Eviction Filing Rate	3.17	4.82	0	83.73
Minimum Wage	6.45	1.12	5.15	11
Median Gross Rent	590.82	187.12	178.00	2001

Image 2. Minimum Wage Laws as of Jan 1st, 2017[7]

Pink circles are placed over states, or a cluster of, that are no longer assessed for parallel trends or minimum wage comparisons. This is an annotated image from the Wage and Hour Division of the Department of Labor.



[7] "Minimum Wage Workers in North Carolina – 2016 : Southeast Information Office." U.S. Bureau of Labor Statistics. U.S. Bureau of Labor Statistics, May 19, 2017. https://www.bls.gov/regions/southeast/news-release/minimumwageworkers_north-carolina.htm.

4. Methodology and Model

The methodology is an empirical analysis using a difference-in-differences approach to measure the effect of minimum wage increases on eviction rates across counties, assuming that the minimum wage as a state-level decision is an exogenous change for each county. The treated group will be states that had the same minimum wage as the federal government in a first period, then enacted a greater minimum wage in a second period. The control group will be states that do not have a minimum wage superior to the federal minimum wage in either the first or second period.

I began by finding clusters of states that were geographically nearby each other where one increased its minimum wage and its neighbors did not. Sometimes neighboring states both increased their minimum wage in the same year, in which case I put all county observations into the treated category. I found a total of 15 potential neighbor-based case studies. Then, I collected all states which had first increased their minimum wage in the same year together. These had the benefit of larger samples, and likelihood of only having a minimum wage in common. These would be the time-based case studies, dependent on when they started increasing their minimum wages. I found eight options, for a total of 23 potential case studies.

One key assumption is that the treated and control groups of states would have similar trends in eviction rates before any state implemented a minimum wage greater than the federal level. To assess for parallel trends, I restrict the eviction rate data to the pre-intervention period when states did not have their own minimum wage policy. Then, I used two methods on all potential case studies, where one state or group of states increased their minimum wage while another group of states did not. First, I plotted fitted time trends, distinguishing treated and

untreated groups. These graphs are included in the Appendices C-H, as the second image for each of the five remaining case studies. This method simplifies the data, allowing for a linear comparison of eviction rates across time. From a quick glance, it facilitates eliminating case studies that very obviously do not have parallel trends.

The second method to evaluate parallel trends is by plotting the means of treated and untreated groups' eviction rates by each year. These graphs are included for reference in the Appendices C-H, as the third image for each of the five remaining case studies. This method has the benefit of providing more detail on the trends, demonstrating that the parallel trends assumption is rarely perfectly met. Were I to rely upon this method for this thesis, I would only keep the Wisconsin and Minnesota case study as the closest to having treated and untreated groups moving in perfect lockstep.

For the purpose of this thesis, I do include the case studies that satisfied only the first method to assess parallel trends. One reason is because other case studies are centered in different regions of the United States or have significantly more observations. Another is that the bar for the second method may be too high. Finally, they may still contribute to a broader understanding of the minimum wage's impact on the eviction rate.

The next two case studies are time-based, as in, dependent on when the minimum wage first increased. A group of states that increase their minimum wage is compared to the group of states that de facto have no minimum wage policy. This latter group includes Alabama, Louisiana, Mississippi, South Carolina, Tennessee, Georgia, Idaho, Indiana, Kansas, Oklahoma, Texas, Utah, Virginia, and Wyoming. South Carolina and Oklahoma were dropped in order to better fit the parallel trends assumption before the years of a minimum wage change. Even so,

these case studies have the most observations, by virtue of how many states are involved. They appear to satisfy the parallel trends assumption before the year of increase, regardless of how geographically close the treated states are to the control group. Because the federal minimum wage increases in the years 2007 to 2010, I also run alternate regressions wherein those years are dropped from the sample.

I. Basic Difference-in-Differences: the Effect of Enacting A Minimum Wage Policy

$$EVICTIONRATE_{ist} = \beta_0 + \beta_1 Time + \beta_2 Treated + \beta_3 Time * Treated + \varepsilon_{ist}$$

Where $EVICTIONRATE_{iy}$ is the eviction rate in county i in state s in year t. Time is an indicator variable that equals 0 if year t of the observation is before the treated state increased its minimum wage beyond that of the federal government, and 1 if year t is greater than or equal to the year of treatment.. β_1 measures the time trend, which is the difference in eviction rates between before and after treatment in the control group. This is unrelated to the intervention Treated is an indicator variable that equals 1 if the state *s* does implement a minimum wage greater than the federal minimum, and equals 0 if the state does not, regardless of the level of the state's minimum wage. β_2 thus measures the difference in outcome between the treated and control groups before treatment.

The interaction term of Time*Treated allows for us to isolate the impact of the minimum wage policy on the eviction rate, independent of the time trend or the latent differences between the treated and control group. β_3 therefore measures the impact of a minimum wage policy on a county's eviction rate.

This model is the simplest, indicating only the presence of a meaningful state minimum wage policy. However, its results could be mistakenly attributed, for any policy that a treated state enacted that the control states did not, at the year dividing the treatment and control periods. For example, perhaps Florida enacted another policy in 2005 that Georgia and Tennessee did not, and that policy caused an increase or decrease in eviction rates.

Thus, two alternative models help answer the question of a minimum wage policy's impact on the eviction rate. One accounts for differences in the intensity of treatment, and the other accounts for differences in the timing of the treatment.

II. Difference-in-Differences with Variable Treatment Intensity

$$EVICTIONRATE_{ist} = \beta_0 + \beta_1 Time + D_2 STATE + \beta_3 (Time * minwage_{st}) + \varepsilon_{ist}$$

Where *minwage* is a continuous variable, and *STATE* is a state dummy identifying each state. This regression follows the model of Acemoglu, Autor, and Lyle (2004), where the authors estimate the impact of higher mobilization rates during World War II on female labor supply. The state dummies serve in place of a treated dummy, in accounting for the latent differences between the treated and control states before treatment.

The variable *minwage* serves in place of a Treated dummy, and is measured as the percent deviation from the federal minimum wage. If the state does not have a greater minimum wage than the federal government, then there is 0% deviation and thus, no treatment. The coefficient β_3 thus estimates whether states with higher minimum wages see a greater change in eviction rates after a minimum wage implementation. When *Time* equals zero for all years besides treatment, β_3 isolates the impact of the minimum wage after treatment.

III. Multiple post intervention periods

$$EVICTIONRATE_{ist} = \beta_0 + \beta_1 PrePost + \beta_2 Treated + \beta_3 Treated * PrePost + \varepsilon_{ist}$$

The final specification modifies model I by differentiating treated periods for each subsequent minimum wage increase using *PrePost*, a time dummy variable for each year the treated state increases its minimum wage. Theory suggests that effects on the eviction rates would be greater in latter years, as states keep increasing their minimum wage. Using *PrePost* also allows us to see how the effect persists over time. β_1 continues to demonstrate the time trend, in mean differences in the eviction rate between the various time periods in the control group. β_3 shows the effect of the minimum wage policy, not level, for each time period. This is useful to see if there are any lags in the effects of a minimum wage policy.

5. Results

For the model II results, I drop the state dummies from the following tables. As they illustrate the latent differences between states before any minimum wage increase, they do not seem relevant. For the model III results, I only include the interaction terms that demonstrate the impact of a minimum wage policy on each time period it was increased.

5.1 Neighbor Based Case Studies

Florida

Florida first increased its minimum wage in 2005 from $5.15 to $6.15, and continued to increase it every year thereafter. The year of 2010 was the only subsequent time that Florida matched the federal minimum wage at a rate of $7.25 per hour. Out of its four closest neighbors, Georgia and Tennessee best satisfied the parallel trends assumption.

Years after 2006 may have a skewed effect on results because of the recession or because the federal minimum wage increases during the years of 2007 to 2010. In case those would be issues, I drop observations for all states after 2006 in alternate regressions I.a and II.a.

Table 1. Florida I and II Results

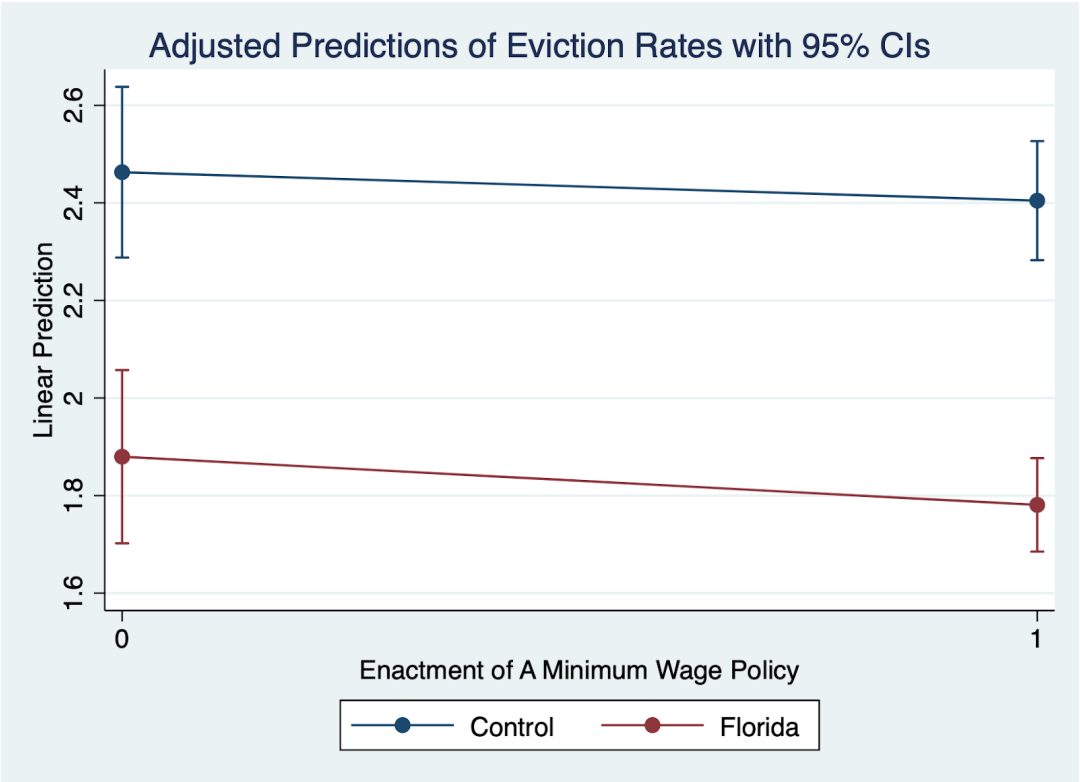
	I	I.a	II	II.a
Time	-0.0583	0.389*	-0.154	0.348*
	(-0.54)	(2.02)	(-1.66)	(2.22)
Treated	-0.583***	-0.583***		
	(-4.59)	(-4.58)		
Difference-in-Differences	-0.0404	-0.212		
	(-0.27)	(-0.83)		
Percent Deviation			0.650	-1.017
			(0.54)	(-0.59)
Constant	2.463***	2.463***	1.872***	1.886***
	(27.60)	(27.58)	(14.65)	(11.28)
N	4215	1738	4215	1738
R^2	0.009	0.012	0.045	0.051

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

I. The time coefficient of -0.058 is the measured difference in outcome between before and after in the control group, and the treated coefficient of -.583 is the measured difference in outcome

between treated and control groups before treatment. Neither of these variables holds any interest in this study, they just describe underlying differences regardless of an intervention. The difference-in-differences coefficient of -0.040 suggests that having a minimum wage policy would reduce a county's eviction rate (%) by 0.040 percentage points, holding all else equal. This is significantly smaller than the treated coefficient, so magnitude wise it is practically irrelevant. Moreover, it is insignificant. In comparison, the alternate regression I.a has a more substantive difference-in-differences coefficient of -0.212, but this is also not significant.

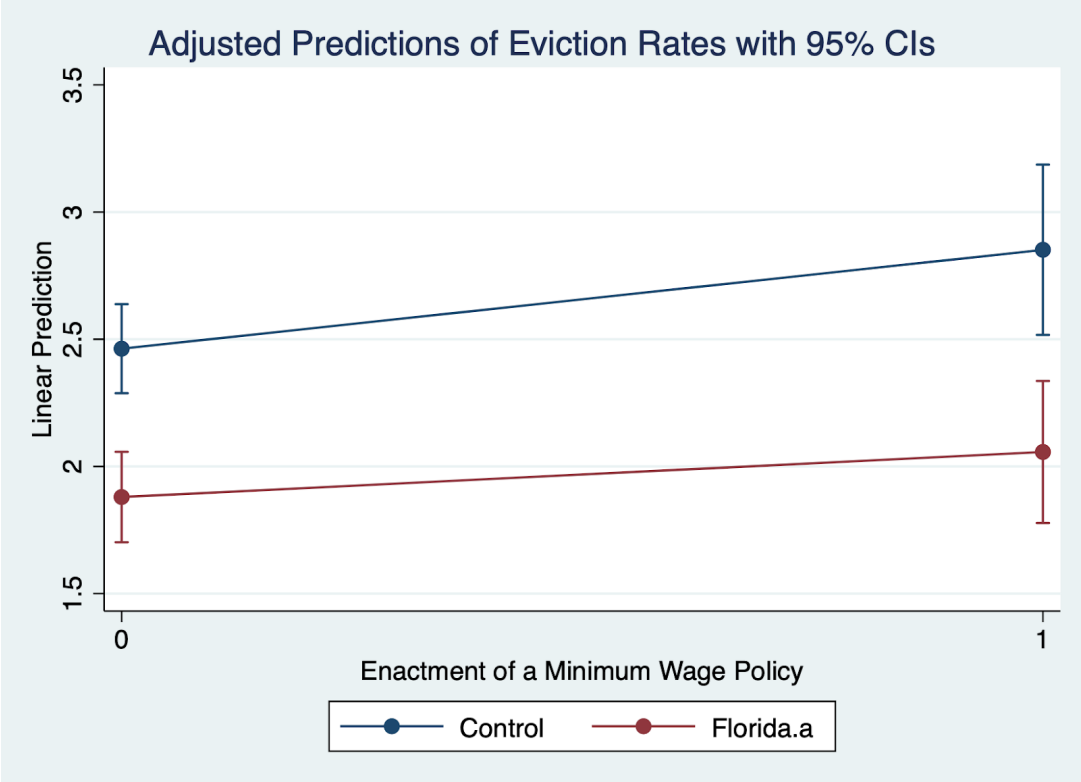
Figure 1. Predicted I Eviction Rates for Florida Case Study



This graph shows the results of the I regression, in the expected value of eviction rates in each combination of treatment or control and before or after. The expected eviction rate is lower for both the control (an expected decrease in the eviction rate of 0.058 percentage points) and treated

group (an expected decrease of .099 percentage points) after intervention than before, but the treated group has a larger decrease. These are small changes, even for the eviction rate whose mean is 1.67%. Moreover, the confidence intervals for these four measures includes zero, so the minimum wage in Florida may have led to an increase in eviction rates relative to its control states.

Figure 1.a Predicted I.a Eviction Rates for Florida Case Study



I.a In comparison, the alternate sample shows a more muted increase in eviction rates in Florida compared to a sharper rise in the control states. More generally, the alternate sample has more significant results and a higher R-squared despite having fewer observations. This suggests that the recession years and federal minimum wage increase did muddy results.

II. The continuous difference-in-differences results suggests that increasing the deviation of the state minimum wage from the federal minimum wage would increase eviction rates by 0.65 percentage points. This is a much larger magnitude than in the simple policy difference-in-differences results. However, the result is not significant. Although the coefficient of the alternate sample is negative and even larger in magnitude, it too is also insignificant.

Table 2. Florida III Results

	III	Florida Minimum Wage ($)
2005	-0.223	5.82
	(-0.50)	
2006	-0.194	6.4
	(-0.44)	
2007	-0.0072	6.67
	(-0.02)	
2008	0.0946	6.79
	(0.21)	
2009	0.211	7.23
	(0.47)	
2010	0.195	7.25
	(0.44)	
2011	0.0964	7.29
	(0.22)	
2012	-0.173	7.67
	(-0.39)	
2013	-0.157	7.79
	(-0.36)	
2014	-0.143	7.93
	(-0.32)	
2015	-0.0292	8.05
	(-0.09)	
Constant	2.463^{***}	
	(28.88)	
N	4215	
R^2	0.015	

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

III. Results using multiple post-intervention periods are insignificant. The majority of them are negative, but from 2008 to 2011 the impact of a minimum wage policy is suggested to increase eviction rates. Based on the improved fits with the alternate samples, it may be the case that these results are illegitimate because of the recession years.

Minnesota and Wisconsin

Both Minnesota and Wisconsin began increasing their minimum wage in the middle of 2005, and continued to increase it thereafter. In comparison, the control states of Missouri and Iowa began increasing their minimum wages in 2007. Thus, the post-intervention period is limited to 2005 and 2006. In comparison to Florida, the control group also later adopts a minimum wage. This is the only case study where every result is significant, and incidentally, is also the only case study that came close to satisfying the second method to assess parallel trends.

Table 3. Minnesota and Wisconsin I and II Results

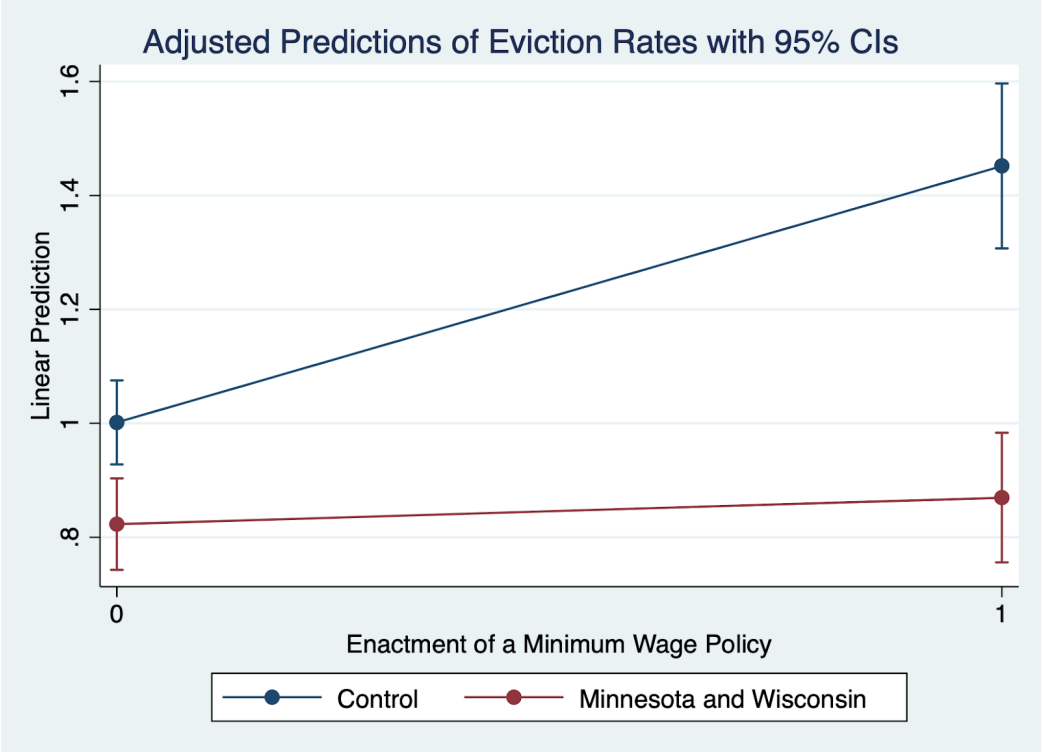
	I	II
Time	0.450^{***}	0.406^{***}
	(5.44)	(6.57)
Treated	-0.179^{**}	
	(-3.21)	
Difference-in-Differences	-0.404^{***}	
	(-3.70)	
Percent Deviation		-1.924^{**}
		(-3.03)
Constant	1.002^{***}	1.003^{***}
	(26.64)	(20.86)
N	2213	2213
R^2	0.035	0.105

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

I. The difference-in-differences coefficient of -0.404 is significant, and suggests that having a minimum wage policy would reduce a county's eviction rate by 0.4 percentage points, holding

all else equal. This is a substantive magnitude, when the average eviction rate is 1.67% with a standard deviation of 1.98%.

Figure 2. Predicted Eviction Rates for Minnesota and Wisconsin Case Study



The eviction rate for the control group, measured in %, is estimated to increase by 0.45 percentage points, with a confidence interval of 0.29 to 0.61 percentage points. The eviction rate for the treated group is estimated to increase, in comparison, only by 0.05, with a confidence interval of -0.09 to 0.19 percentage points. Even taking the smallest possible difference between the two, of 0.29 to 0.19, the eviction rate of the treated group still rises far less than that of the control group.

II. The second model results suggest that increasing the percent deviation of the state minimum wage from the federal minimum wage by one percent would decrease the eviction rate by 1.924 percentage points. This is both significant and substantive.

Table 4. Minnesota and Wisconsin III Results

	III
2005	-0.293*
	(-2.05)
2006	-0.512***
	(-3.62)
Constant	1.002***
	(26.15)
N	2213
R^2	0.036

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

III. Results using multiple post-intervention periods are significant and increasingly negative. Where Florida's post-intervention periods suggested attenuation, these mid-western states suggest exacerbation of the effects of the minimum wage over time on eviction rates. Then again, this could be due more to the magnitude of the change rather than the fact that there was one.

New Jersey and New York

Both New Jersey and New York began increasing their minimum wage in the middle of 2005, and continued to increase it thereafter. In comparison, the control state Pennsylvania only increased its minimum wage beyond the federal level during the recession years of 2007 to 2009. Thus, the post-intervention period is limited to 2005 and 2006, and the control group later adopts

a minimum wage, similarly to Wisconsin and Minnesota. However, this case study has the fewest number of observations.

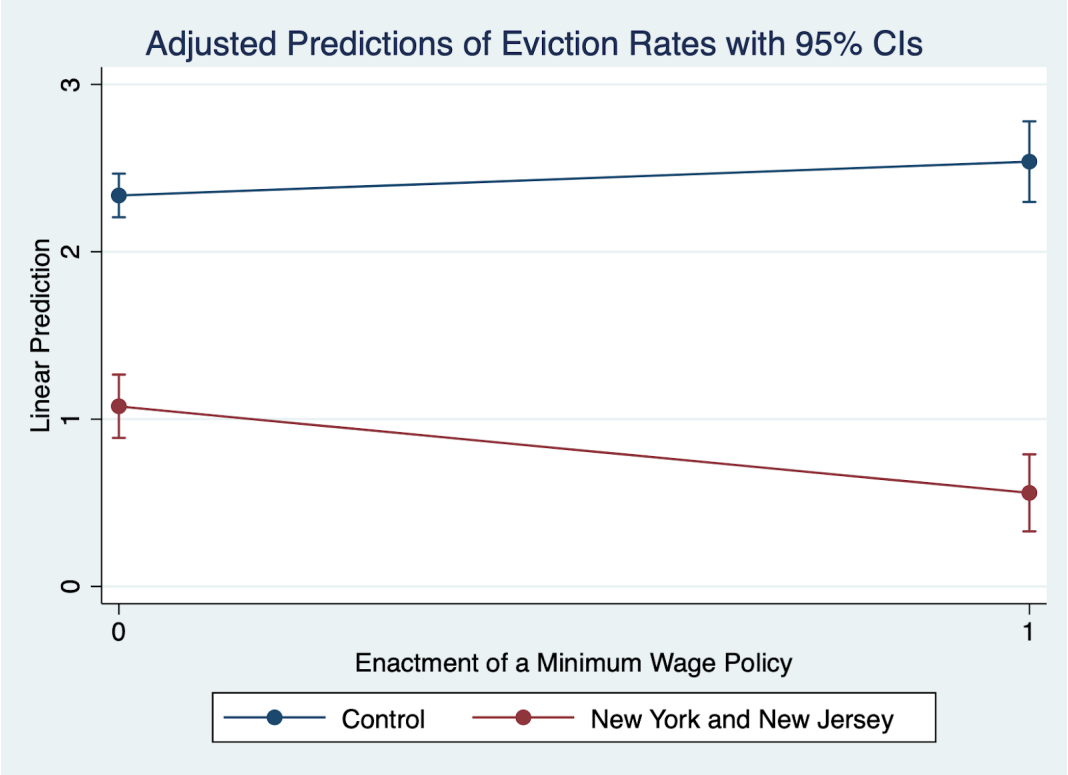
Table 5. New Jersey and New York I and II Results

	I	II
Time	0.202	0.00234
	(1.45)	(0.02)
Treated	-1.260***	
	(-10.77)	
Difference-in-Differences	-0.719***	
	(-3.49)	
Percent Deviation		-0.960
		(-1.11)
Constant	2.336***	2.394***
	(35.20)	(35.48)
N	723	723
R^2	0.254	0.252

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

I. The difference-in-differences coefficient of -0.719 is significant and substantive, and suggests that having a minimum wage policy would reduce a county's eviction rate by 0.719 percentage points, holding all else equal.

Figure 3. Predicted Eviction Rates for New Jersey and New York Case Study



The eviction rate for the control group, measured in %, is estimated to increase by 0.202 percentage points, with a confidence interval of -.072 percentage points to 0.476 percentage points. The eviction rate for the treated group, in contrast, is estimated to decrease by 0.517 percentage points, with a confidence interval of -0.815 to -0.220 percentage points. Even taking the smallest possible difference between the two, of -0.072 to -0.220, the eviction rate of the treated group still falls further than that of the control group.

II. Variable treatment intensity Difference-in-Differences Results are not significant. They would be negative and substantive, if they were, though. The minimum wages increased more than they did in Wisconsin and Minnesota, and the R-squared is higher, though. Perhaps it's because of the smaller sample size.

Table 6. New Jersey and New York III Results

	III
2005	-0.604*
	(-2.19)
2006	-0.855**
	(-3.18)
Constant	2.336***
	(34.31)
N	723
R^2	0.266

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

III. Results using multiple post-intervention periods are significant and increasingly negative, similarly to Minnesota and Wisconsin's results. In comparison to Florida, perhaps persistence is seen more noticeably when only examining the short run.

5.2 Time Based Case Studies

2006 : Michigan, Nevada, and West Virginia

Michigan, Nevada, and West Virginia began increasing their minimum wage in 2006, and generally continue to do so thereafter. West Virginia has a period where it stops increasing its minimum wage above the federal level, during the years 2010 to 2014. Because of this return to an "untreated" state, I run an alternate regression where observations from West Virginia, and observations during recession years 2007 to 2010, are dropped.

Table 7. 2006 I and II Results

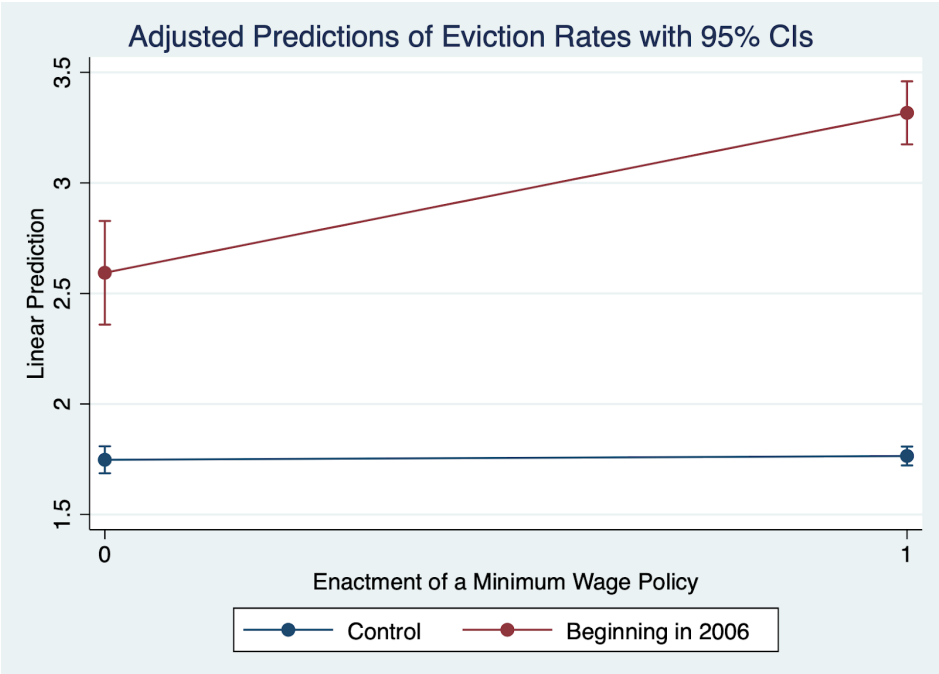
	I	I.a	II	II.a
Time	0.0172	0.0119	0.106**	0.0568
	(0.45)	[-0.0691,0.0930]	(3.24)	[-0.0151,0.129]
Treated	0.846***	1.629***		
	(6.85)	[1.306,1.953]		

Difference-in-Differences	0.706***	0.0819		
	(4.87)	[-0.322,0.486]		
Nominal Minimum Wage				
Percent Deviation			-0.461	-7.036***
			(-0.72)	[-9.219,-4.852]
Constant	1.748***	1.748***	1.080***	1.091***
	(56.11)	[1.687,1.809]	(16.10)	[0.942,1.239]
N	18481	13502	18481	13502
R^2	0.036	0.036	0.256	0.260

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

I. The difference-in-differences coefficient of 0.71 is significant and substantive, and suggests that having a minimum wage policy would increase a county's eviction rate by 0.71%, holding all else equal. This is a departure from previous case studies. As always, perhaps there is another policy that was enacted in only Michigan, Nevada, and West Virginia in 2006. However, the benefit to doing a time-based case study is that this possibility is more unlikely because these states are not geographically proximate to each other. However, the potential distortion in including recession years, which are also the years the federal government increased its minimum wage, in the sample. Even then, using the alternate sample, the results from I.a remain positive, though now insignificant and much smaller in magnitude.

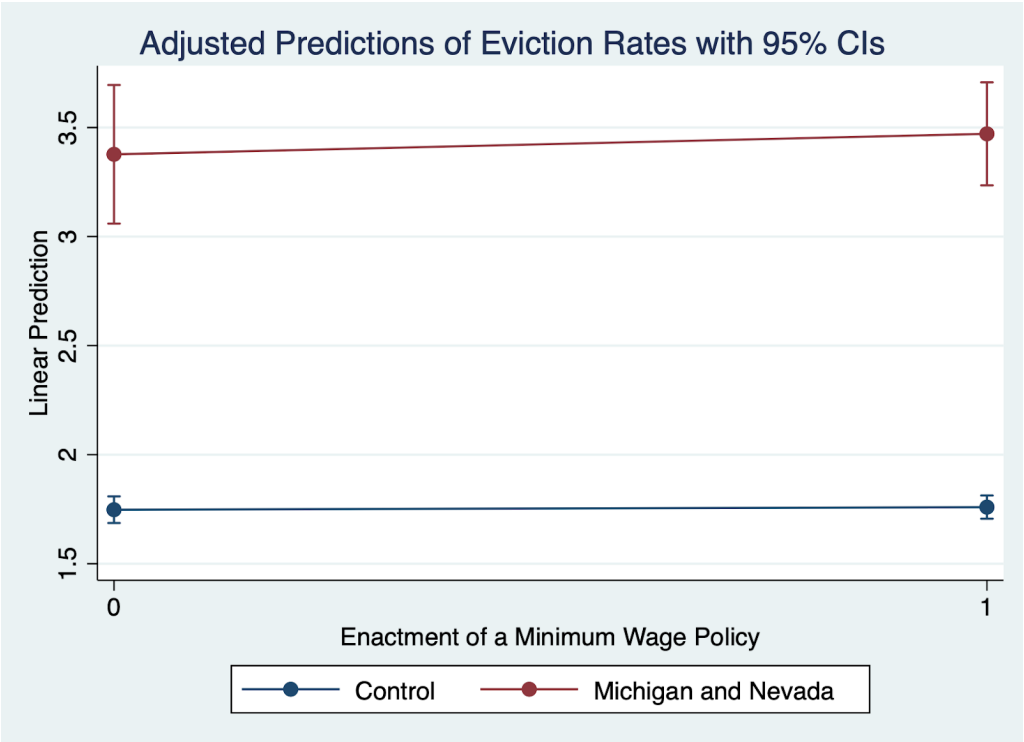
Figure 4. Predicted I Eviction Rates for 2006 Case Study



The eviction rate for the control group, measured in %, is estimated to increase by 0.0172 percentage points, with a confidence interval of -0.0573 to 0.0917. So many observations for the control group does put its expected eviction rate close to the mean of the entire data set, 1.67%.

The eviction rate for the treated group is estimated to increase, in comparison, by 0.723, with a confidence interval of 0.449 to 0.998. Even taking the smallest possible difference between the two, of 0.450 to 0.092, the eviction rate of the treated group still rises far above than that of the control group.

Figure 4.a Predicted I.a Eviction Rates for 2006 Case Study



The predicted eviction rate for the treated group observes less of a sharp increase without the complicated observations.

II. The variable treatment intensity difference-in-differences result is negative, though insignificant. The alternate sample II.a provides a result that is significant. It suggests that increasing the minimum wage by a Percent Deviation from the federal wage would lower the eviction rate by 7.036 percentage points. The latter number seems almost suspiciously substantive given the standard deviation of the eviction rate for the entire sample is 1.98%.

Table 8. 2006 III Results

	III
2006	0.534*
	(2.22)
2007	0.838***
	(3.55)

2008	1.027***
	(4.38)
2009	1.127***
	(4.86)
2010	0.947***
	(4.11)
2011	1.110***
	(4.84)
2012	1.049***
	(4.57)
2013	0.809***
	(3.51)
2014	0.492*
	(2.13)
2015	-0.0225
	(-0.10)
2016	-0.122
	(-0.53)
Constant	1.748***
	(55.52)
N	18481
R^2	0.040

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

III. Results using multiple post-intervention periods are most significant and positive during the years of 2007 to 2013. These are the years that are potentially concerning in terms of there being a federal wage increase and a reversion on West Virginia's part to the level of the federal wage. Moreover, as a de facto dummy for every year, this does not serve the interesting purpose of delineating each minimum wage increase. There are likely too many states involved in the treated group to run this cleanly.

2007 : Maryland, Missouri, Montana, Iowa, North Carolina, Ohio, Pennsylvania, Arizona, and Colorado

These states began increasing their minimum wage in 2007. Ohio, Montana, Arizona, and Colorado continue to have a higher minimum wage than the federal throughout the sample, apart from the unique instance where Colorado decreases its minimum wage from 2009 to 2010. The rest of the states, Maryland, Missouri, Iowa, North Carolina, and Pennsylvania have several year long periods after the recession where they do not increase their minimum wage above that set by the federal government. An alternate regression is done where these latter states are dropped, as are the years 2007-2010, where the federal government increases the minimum wage.

Table 9. 2007 I and II Results

	I	I.a	II	II.a
Time	-0.0401	-0.0611	-0.0137	-0.0571
	(-1.09)	[-0.141,0.0191]	(-0.58)	[-0.122,0.00731]
Treated	-0.0760	-0.258***		
	(-1.88)	[-0.364,-0.152]		
Difference-in-Differences	0.0934	0.0349		
	(1.83)	[-0.109,0.179]		
Percent Deviation			0.638	-0.0785
			(1.74)	[-1.704,1.547]
Constant	1.783***	1.783***	1.159***	1.149***
	(61.53)	[1.726,1.839]	(20.54)	[1.017,1.282]
N	25640	14918	25640	14918
R^2	0.000	0.002	0.252	0.260

t statistics in parentheses, 95% confidence intervals in brackets
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

I. The difference-in-differences coefficient is positive, but insignificant. I. The result from the alternate regression is also positive, though less so. It remains insignificant.

Figure 5. Predicted Eviction Rates for 2007 Case Study I

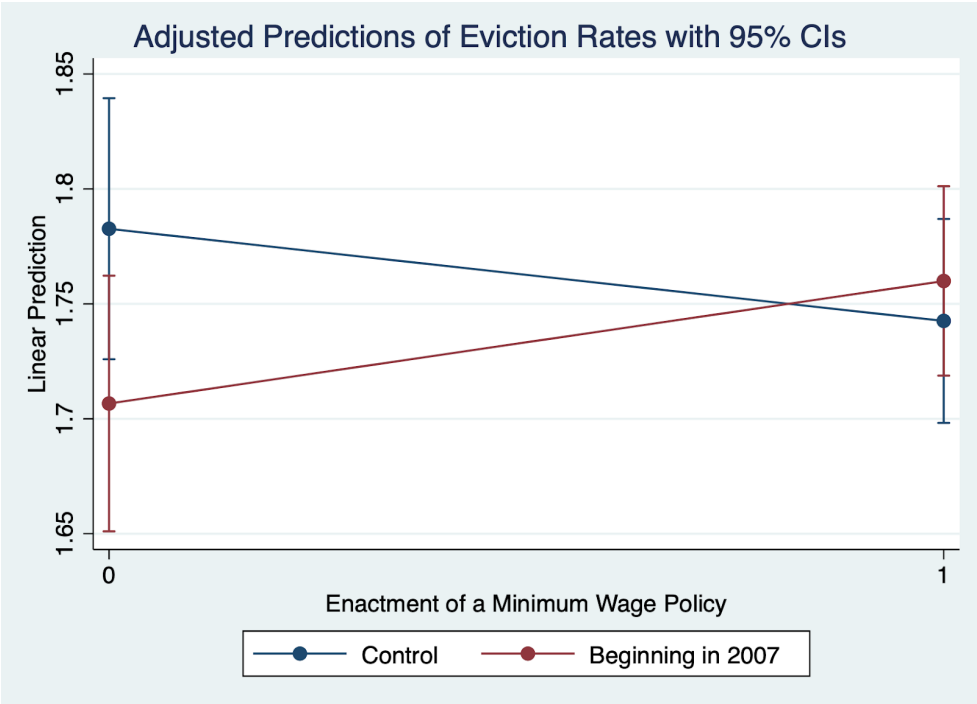
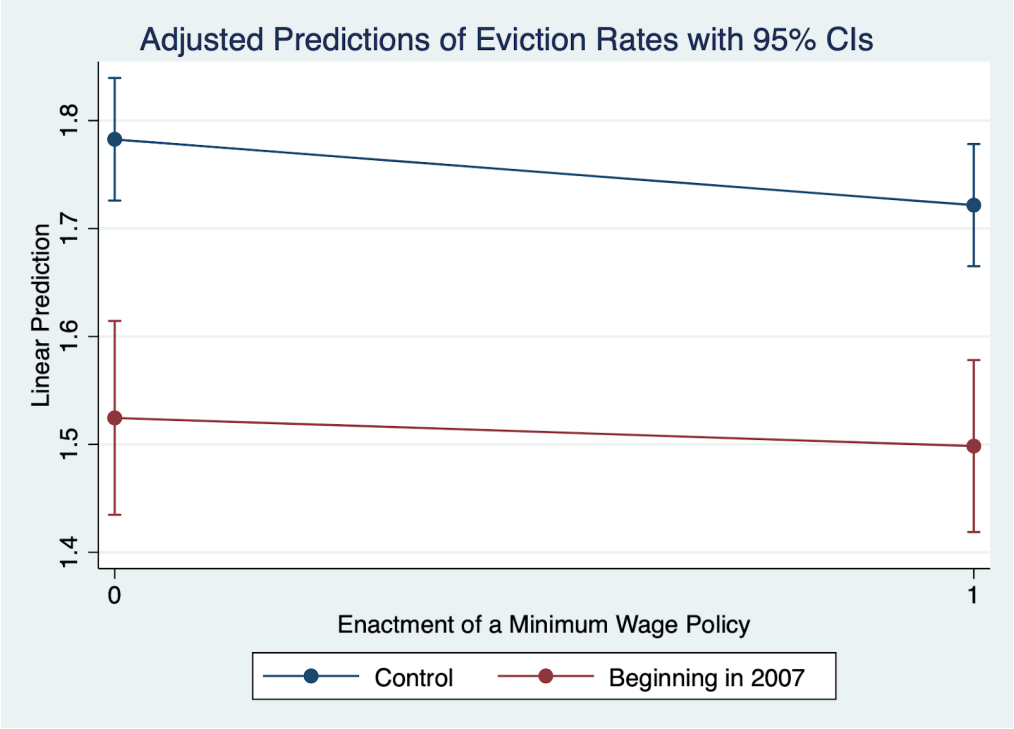


Figure 5.a Predicted Eviction Rates for 2007 Case Study



Visually, the results from the alternate regression differ substantially in terms of the change in the treated group. The control group should never see a change between the original and alternate regression.

II. The result from using the percent deviation from the minimum wage is large, positive, and insignificant. It suggests an increase in the eviction rate of 0.64 percentage points for a one percent increase in deviation from the federal minimum. The alternate regression goes negative, but only slightly and still insignificantly. For the 2007 case study, the variable treatment intensity is inconclusive.

Table 10. 2007 III Results

	III	III.a
2007	0.151	
	(1.28)	
2008	0.0938	
	(0.80)	
2009	0.165	
	(1.40)	
2010	0.226	
	(1.93)	
2011	0.0702	0.0777
	(0.60)	(0.43)
2012	-0.00990	-0.0422
	(-0.08)	(-0.23)
2013	-0.0636	0.0278
	(-0.54)	(0.15)
2014	0.0582	-0.0330
	(0.49)	(-0.18)
2015	0.103	-0.0123
	(0.87)	(-0.07)
2016	0.138	0.190
	(1.17)	(1.05)
Constant	1.783***	1.783***
	(70.18)	(66.63)

N	25640	14918
R^2	0.001	0.002

t statistics in parentheses
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

In each period of a minimum wage increase, which basically is again another time dummy, there is not a significant effect on the eviction rate. Moreover, the magnitudes are very small. Even limiting this to the alternate regression did not improve estimates in terms of significance much.

6. Limitations and Future Work

Future work could look further into alternate specifications. My results would be clearer if the eviction rate only included evictions due to rent delinquency and workers earning the or less than the minimum wage. This paper is limited to eviction rates and tests those parallel trends, but this assumption could also be examined for a dependent variable of eviction filing rates. Moreover, every observation is weighted the same, and improvements could be made to favor counties with large populations or high levels of poverty. Another possibility is to limit counties to those that do not border another state, just in case there are externality effects of one state's minimum wage increase on its neighbors. More interior counties should be insulated from these effects, and thus may demonstrate a more clear result on the impact of the minimum wage.

Moreover, these results do not account for how much of the population was affected, nor the price index for each area. If states decide to raise the minimum wage to reflect rising costs of living, then it would be beneficial to separate that from a price index. An increase in the amount of welfare, especially housing welfare or food stamps, that people receive would also

demonstrate the impact of increasing the budget constraint on tenants, without concerns of an employment effect. This may be even more relevant, because those who are the most evicted may not be working at all, and entirely dependent on welfare.

Another alternative specification could be to look at the effect of a minimum wage adjusted for the local cost of living, or an increase in the minimum tipped wage. If tipped workers working in the food industry are particularly prone to being evicted, and drive eviction rates more than workers living off of the minimum wage, then an increase in the tipped minimum wage may have a larger effect on eviction rates than an increase in the minimum wage.

Policy measures that would be of interest in examining evictions due to budget shocks would be unemployment or healthcare insurance expansions. Increasing unemployment or Medicaid would ease any sudden harsh budget shocks due to a loss of employment or medical bill. There is also the likely possibility that even if states had similar trends in welfare and landlord tenant laws before a minimum wage increase, they may have differed in such policy implementation in the treatment period. The quantity of welfare disbursed in a state, such as Medicaid or the Supplemental Security Income, may also have differential effects on the budget constraint of residents prone to eviction. An increase in welfare that low-income people receive could, theoretically, free them to spend more of their earnings on rent and therefore decrease the eviction rate. The Policy Surveillance Program at the Temple University Beasley School of Law provides a data set on landlord-tenant laws across states, but the data set begins after the end of the Eviction Lab data set. A more generous affordable housing policy would also be at the discretion of the state, and ideally, decrease the amount of evictions and housing insecurity. This also risks some endogeneity, though, if state governments implement these measures because of

the housing crisis. The same could be said of tenant protections, which also risk being difficult to quantify.

Demographic dummies may be interesting as a control variable, were they measured on a yearly basis, as a potential way to study further racial disparities in eviction rates. If it significantly changes across time, then it may also be indicative of migration patterns. That could have an increased rate on eviction just because the landlords are better able to replace tenants. However, this likely still differs from the state's population and better indicates the groups of people coming and going from the area.

7. Conclusion

Table 11. Summary of Results

	Difference-in-Differences	Percent Deviation
Florida	-0.0404	0.65
Florida.a	-0.212	-1.017
Minnesota + Wisconsin	-0.404***	-1.924**
New Jersey + New York	-0.719***	-0.96
2006	0.706***	-0.461
2006.a	0.0819	-7.036***
2007	0.0934	0.638
2007.a	0.0349	-0.0785

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Based on the case studies here, it seems as though the minimum wage as a policy has a net zero effect. The basic difference-in-differences model shows the impact of a minimum wage policy regardless of its magnitude, and has conflicting results in terms of increasing or

decreasing the eviction rate. In time-based case studies where it should be least likely that the dummy variable for treatment is confounded with another policy, the results are positive, though these results may also be due to other complications with regards to the recession right after 2006 and 2007. This may be because the minimum wage as a policy really does increase eviction rates. The simple difference-in-differences model does not provide a confident estimate.

The results from the continuous variable difference-in-differences, however, more strongly suggest that increasing the minimum wage, as a percent deviation from the federal minimum, would decrease eviction rates. This is especially the case when removing those tumultuous years from the observations, but even in neighbor based studies, the results are largely negative, ranging from an insignificant 0.65 percentage point increase to a significant 1.9 percentage point decrease. This suggests that increasing the minimum wage assists low-income people in not getting evicted. The exact mechanism, in terms of higher employment or utter exclusion from the private rental market, is unclear.

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Appendix

A. American Housing Survey : Delinquent Payments and Notices

	2013	2017
Total Renter Occupied Units	40,201	43,993
Rent Payment Activity in Last Three Months: 1		
Paid all the rent	34,394	37,770
Unable to pay all or part of the rent	2,479	2,773
Number of missed or partial rent payment(s):		
1 month	1,227	1,429
2 months	590	581
3 months	589	659
Not reported	73	104
No cash rent	1,791	1,961
Not reported	1,537	1,489
Eviction Notice in Last Three Months1		
Threatened with eviction notice:		
Yes	704	806
Reason for threat of eviction:		
Failure or inability to pay rent	525	S
Other violation of lease	22	S
Landlord wants to use unit for another tenant or purpose	15	S
Building condemned or due to be demolished	3	S
Landlord foreclosed on	17	S
Other	119	S
Not reported	3	.
Received court ordered eviction notice:		

Yes	148	162
No	556	643
Not reported	.	S
No	37,960	41,697
Not reported	1,537	1,490
Likelihood of leaving home within two months due to eviction:2		
Very likely	542	308
Somewhat likely	2,359	2,980
Not very likely	35,708	39,183
Not reported	1,593	1,522
Where the household would move in the event of eviction:2		
New home	22,913	24,944
Family member's home	9,432	10,560
Friend's home	3,323	3,624
Household members would move to different places	559	810
Shelter	1,072	1,338
Not reported	2,903	2,717

[Estimates and Margins of Error in thousands of housing units, except as indicated. Medians are rounded to four significant digits as part of disclosure avoidance protocol. Margin of Error is calculated at the 90% confidence interval. Weighting consistent with Census 2010. Blank cells represent zero; Z rounds to zero; '.' Represents not applicable or no cases in sample; S represents estimates that did not meet publication standards or withheld to avoid disclosure]

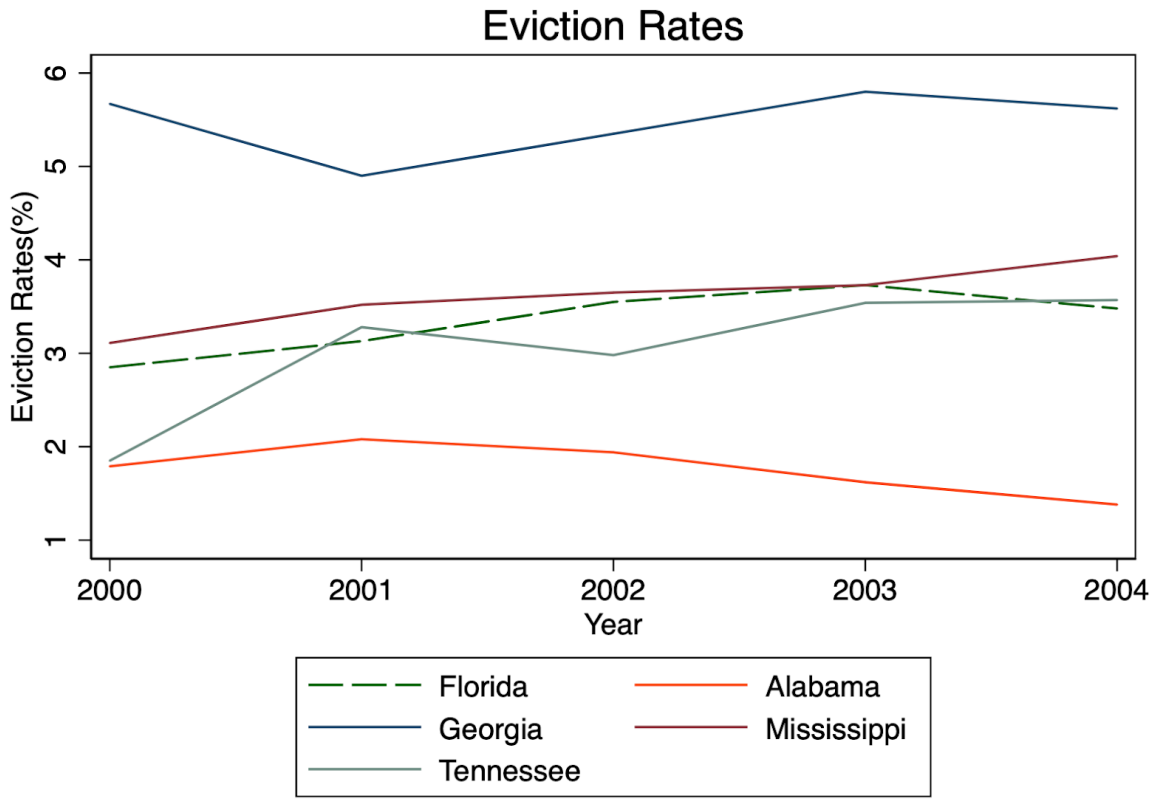
1. Delinquent payment questions were asked in regard to the respondents current home.
2. Asked of all renter-occupied units, even those that had not received an eviction notice.
Source: U.S. Census Bureau, American Housing Survey.

B. State Minimum Wages

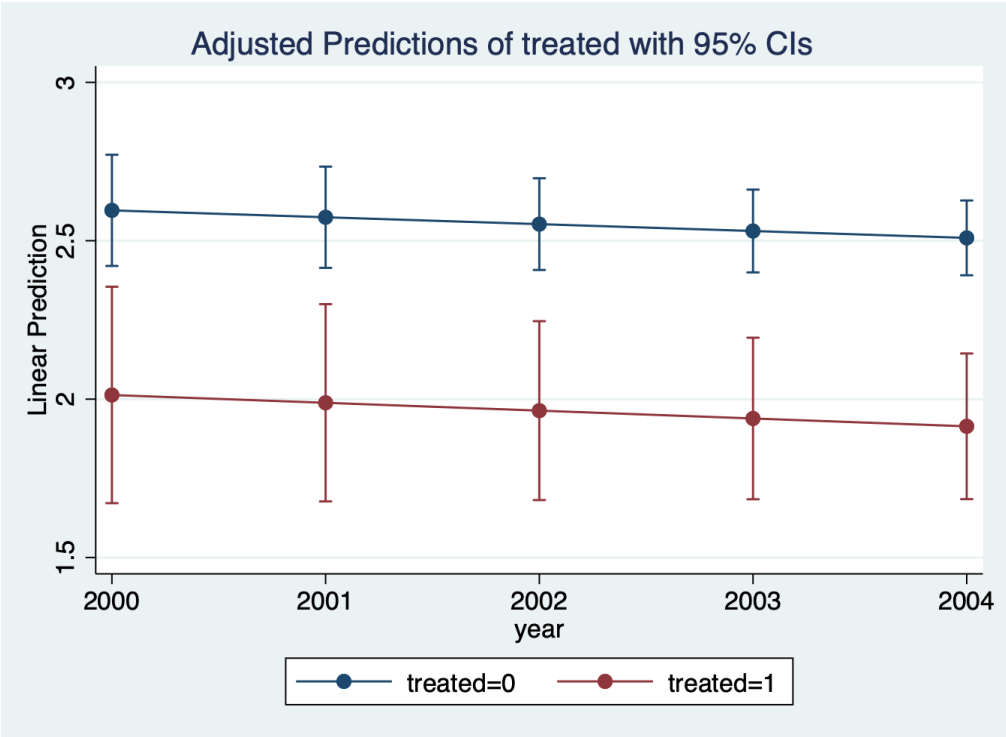
State	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Federal (FLSA)	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Alabama	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Arizona	5.15	5.15	5.15	5.15	5.15	5.15	5.15	6.75	6.9	7.25	7.25	7.35	7.65	7.8	7.9	8.05	8.05
California	5.75	6.25	6.75	6.75	6.75	6.75	6.75	7.5	8	8	8	8	8	8	8.50410	9	10
Colorado	5.15	5.15	5.15	5.15	5.15	5.15	5.15	6.85	7.02	7.28	7.25	7.36	7.64	7.78	8	8.23	8.31
Connecticut	6.15	6.4	6.7	6.9	7.1	7.1	7.4	7.65	7.65	8	8.25	8.25	8.25	8.25	8.7	9.15	9.6
Delaware	5.7756830	6.15	6.15	6.15	6.15	6.15	6.15	6.65	7.15	7.15	7.25	7.25	7.25	7.25	7.54315	8.043150	8.25
Florida	5.15	5.15	5.15	5.15	5.15	5.8184931	6.4	6.67	6.79	7.227643	7.25	7.285	7.67	7.79	7.93	8.05	8.05
Georgia	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Hawaii	5.25	5.25	5.75	6.25	6.25	6.25	6.75	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.75	8.5
Idaho	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Illinois	5.15	5.15	5.15	5.15	5.5	6.5	6.5	7.0041095	7.625683	7.876027	8.1260	8.25	8.25	8.25	8.25	8.25	8.25
Indiana	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Iowa	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.9410958	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Kansas	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Kentucky	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.51246575	6.201912	6.902876	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Louisiana	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Maine	5.15	5.15	5.75	6.25	6.2751	6.3878082	6.5630136	6.8130136	7.062841	7.313013	7.5	7.5	7.5	7.5	7.5	7.5	7.5
Maryland	5.15	5.15	5.15	5.15	5.15	5.15	5.15	6.15	6.327049	6.858767	7.25	7.25	7.25	7.25	7.25	8.25	8.75
Massachusetts	6	6.75	6.75	6.75	6.75	6.75	6.75	7.5	8	8	8	8	8	8	8	9	10
Michigan	5.15	5.15	5.15	5.15	5.15	5.15	5.6036986	7.0508219	7.275683	7.4	7.4	7.4	7.4	7.4	7.65068	8.15	8.5
Minnesota	5.15	5.15	5.15	5.15	5.15	5.5691780	6.15	6.15	6.325956	6.858767	7.25	7.25	7.25	7.25	7.56438	8.419178	9.209016
Mississippi	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Missouri	5.15	5.15	5.15	5.15	5.15	5.15	5.15	6.5	6.65	7.05	7.25	7.25	7.25	7.35	7.5	7.520547	7.65
Montana	5.15	5.15	5.15	5.15	5.15	5.15	5.15	6.15	6.381967	7.054383	7.25	7.35	7.65	7.8	7.9	8.05	8.05
Nebraska	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	8	9
Nevada	5.15	5.15	5.15	5.15	5.15	5.15	5.2431506	6.24073972	6.5914207	7.202876	7.9028	8.25	8.25	8.25	8.25	8.25	8.25
New Hampshir	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.75	7.25	7.25	7.25	7.25	7.25	7.25	7.25	7.25
New Jersey	5.15	5.15	5.15	5.15	5.15	5.4020547	6.4020547	7.15	7.15	7.194109	7.25	7.25	7.25	7.25	8.25	8.38	8.38
New Mexico	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.521994	7.5	7.5	7.5	7.5	7.5	7.5	7.5	7.5
New York	5.15	5.15	5.15	5.15	5.15	6	6.75	7.15	7.15	7.194109	7.25	7.25	7.25	7.252054	8.00205	8.750684	9.001912
North Carolina	5.15	5.15	5.15	5.15	5.15	5.15	5.15	6.15	6.325956	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Ohio	5.15	5.15	5.15	5.15	5.15	5.15	5.15	6.85	7	7.3	7.3	7.4	7.7	7.85	7.95	8.1	8.1
Oklahoma	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Oregon	6.5	6.5	6.5	6.9	7.05	7.25	7.5	7.8	7.95	8.4	8.4	8.5	8.8	8.95	9.1	9.25	9.75
Pennsylvania	5.15	5.15	5.15	5.15	5.15	5.15	5.15	6.25	7.15	7.194109	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Rhode Island	5.8166666	6.15	6.15	6.15	6.75	6.75	7.0434246	7.4	7.4	7.4	7.4	7.4	7.4	7.75	8	9	9.6
South Carolina	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Tennessee	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Texas	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Utah	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Vermont	5.75	6.25	6.25	6.25	6.75	7	7.25	7.53	7.68	8.06	8.06	8.15	8.46	8.6	8.73	9.15	9.6
Virginia	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Washington	6.5	6.72	6.9	7.01	7.16	7.35	7.63	7.93	8.07	8.55	8.55	8.67	9.04	9.19	9.32	9.47	9.47
West Virginia	5.15	5.15	5.15	5.15	5.15	5.15	5.5028767	6.2028767	6.901912	7.25	7.25	7.25	7.25	7.25	7.25	8	8.75
Wisconsin	5.15	5.15	5.15	5.15	5.15	5.4724657	6.1690410	6.5	6.5	6.830821	7.25	7.25	7.25	7.25	7.25	7.25	7.25
Wyoming	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.45876712	6.1579234	6.8587671	7.25	7.25	7.25	7.25	7.25	7.25	7.25

C. Florida Case Study Parallel Trends Check

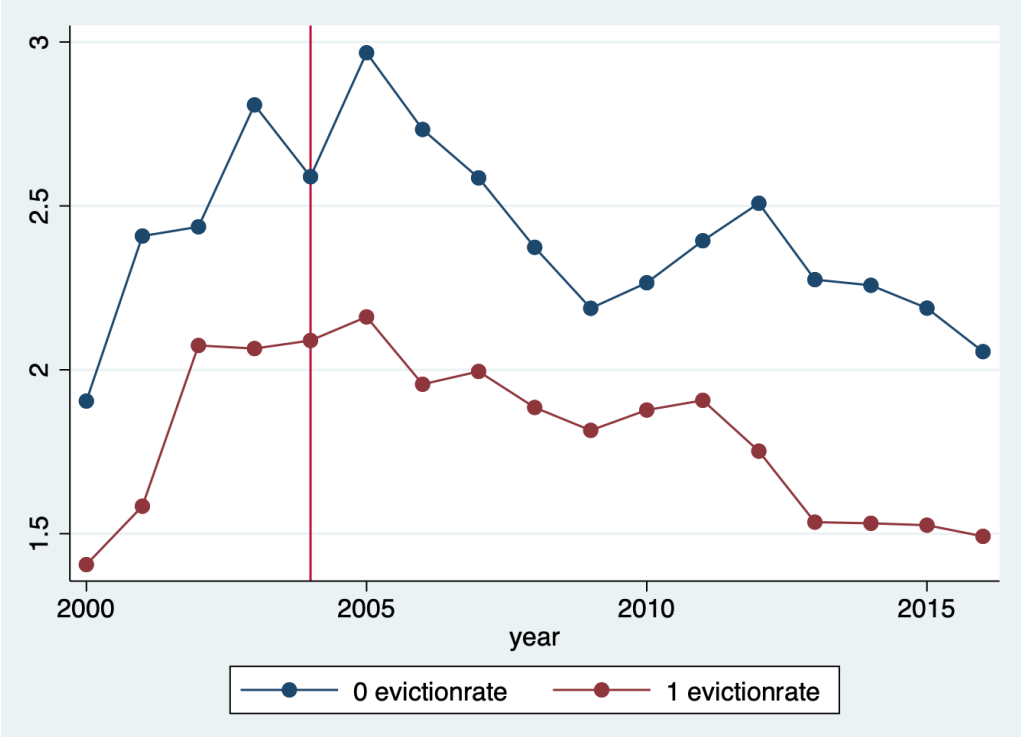
C.1 Eviction Rates in Control and Potential Treated States - State Level Data



C.2 Fitted Trends Comparison - County Level Data

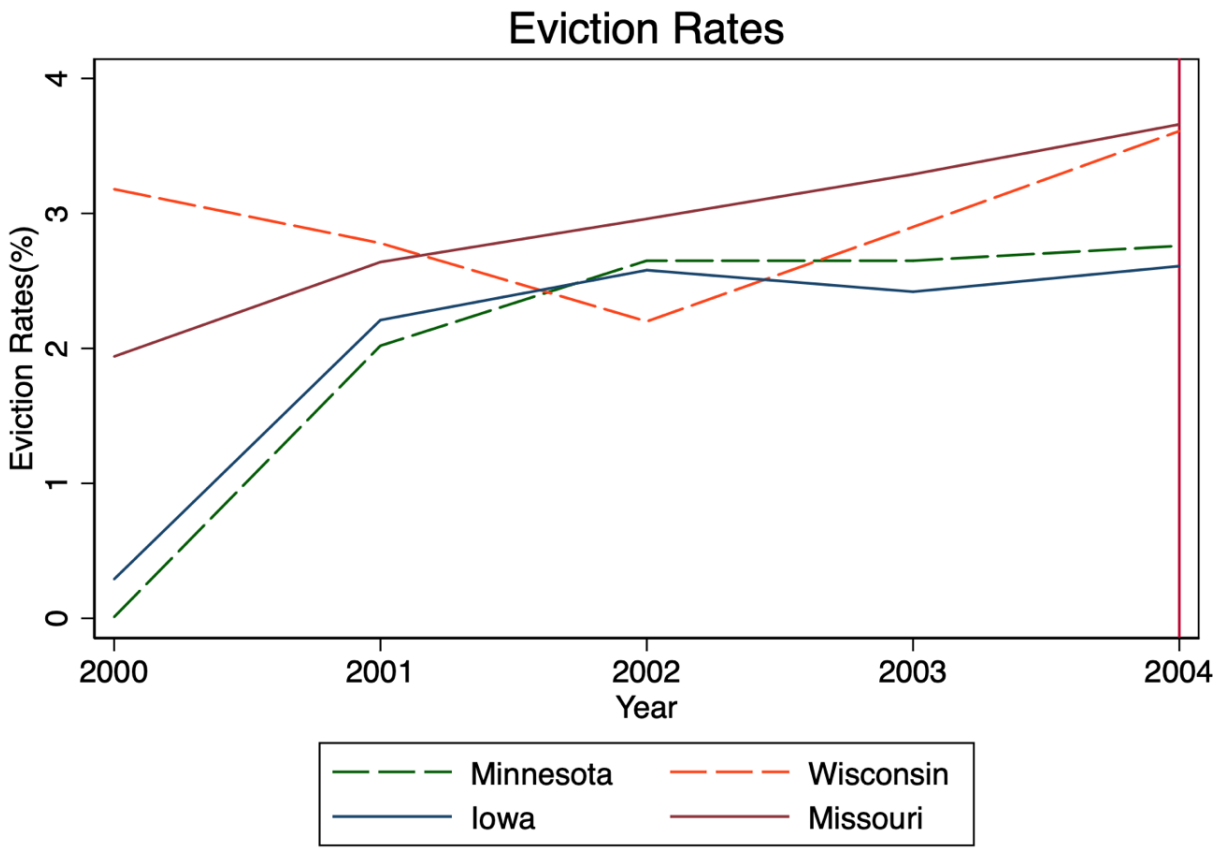


C.3 Plot of Group Means over Years - County Level Data

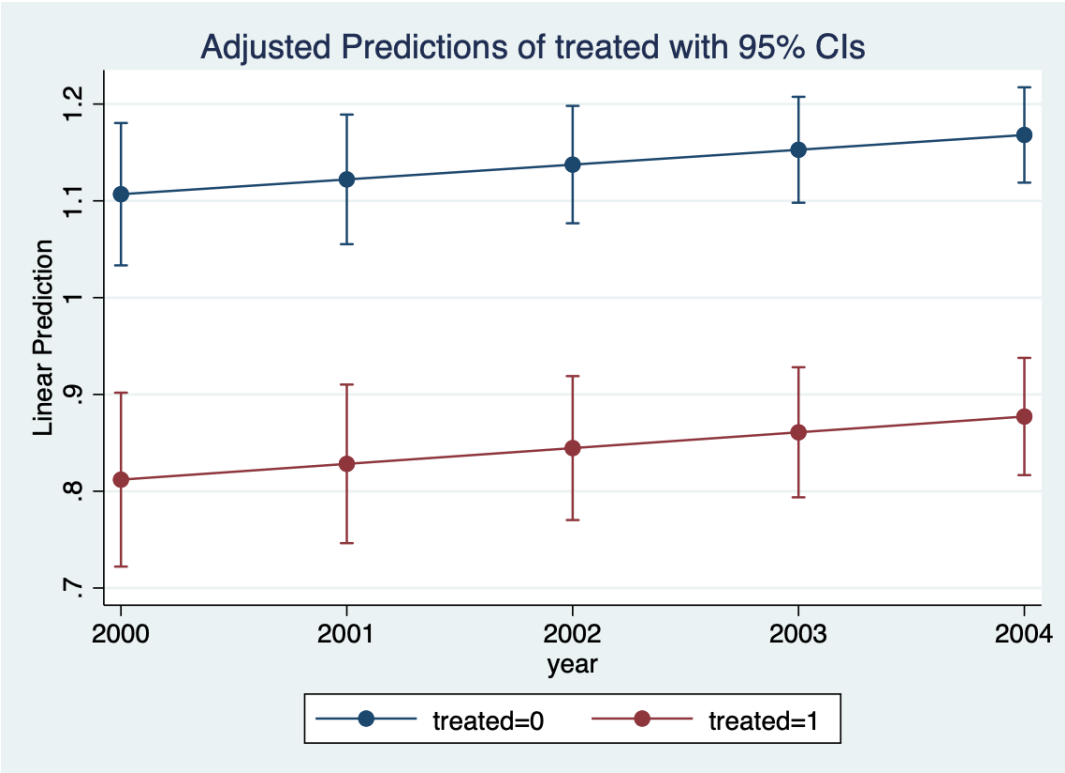


D. Minnesota and Wisconsin Case Study Parallel Trends Check

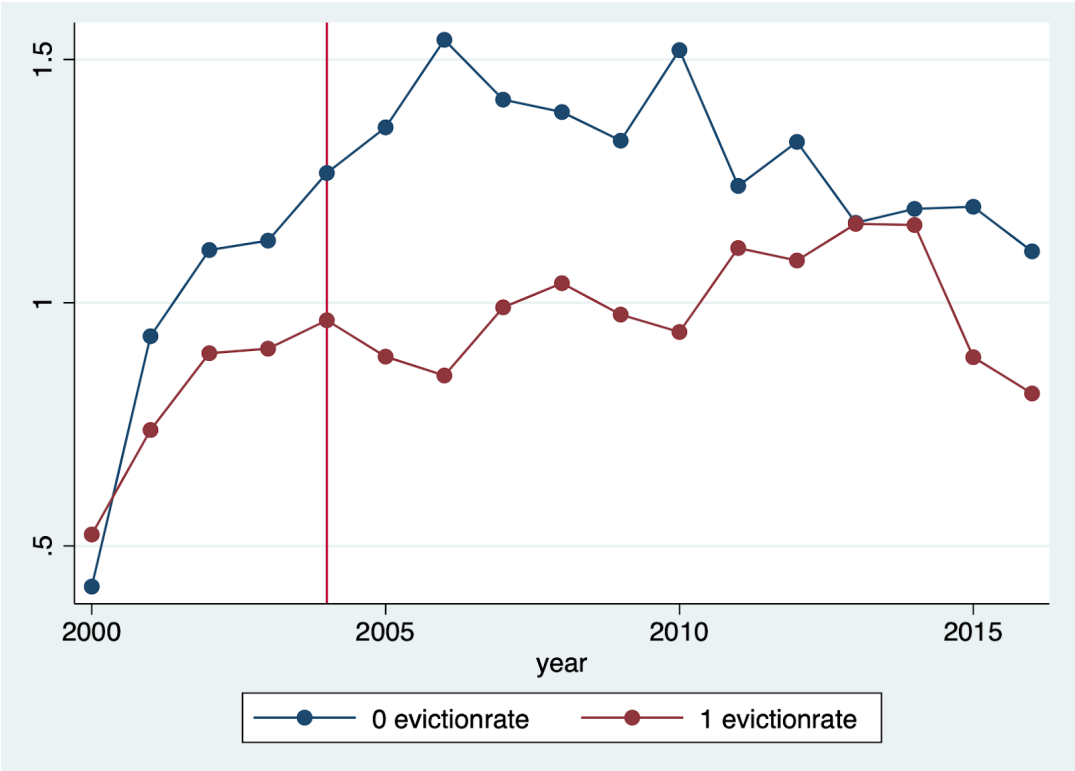
D.1 Eviction Rates in Control and Potential Treated States - State Level Data



D.2 Fitted Trends Comparison - County Level Data

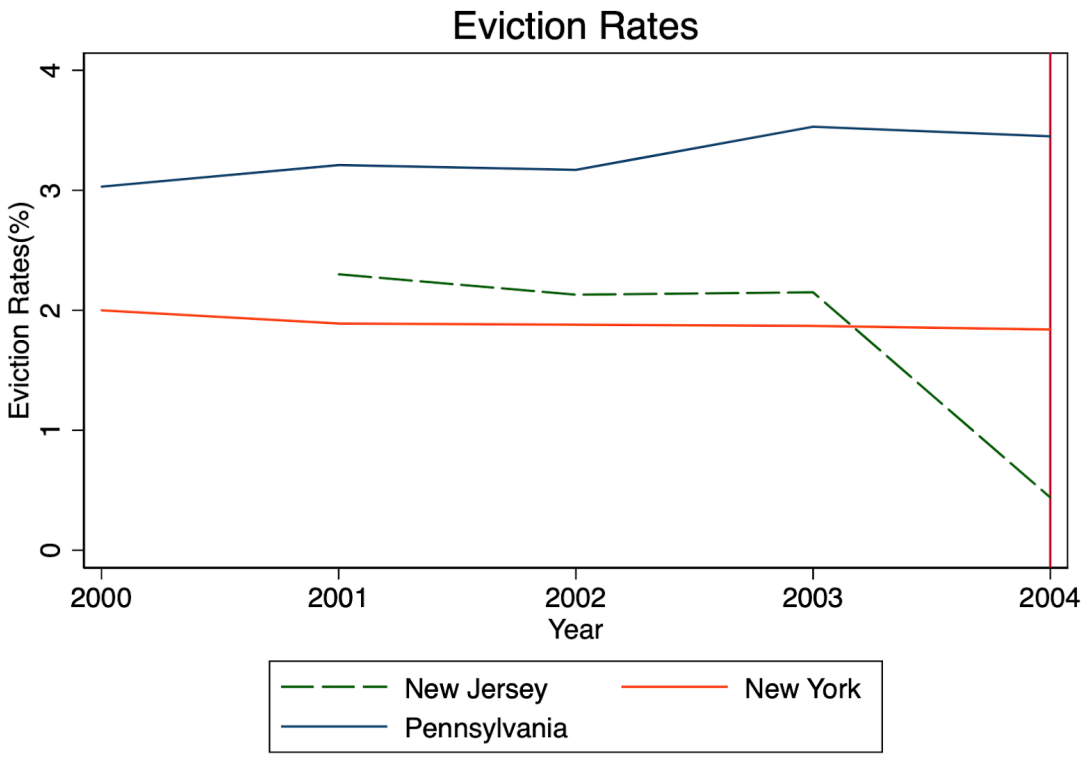


D.3 Plot of Group Means over Years - County Level Data

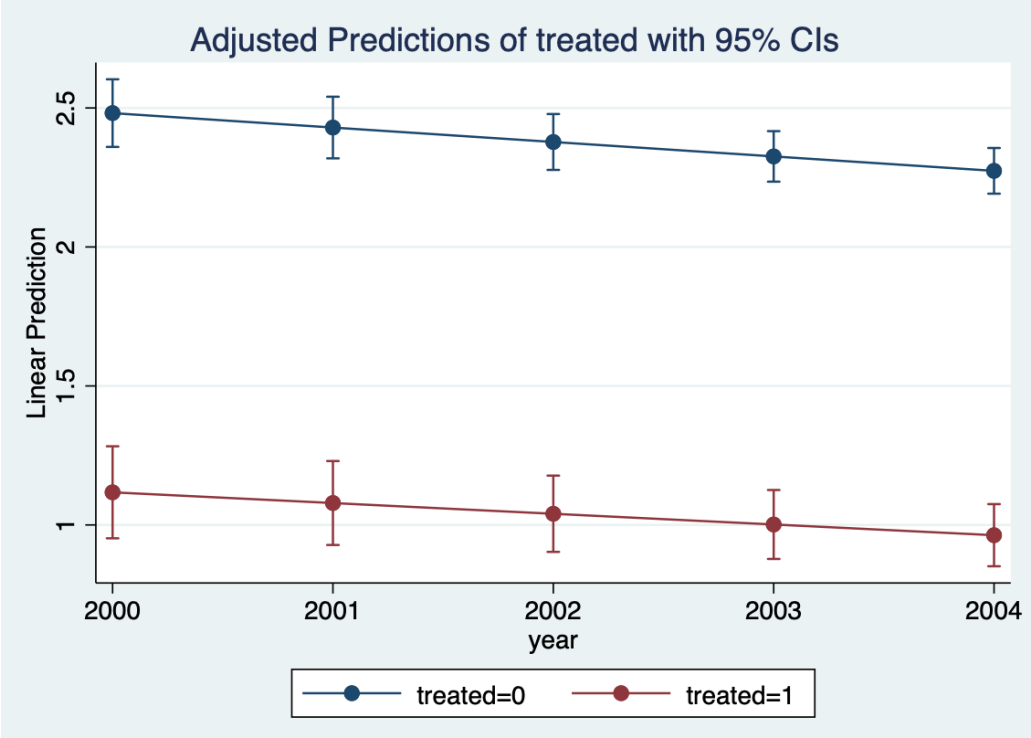


E. New Jersey and New York Case Study Parallel Trends Check

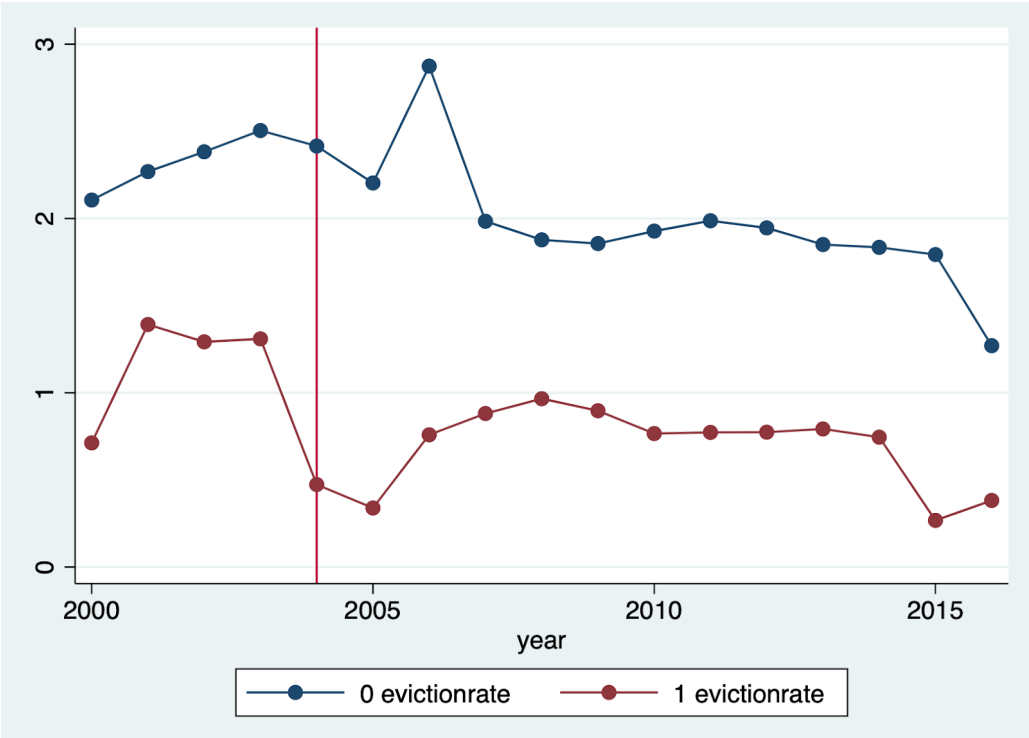
E.1 Eviction Rates in Control and Potential Treated States - State Level Data



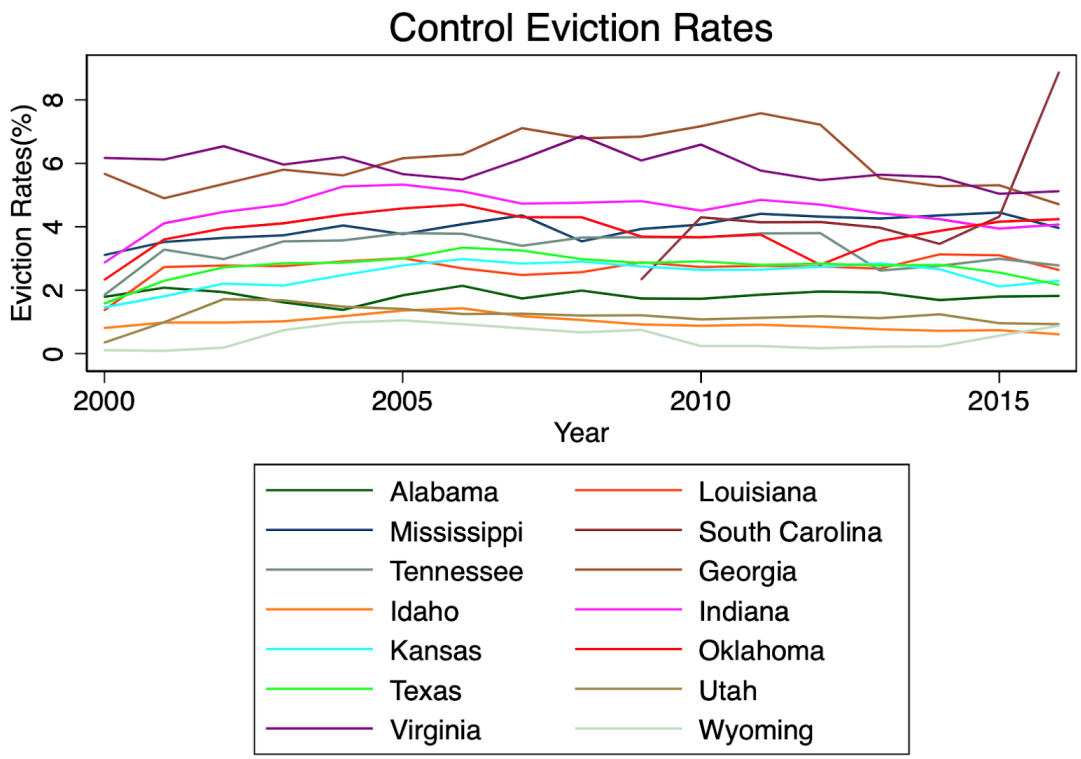
E.2 Fitted Trends Comparison - County Level Data



E.3 Plot of Group Means over Years - County Level Data



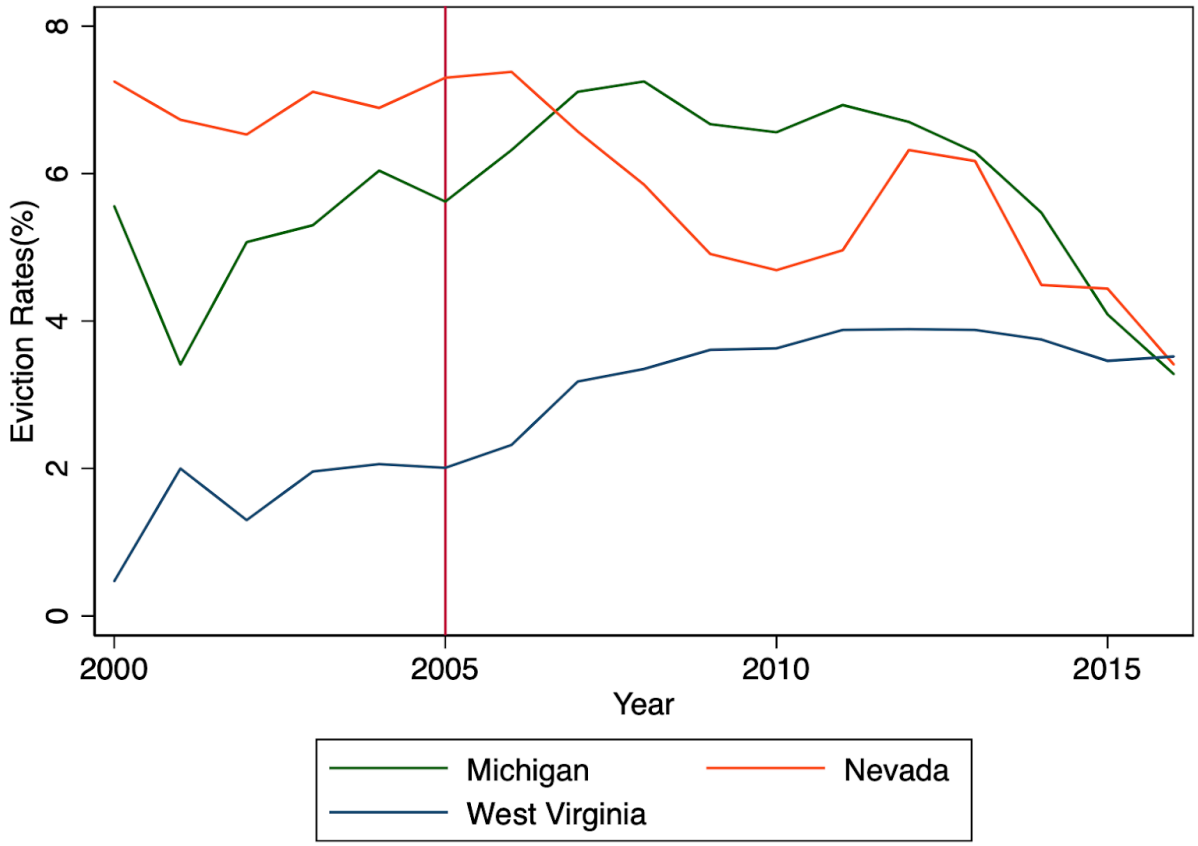
F. Time Based Case Studies Control Group Eviction Rates - State Level Data



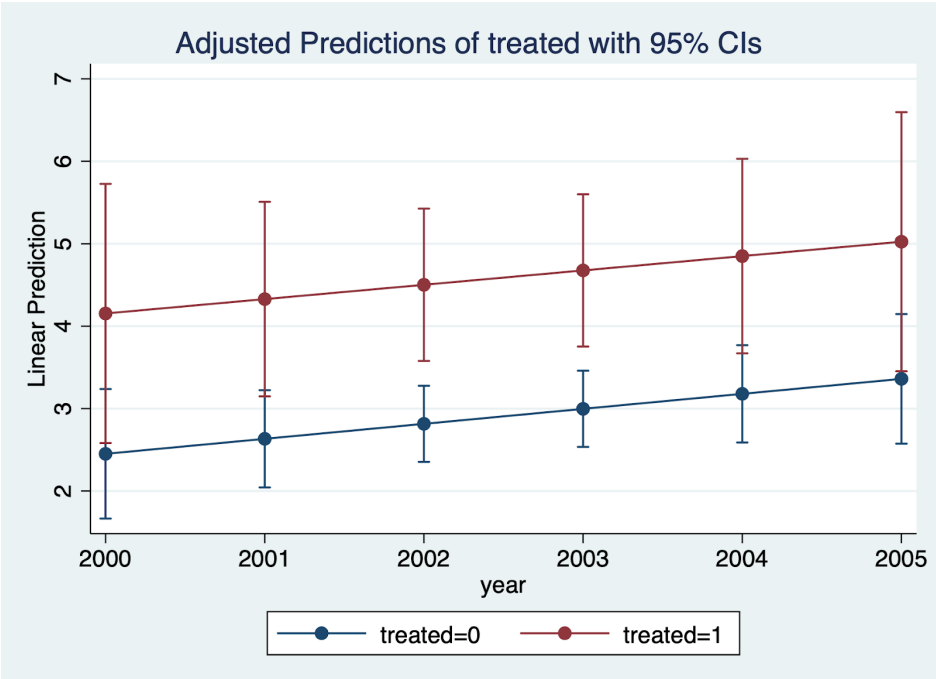
Control group in the regression drops Oklahoma and South Carolina for being outliers and to help satisfy the parallel trends assumption.

G. 2006 Case Study Parallel Trends Check

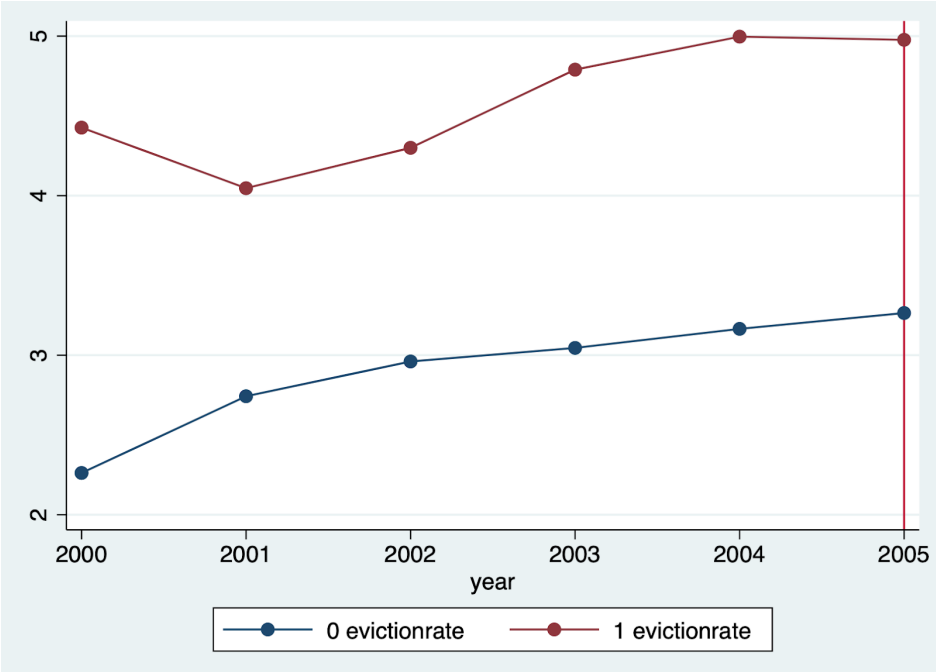
G.1 Eviction Rates in Treated States - State Level Data



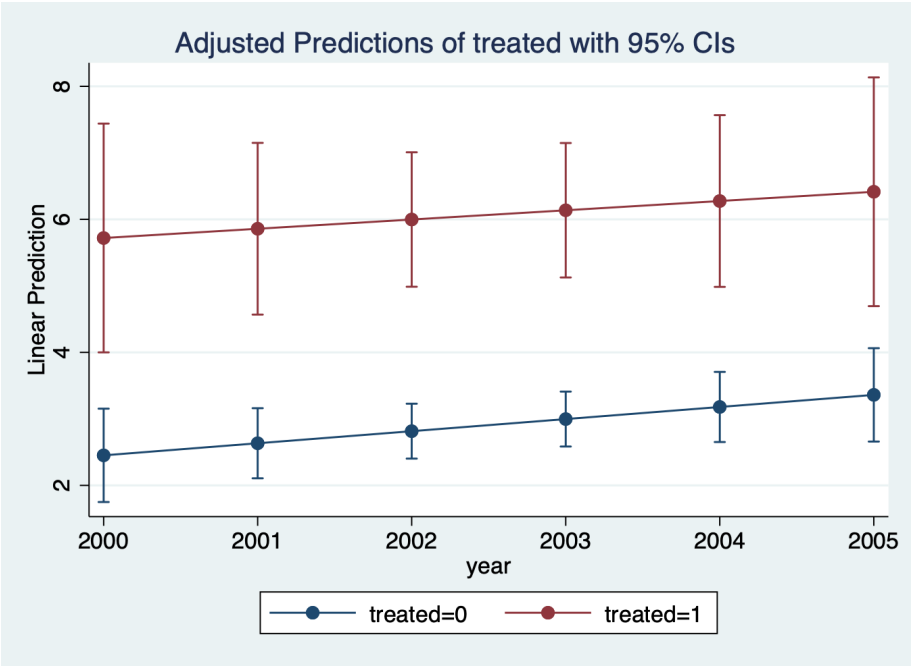
G.2 Fitted Trends Comparison - State Level Data



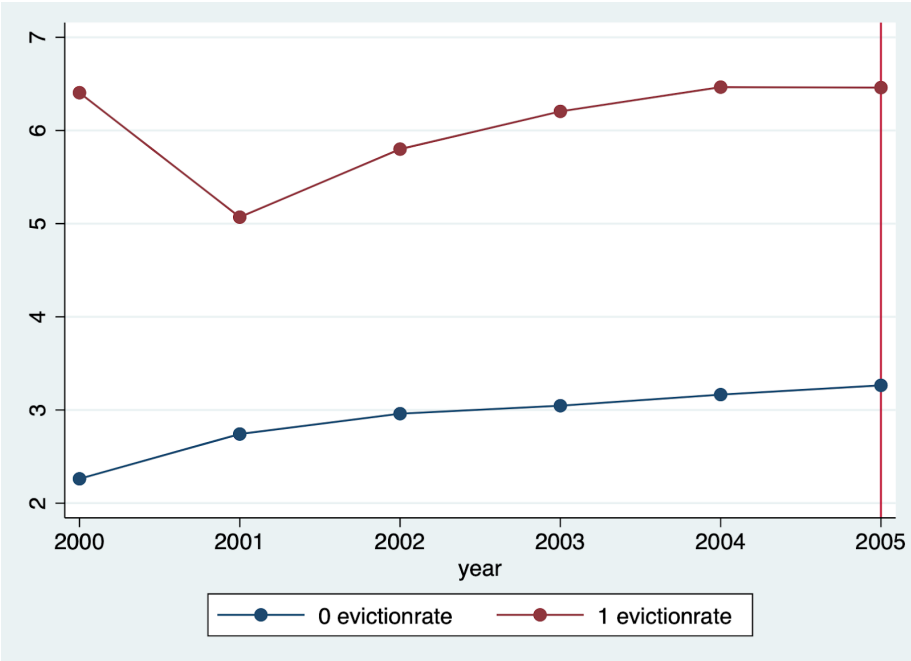
G.3 Plot of Group Means over Years - State Level Data



G.4 Fitted Trends Comparison without West Virginia - State Level Data

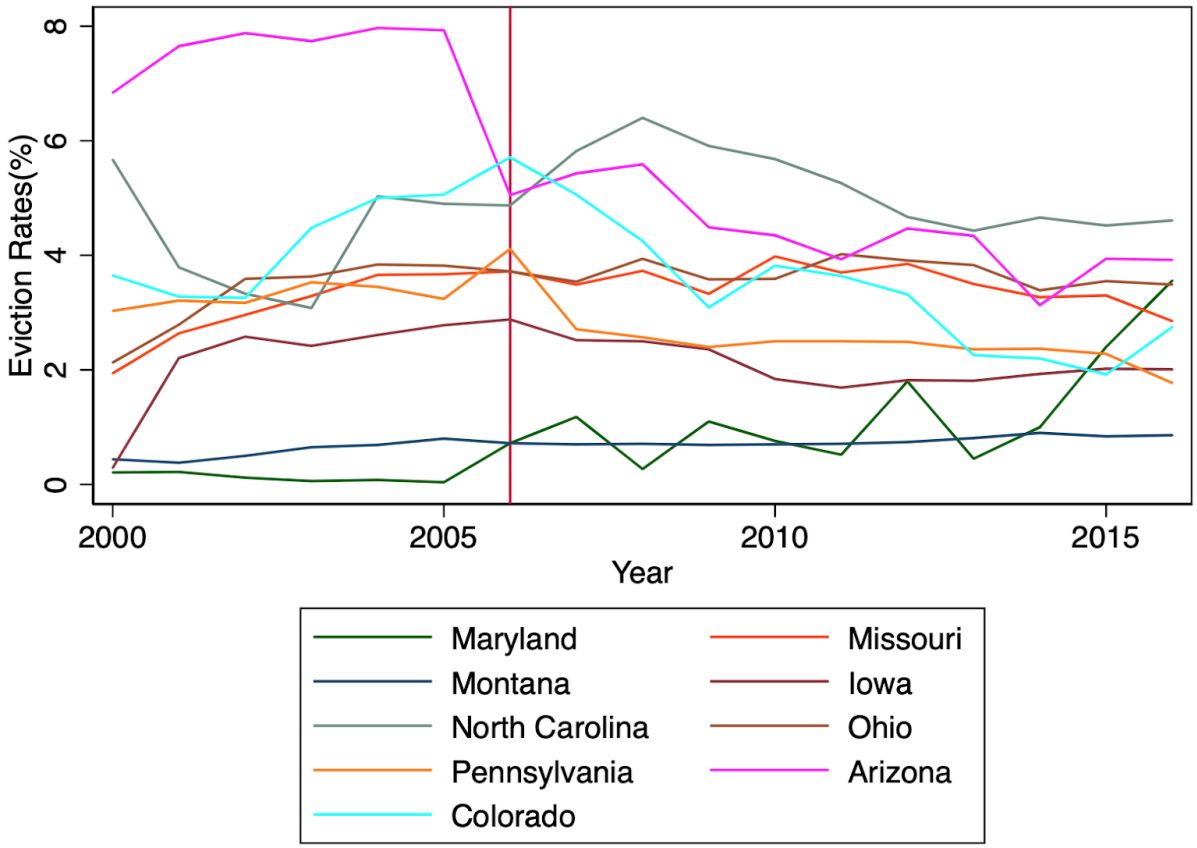


G.5 Plot of Group Means over Years without West Virginia - State Level Data

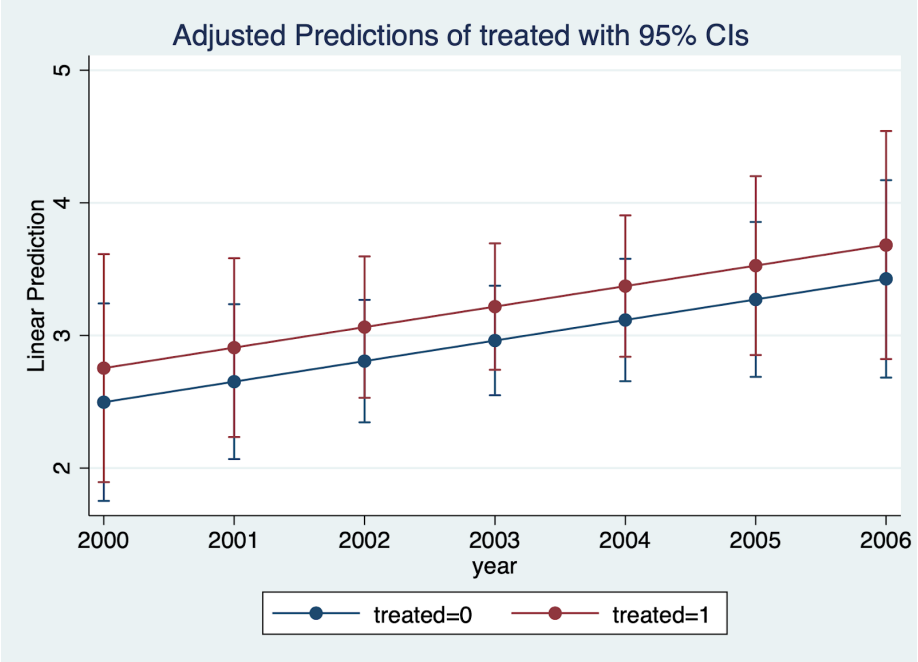


H. 2007 Case Study Parallel Trends Check

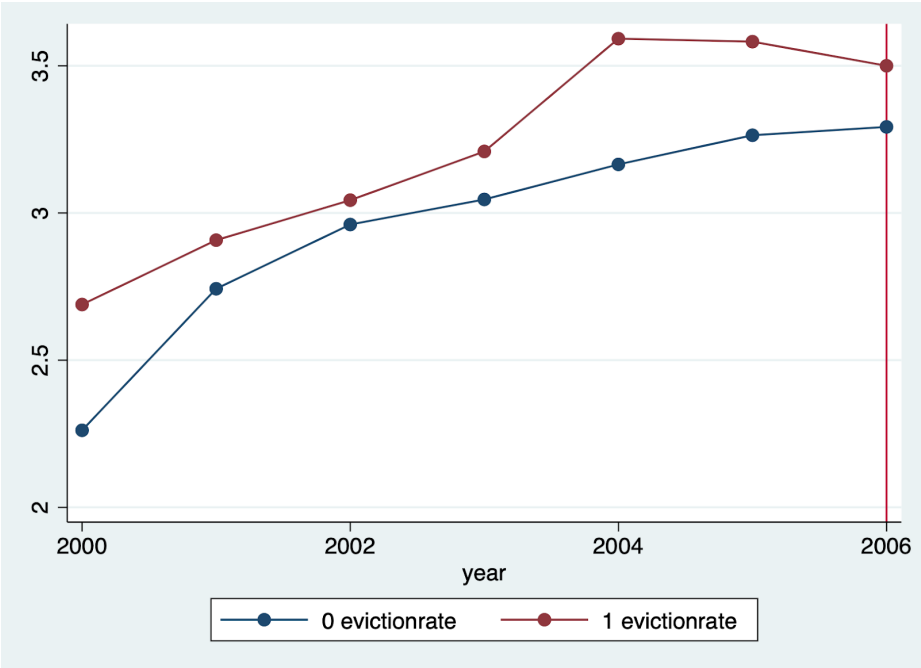
H.1 Eviction Rates in Treated States - State Level Data



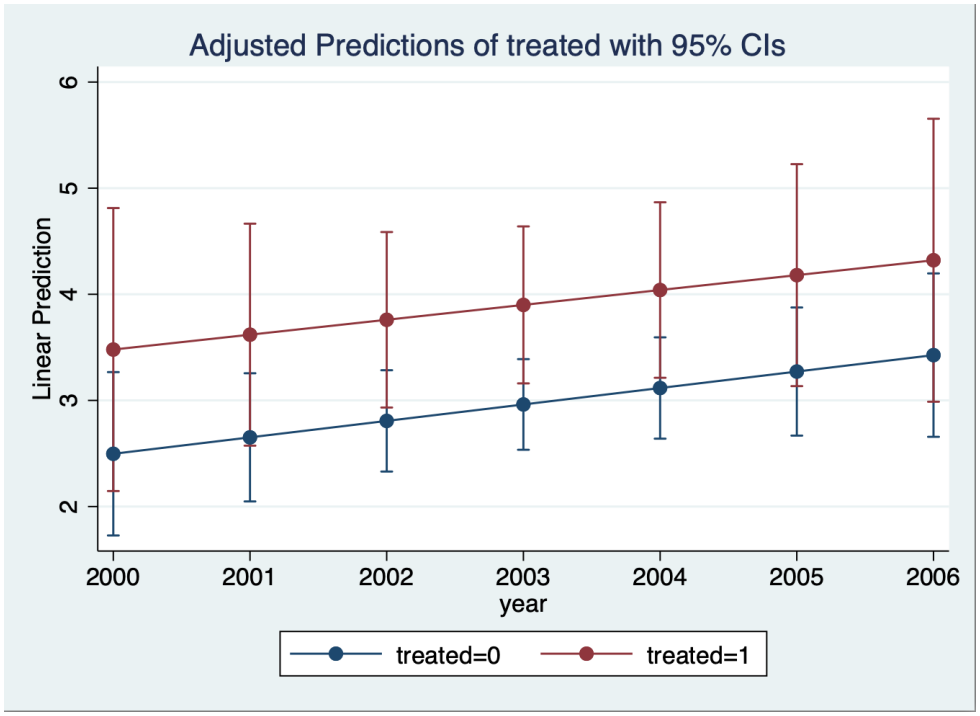
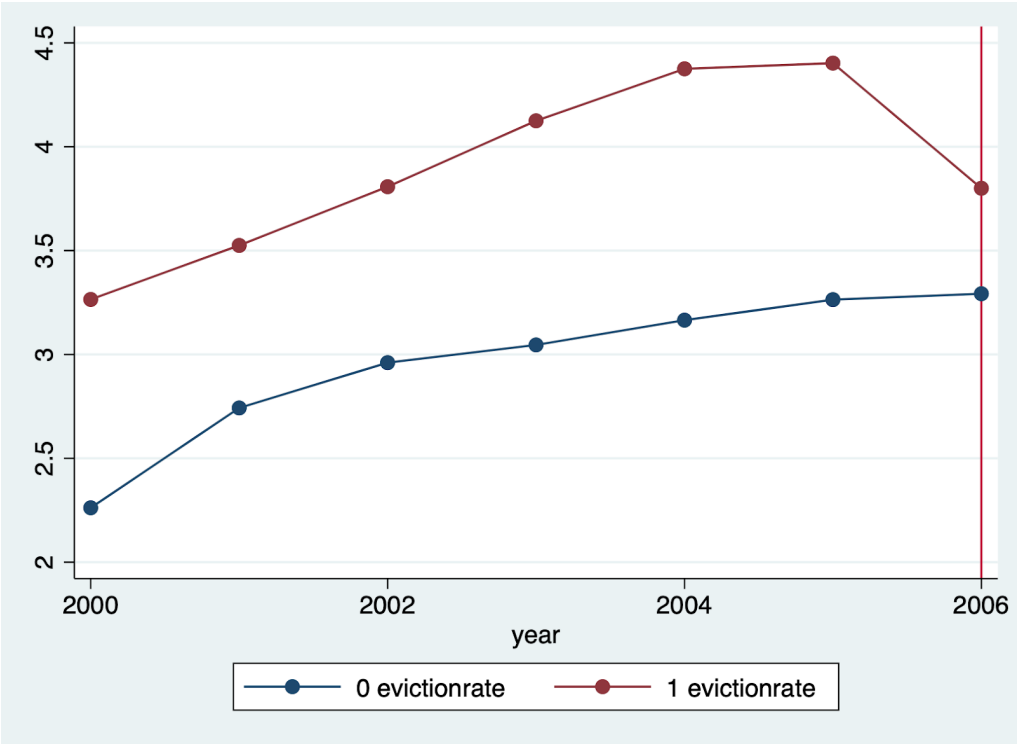
H.2 Fitted Trends Comparison - State Level Data



H.3 Plot of Group Means over Years - State Level Data



H.4 Fitted Trends Comparison dropping MD, MO, IA, NC, PA - State Level Data



H.5 Plot of Group Means over Years dropping MD, MO, IA, NC, PA - State Level Data