Law Enforcement Leadership, Tenure & Jail Overcrowding

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Abstract

Calls for criminal justice reform have become commonplace, as issues ranging from ethnic and racial bias in policing to prison overcrowding have taken center stage in many policy discussions. The demand for change in the criminal justice system largely falls on the shoulders of leadership within the criminal justice system who might have their own preferences toward criminal justice reform. In this work we examine the issue of sheriff tenure on jail occupancy rates, as jails are directly managed by the sheriff and capacity issues in jails have resulted in not only safety and security problems for inmates and staff but also fiscal stress. Utilizing a unique institutional feature - that 192 county sheriffs are limited to no more than two terms in the position - we employ an instrumental variable identification strategy to examine the impact of sheriff tenure on jail occupancy rates. Our results show that longer sheriff tenure is associated with higher jail occupancy rates. Exploring heterogeneous effects we find, contrary to the typical "tough on crime" literature, that counties that predominately identify with the Democratic party and that experience non-competitive political elections are the largest contributing group to our main effect. This work sheds insights into the agencies that are contributing to higher jail occupancy rates, as well as the conditions that are fertile for overcrowding to occur.

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1 Introduction

Rallying cries for criminal justice reform are now commonplace in policy circles,[1] among academic researchers (Beckett et al., 2016; Levin, 2018), in the media and within criminal justice agencies.[2] Some of the most typical reforms include reducing or eliminating jail or prison sentences for low-level offenses (Helland and Tabarrok, 2007; Mayson and Stevenson, 2020; Zimring, 2006; Green and Winik, 2009; Garner and DeAngelo, 2021), training and personnel changes to criminal justice actors (Banerjee et al., 2012; DeAngelo and Owens, 2017; West, 2018; Johnson et al., 2021), examination of ethnic and racial disparities throughout the criminal justice system (Yang, 2015; DeAngelo et al., 2018; Fryer, 2019; Hoekstra and Sloan, 2020), and reducing the number of incarcerated individuals (Buonanno and Raphael, 2013).

One of the most prominent discussions about criminal justice reform involves reducing the incarcerated population. Indeed, this is often touted as a reform that can be agreed upon between individuals identifying as liberal or conservative, as both desire fewer incarcerated individuals. From a fiscally conservative perspective, the impetus for reducing incarceration is often grounded in reducing funds spent on the criminal justice system (Wagner and Rabuy (2017) estimates these costs at $180 billion annually), reducing the limits of government (almost 1 in 33 adults is under some type of control by the criminal justice system), and government accountability. Indeed, there are safety, aging/medical and financial reasons to want to reduce the incarcerated population. Additionally, overcrowded jails and prisons contribute to increased inmate misconduct, which negatively affects the safety and security of inmates and staff (Cummings and Scott, 2012). Nevertheless, there are also community safety concerns related to incarcerating dangerous individuals (Barbarino and Mastrobuoni, 2014; Green and Winik, 2009; Friedman et al., 2011; Cunningham and Kang, 2018)

The question then arises as to what contributed to the increases in incarcerated populations. There

[1] Examples of policy groups include the Vera Institute of Justice, Brennan Center for Justice, and Measures for Justice.

[2] For example, Seattle Police Department is reallocating funds from police services toward victim services. Los Angeles Police Department's budget was reduced by $133 million and a Community Safety Partnership Bureau was started in the aftermath of the Black Lives Matter movement. Also in Los Angeles, newly elected District Attorney George Gascón vowed to end the death penalty, stop most uses of cash bail for misdemeanor non-serious or nonviolent felony offenses and prioritize cases for re-sentencing inmates whose prison terms are deemed excessive. This reform is the latest of a number of district attorneys offices that have made similar claims, including Suffolk County (MA), Dallas County (TX), and Santa Clara (CA).

is theoretical support that more experience in government leadership leads to greater expertise in both government performance and rent seeking behaviors (Tollison, 2012). On one hand, experienced political leadership can lead to increased ability to bring more resources into their district, making term limits less ideal (Buchanan and Congleton, 1994). On the other hand, López (2003) analyzed a comprehensive body of research on the impact of term limits and tenure of government officials and concluded that the existing evidence indicates mixed results and there is no clear evidence that term limits are ideal. Smart and Sturm (2013) developed a theoretical model suggesting that term limits can reduce inefficiencies by limiting voters' discretion to not replace the incumbent. Specifically in the policing area, Crank and Langworthy (1992) discuss policing institutions and quality in terms of police chief control by delving into the removal and replacement of a disgraced police chief by a new chief with a "legitimate" mandate. Bulman (2019) produces one of the only pieces of causal research showing a positive impact of sheriff leadership by investigating the race of the sheriff and its impact on disparities in public safety. His results find evidence that the race of the sheriff reduced racial bias in policing, however, this work did not examine the impact of experience.

We build on this literature by focusing on the effect of a sheriff's tenure on their county's jail occupancy rate.[3] We focus on sheriffs because they are the sole criminal justice actor in charge of operating jails in most jurisdictions.[4] Our emphasis on jail occupancy stems from negative outcomes that have been associated with jail crowding. Specifically, jail crowding can impact bail decisions (Williams, 2016), the mental or physical well-being of inmates, and correctional officers beyond the impact of being incarcerated in a facility that is not above its rated occupancy (Castle and Martin, 2006).[5] However, some studies have found that increases in jail populations can reduce crime rates (Levitt, 1996), while others find that they do not (Sundt et al., 2016). Nevertheless, the US Department of Justice has identified jail and prison occupancy as an important

[3]Previous work has examined the effect of police experience on various outcomes. DeAngelo and Owens (2017) examine the effect of police experience on issuing citations for recently changed laws, while West (2018) examines the relationship between law enforcement experience and the likelihood that an investigation yields contraband. See also Horace et al. (2016) and Ross et al. (2020).

[4]Our analysis focuses on 35 states because our identification strategy leverages county sheriffs that are term limited, which we discuss in Section 3. As such, we omit 15 states from our analysis because they are not comparable to term limited locations along observable variables. Out of 514 counties in the 35 states included in our analysis, we have identified 502 counties where the sheriff is in charge of operating the jail.

[5]Kinkade et al. (1995) conduct a nationally representative survey of sheriffs to examine the effect of jail occupancy on a number of secondary issues associated with jail occupancy, noting that occupancy in larger jail facilities is having a profound impact on jail safety, and that inmate safety suffers the most from jail occupancy.

enough issue that they have placed many jurisdictions under a federal consent decree.[6]

The difficulty in examining the decisions of actors or enacted policies within the criminal justice system is that many of these policies are adopted and enacted by individuals that have either been appointed or elected into positions, which are often the product of forces that are not observable by a researcher (Lee et al., 2004). Recent empirical work in public choice points to the important influences that appointments and elections could be having on the criminal justice system. For example, Ouziel (2020) outlines the conditions under which attempts to reform the criminal justice system will be (un)successful. Bandyopadhyay and McCannon (2014) examine the impact of elections on the willingness of prosecutors to take cases to trial, as well as the sanctions that result from those trials. DeAngelo and McCannon (2020) find that judges that face electoral pressures and who handle criminal and civil cases have increased error rates during their election campaign. The error rate is also rising with financial contributions received by judges toward their re-election campaign. Additionally, appointed judges could be altering their decisions in response to the preferences of the appointing agent (Shepherd, 2009). Criminal justice unions (police, prosecuting attorneys, public defenders, etc.) could be engaging in strategic behavior to ensure the protections of their members (Dharmapala et al., 2020). Fines and fees as well as seized civil assets that are part of the criminal justice system could contribute non-negligibly to the operating budget of a county, acting as a force against reducing law enforcement activities (Makowsky and Stratmann, 2009; Makowsky et al., 2019). While these are just a few examples, the main upshot is that the preferences of individuals in positions of authority (e.g. county commissioners, chief budget officers, etc.) could be impacting the decisions of appointed or elected members of the criminal justice community.

Potential endogeneity between a sheriff's tenure and jail occupancy presents another empirical issue. The decision of a sheriff to allow a jail to be crowded could be a function of the sheriff's confidence that they will be re-elected, the electorates preferences toward criminals (e.g. "tough on crime") or the sheriff's personal preferences. To overcome this issue, we leverage a situation where 192 counties across 4 states have legislatively limited sheriffs to a maximum of two 4 year terms. Using sheriff term limits as an instrument for

[6] Lawrence (2014) provides an example of jails under federal court order in California.

sheriff tenure, we examine the effect of sheriff tenure on jail occupancy. The identifying assumption is that sheriff term limits do not have a systematic or direct relationship with jail occupancy other than through its impact on a sheriff's decisions. Importantly, though, term limits exogenously impact the tenure of a sheriff, which enables us to examine the impact of sheriff tenure on jail capacity.

Our main results find that an additional working year in the office can raise the jail occupancy rate by 5.5 percentage points, where the average jail occupancy rate is 84% of jail capacity. To further examine the mechanism through which longer sheriff tenure leads to higher jail occupancy rates, we separate our data along two margins: the competitiveness of elections and political party dominance. We then explore heterogeneous treatment effects by (non-)competitive counties with a majority of democratic versus republican voters. Our results indicate that, contrary to the common belief that republican candidates tend to be "tough on crime", our results are mostly driven by democratic dominant, non-competitive counties. In other words, we find the strongest causal effect of longer sheriff tenure on increased jail occupancy rates in counties that are traditionally democratic dominant with non-competitive elections. This work contributes novel data about the role of local politics on an important criminal justice outcome, as data availability issues have been blocking causal research on policing leadership despite the emphasis on its importance (Sumner et al., 2018).

The remainder of this paper consists of six parts. In the next section we provide background on term limits for sheriffs and a full description of the data used in our analysis. We also discuss the matching process that is employed to ensure that we are conducting our analysis on comparable locations. In section 4 we describe our research design and the specific estimation strategy that we employ in our empirical analysis. Our main results are presented in section 5 and robustness specifications are presented in section 6. Finally, in section 7, we conclude with a discussion of our results and their implications for criminal justice reform.

2 History of Sheriff Election and Term Limits for Sheriffs

The county sheriff position is one of the few criminal justice leadership positions that is determined by election. While sheriff elections are quite common in the US (3,076 counties elect sheriffs among 3,143 counties as of 2020), term limited sheriffs are not a common phenomenon. Indeed, only 4 states (Colorado, Indiana, New Mexico and West Virginia) have two term limits on the sheriff position, corresponding to 192 counties. In Colorado, term limits date back to January 1, 1995. Although the state policy requires term limits on elected officials, only 12 counties abide by this policy.[7] Indiana has had term limit laws as far back as 1952. An amendment was proposed in the 1980s that tried to remove the constitutionally mandated two term limits (Constitution Article 6, Section 2), but was defeated (Bell and Byers, 2011). The constitution of the state of New Mexico, written in 1914, dictated "all county officers, after having served two consecutive four-year terms, shall be ineligible to hold any county office for two years thereafter" (Article 10 Section D). In our data, there are only two sheriffs out of 88 who returned to the sheriff's office after another sheriff served in the office. West Virginia has had a two term limit law imposed on sheriffs since 1974 (Bell and Byers, 2011). According to the National Sheriff's Association, there are no other locations that have term limits imposed on sheriffs. However, Ballotpedia notes that Missouri proposed a constitutional amendment of two term limits to be imposed on sheriffs, but this does not appear to be the practice within the state as at least 27% of sheriffs served more than two terms.[8]

3 Data

In this section we describe our data sources and procedures for constructing our main explanatory variable: sheriff tenure. We also describe the process by which we match term limited locations to non-term limited locations to determine a comparable group for our analysis.

[7] There was a nationwide debate to impose term limits on state legislatures for "being corrupt, indebted to special-interest groups, and more interested in getting re-elected than working for the people" (Bill of Right in Action Spring 1995 (11:3) c). Colorado set two term limits on U.S. Senate, Colorado Senate, and officials in the State Executive Department, State Education Boards, and local governments.

[8] Some Missourri counties are not represented in the data, so 27% is likely a lower bound.

3.1 Sheriff Tenure

To obtain the tenure of each sheriff we identify information on sheriff names by year and county and calculated the length of time that they held the sheriff position. Sheriff elections appear in the vast majority of states, except for Alaska and Connecticut, which are omitted from the analysis. There are also a few county- and city-level exceptions that are omitted from the analysis.[9] Hawaii and Rhode Island have appointed sheriffs, as well as two Colorado counties and Dade County (FL) according to the executive summary by the National Sheriff's Association. The District of Columbia is also excluded from our analysis because it is a federal district and the duties of the sheriff department are handled by several other agencies, including the United States Marshal Service and District of Columbia Protective Services Police Department.

The main source of tenure information is the Municipal Year Book series from the International City/County Management Association, which contains an extensive list of county officials across the United States. Unfortunately, the data are occasionally missing because it is not a requirement for sheriff's departments to report to this source. To supplement the missing data, the information is obtained from various sources including state-wide repositories, official county web sites, and searching local newspaper articles.

3.2 Jail Operations and Socioeconomic Indicators

Our main outcome variable, the occupancy of the jail, relies on the sheriff's discretion in operating the jail. To obtain this information we rely on the Census of Jails periodical surveys, which were conducted in 1983, 1988, 1993, 1999, 2005, 2006, and 2013. Among a variety of survey questions, we selected items including average daily jail population, rated capacity, and total new admissions to and final discharges from jail facilities.

We also include a series of socioeconomic indicators as control variables in our main analysis and propensity score matching process. These variables are sourced from two locations: Intercensal State and County Characteristics Population Estimates (U.S. Census Bureau, 1970–2018) and Personal Income and Employment by Major Component (Bureau of Economic Analysis, 1970–2018). The variables that we utilize in

[9] Five populated territories (American Samoa, Guam, the Northern Mariana Islands, Puerto Rico and the U.S. Virgin Islands) do not have county governments and, accordingly, do not have sheriffs departments.

our analysis include the percent of population that is female, white, and Black, the average income per capita, and employment per capita. Additionally, population coverage per agency is obtained from the FBI's Uniform Crime Reporting (UCR) data. The population coverage, which is defined by the UCR program, indicates the population that the law agency oversees.

3.3 Matching term and non-term limited locations

After excluding locations where sheriffs are appointed or do not exist, term limited locations make up 6% of all locations (192 out of 3,076 locations). With a few exceptions, the majority of our term limited locations are rural, which distinguishes term limited counties from many non-term limited counties. To ensure that our analysis is conducted on comparable locations, we conduct a propensity score matching (PSM) exercise to restrict our analysis to term limited and non-term limited locations that are comparable, at least based on observables. We utilize the following procedure to match locations for our analysis. To start, 59 variables are used in the matching analysis, which include population information (percent of female, white, and Black population by 18 age groups[10]), farm/non-farm income, total income, employment-to-population ratio and total population in each county. We conducted PSM for each year (38 years from 1978 to 2015) using three conditions: (1) all control counties with replacement, (2) the nearest neighbor matching method, and (3) allowing up to 10 control locations.[11]

The actual number of matched control locations varies from 760 to 1460 each year. To identify our final set of control locations, we keep only those locations that matched to our term limited locations in at least 15 of the 38 years of data in our sample, which is around 700 locations. Tenure information has been obtained for 327 non-term limited locations, covering 32 states. After merging with the Census of Jail data, the final analysis includes 301 non-term limited locations and 155 term limited locations among all the 192 term limited locations.

[10] The 18 age group data includes 1-4 years, 5-9 years, 10-14 years, 15-19 years, ... , 80-84 years, and total years.
[11] We require a minimum of 10 control locations to ensure a large enough pool of candidate locations for matching.

3.4 Descriptive Statistics

Table 1 presents descriptive statistics comparing locations with and without term limits after the the PSM exercise has been completed. The unit of analysis is county by year observations. Column (1) includes all observations, while column (2) includes only term limited locations, and column (3) includes only non-term limited locations.[12] The variables from rows 1 - 4 are used to construct the main outcome variables in our analysis, obtained from the jail operation data. *Avg Daily Jail Population* is the average inmate population within a jail in the year of data collection. There were 145 inmates, on average, across all jails with 116 inmates in term limited locations and 175 inmates in non-term limited locations. *Rated capacity* is an officially calculated measure of the official inmate capacity that the facility can accommodate in the year of data collection. *Total new admissions* and *Total final discharges* are a snapshot of the total inmates who were admitted and discharged from a facility during a target period.[13] Overall, the raw data show that non-term limited locations, on average, have statistically greater numbers of inmates: non-term limited locations have 44 more daily inmates (160-116=44). Similarly, non-term limited locations, on average, have higher rated capacity, new admissions, and final discharges than term limited locations.

Rows 5 - 8 are the main outcome variables used in our analysis, which are constructed from rows 1 - 4. First, *Jail occupancy rate* is calculated as the average daily population divided by the rated capacity. In this way we have normalized each jail to the rated capacity to make our analysis comparable across different sized facilities. Similarly *Discharge/admission ratio* is calculated as the Total final discharges divided by the *Total new admissions*. Then we converted these two variables into binary outcome variables for ease of interpretation of our coefficients. *1(Jail occupancy rate>0.95)* is coded as 1 if the jail occupancy rate exceeds 95%. *1(Admission>Discharge)* is coded as 1 if the number of admitted inmates is greater than the number of discharged inmates. Among the four constructed variables, the jail occupancy rate shows a 5 percentage point mean difference between groups, indicating that non-term limited locations are more likely to have the higher jail occupancy rate.

The tenure variable is constructed by the name of sheriffs in an office by year and county as mentioned

[12] The asterisks in the first column correspond to statistically significant differences in means between columns (2) and (3).
[13] The target period indicates either the previous month (usually the month of June) or the week prior to data collection.

in Section 3.1. Specifically, we determine the first year that a sheriff's name appears within a county and begin counting that sheriff's tenure in that year. On average, sheriffs in the term limited locations have 2.5 fewer years experience in the office than sheriffs in non-term limited locations. The statistically significant mean difference between term limited locations and non-term limited locations implies we are likely to have a strong first stage. The remaining variables (rows 10 - 16) are covariates, which include the percent of the population that is female, white, and Black, as well as the average income per capita, total employment per capita, and population coverage per agency.

4 Empirical Strategy

To examine the effect of police tenure on jail occupancy we utilize a model based on the law enforcement learning literature (West, 2018; DeAngelo and Owens, 2017). The baseline specification examines two separate measures of jail occupancy as a function of the tenure of sheriffs, controlling for fixed effects. Equation 1 presents the relationship between sheriff tenure and jail occupancy, which ideally we want to estimate:

$$Jail\ Occupancy_{it} = \beta_0 + \beta_1 Tenure_{it} + X'r + Sheriff_i + State_i \times Year_t + \epsilon_{it} \tag{1}$$

where Jail Occupancy$_{it}$ is the level of jail occupancy based on the relative number of inmates, as discussed in Section 3. $Tenure_{it}$ is the number of working years of the sheriff in office, while $Sheriff_i$ is sheriff fixed effects to account for unobserved characteristics of each sheriff that do not vary over time, and $State_i \times Year_t$ is the set of state by year fixed effects, to account for unobserved variation within each state overtime. X is the set of socioeconomic indicators including percentages of female, white and Black populations, the average income per capita, employment per capita, and population coverage by each agency to absorb variation at the county level over time.

However, this specification will suffer from several sources of endogeneity, likely due to political motivations. Theoretical research suggests that the electoral process encourages government officials to be more conscious of their performance (Besley and Case, 2003), implying possible reverse causality. Specifically,

higher performing sheriffs in their early career are more likely to be re-elected, thus longer tenure is associated with high performing sheriffs. Alternatively, idiosyncratic preferences of communities toward criminal actors can lead to elected officials that engage in practices that might not be tolerated in most locations (e.g. Sheriff Arpaio in Maricopa County (AZ)). Thus, we aim to use an instrumental variable estimation to examine the causal effect of tenure on jail occupancy.

4.1 Specification

To overcome concerns of endogeneity and obtain the causal effect of police leadership tenure on jail occupancy we implement an instrumental variable approach using the two term limits imposed on a subset of sheriffs to influence the length of their tenure. Term limits are mechanically linked to the length of working experience, as term limited sheriffs cannot serve more than two terms. Our identifying assumption is that term limits only impact the jail operation through the length of the sheriff's tenure. Since we balance our data along relevant and observable socioeconomic characteristics, we do not believe that jail operations are being directly impacted by term limits other than their effect on the sheriff's tenure. In addition, it is unlikely that jail operations would impact term limits since term limits are codified into law and would require a considerable amount of time and effort to alter. Finally, it is unlikely that jail operations, or even sheriff behavior, would motivate bureaucrats to enact policies to change the term limits of the sheriff, as these term limits are typically applied to all elected county officials.

Equation 2 represents the first stage of the IV strategy:

$$First\ Stage:\ Tenure_{it} = \beta_0 + \beta_1 Term\ limit_{it} + State_i \times Year_t + X'r + e_{it}. \tag{2}$$

where $Term\ limit_{it}$ is a binary variable for whether a county imposed two term limits on the county sheriff. We include $State_i \times Year_t$ fixed effects to account for unobserved variation within each state overtime. X is the same set of socioeconomic indicators presented in Equation 1. We do not include the sheriff (or

county) fixed effects because the instrumental variable, two term limits imposed on sheriffs, are county level observations that do not vary over time.

The predicted value of tenure ($\widehat{Tenure}_{it}$) is obtained from equation 2 and included in the second stage of our analysis:

$$Second\ Stage:\ \ Jail\ crowding_{it} = \alpha_0 + \alpha_1 \widehat{Tenure}_{it} + State_i \times Year_t + X'r + \epsilon_{it}. \tag{3}$$

Figure 1 displays the mean difference between locations that are and are not term limited. The left (right) bar indicates the average tenure of the sheriff in counties without (with) term limits. The red whiskers represent 95% confidence intervals. Term limited locations have statistically shorter average tenure length for sheriffs, providing evidence for the strength of our first stage. Figure 2 displays the average jail occupancy rate by locations that are and are not term limited. This figure visually displays the reduced form of our 2SLS model and provides support for the notion that term limited locations have lower average jail occupancy rates.

5 Results

In this section we examine the effects of sheriff tenure on jail operations using the IV strategy described in Section 4. Specifically, we have two jail crowding measures derived from the average daily jail population and rated capacity variables: 1) the jail occupancy rate, which is defined as the average daily jail population divided by the rated capacity and 2) whether the jail occupancy reaches a critical threshold level. The second measure is a binary indicator variable, *1(jail occupancy rate>0.95)*, coded as 1 if the jail occupancy rate is greater than 95% capacity. The regression results from the first measure are shown in Table 2. The four columns in Table 2 contain OLS, first stage, reduced form, and 2SLS regression estimates, respectively. Both the first stage and reduced form estimates are statistically significant, as expected based on Figures 1 and 2. Additionally, our instrument is sufficiently strong to ensure that we are less likely struggling from a

weak instrument issue (Stock and Yogo, 2005). The 2SLS point estimate implies that one additional year of tenure raises the jail occupancy rate by 5.5 percentage points, or 6.5% of the mean. The results from the binary outcome variable of having a jail occupancy rate above 95 percent, *1(jail occupancy rate>0.95)*, are presented in Table 3. Again, the first stage and reduced form estimates are statistically significant at conventional levels and the F-statistic is also well above 10. The 2SLS point estimate indicates that one more year of tenure raises the probability of exceeding the 95 percent jail occupancy rate by 3.6 percentage points, or an 11.5% increase from the mean.

We additionally derive jail crowding measures from the admitted and discharged inmates variables. Specifically, the jail crowding measures are 1) the discharge to admission ratio, which is defined as the total final discharges divided by the total new admissions and 2) the likelihood of jail occupancy net growth. The second measure is a binary indicator variable, *1(Admission>Discharge)*, coded as 1 if the number of admitted inmates is greater than the number of discharged inmates. Table 4 delivers the same story of growing jail populations with sheriff tenure, as one additional year of tenure decreases the discharge to admission ratio by 8.6 percentage points, implying that facilities discharge fewer inmates than there are incoming inmates. The 2SLS point estimates from Table 5 indicate that one additional year of tenure raises the probability of net growth in the jail by 7.4 percentage points.

Finally, specifications with different sets of fixed effects are displayed in Tables 10 - 12. These specifications include (1) state and year fixed effects (without covariates), to account for unobserved characteristics of each state that do not vary over time and for unobserved variation within each year, (2) state and year fixed effects with covariates, to additionally absorb socioeconomic variation at the county level over time, and (3) state by year fixed effects (without covariates), to account for unobserved variation within each state overtime. The stability of our estimates across these specification shows that our results are robust to alternative specifications while remaining statistically and economically significant.

6 Mechanism and Robustness

We examine the mechanism and robustness of our results in this section. To examine the mechanism through which increases in sheriff tenure are leading to higher jail occupancy rates we explore heterogeneous results by dividing our data along political party lines (Democratic versus Republican dominant regions) as well as regions that are politically competitive versus regions that are not. We also conduct a falsification exercise to determine if our results would have been obtained randomly.

6.1 Political Competition

Political competition could drive sheriff behavior in our data, as sheriffs might have more leeway in operating jails in the absence of political competition. Besley et al. (2010) constructed a party neutral variable measuring political competition by looking at vote margins. It suggests that we can measure (the lack of) political competition by the dominance of either the Democratic or Republican party in elections.

While we would like to utilize information on sheriff elections to determine whether elections were contested, this is not possible due to a lack of detailed information on sheriff election results. To deal with this issue, we imported county vote shares for state legislature elections as a proxy. County vote shares include those for governors, senators, U.S. representatives, state offices, and presidents, which provides election data every other year. To conduct this analysis, we obtained county level state legislature election voting results from ICPSR 00013 for 1970–1990 and CQ press[14] for data after 1990. We filled in missing years with the average of the most recent elections.

We then calculate the ratio of Democratic votes to the sum of Democratic and Republican votes and subtract 0.5 to obtain the vote margin variable:

$$Vote\ margin_{it} = Dem\_it/(Dem\_it + Rep\_it) - 0.5 \tag{4}$$

where Dem_it is the total Democratic votes and Rep_it is the total Republican votes.

[14] "Voting and Elections Collection" data retrieved from CQ Press. See https://library.cqpress.com/elections/static.php?page=sources-and-definitions&type=public.

We convert the continuous vote margin measure into a binary variable based on a 5-year moving average of the vote margin. A binary variable is coded as 1 if vote margin is *tight*. Vote margin is considered to be *tight* when it is between the 5-year moving average +/- the standard deviation divided by 3:

$$Competitiveness = 1 \; if \; Vote \; margin \in (\mu_{it} - sd_{it}/3, \; \mu_{it} + sd_{it}/3) \tag{5}$$

where μ_{it} is the 5-year moving average of vote margin and sd_{it} is the standard deviation of the vote margin.

If the vote margin is *tight*, then the incumbent is likely concerned about maintaining control of their elected position and will engage in practices that will enhance their likelihood of re-election. Alternatively, if the vote margin is not *tight*, then the incumbent would be less motivated by election concerns. The 5-year window is intended to incorporate the dynamics of vote margins across locations changing over time. We ensure approximately 25% of observations would be coded as locations with political competition by using the bounds of standard deviation divided by 3. Outside of these bounds approximately 75% of our observations will be coded as locations without political competition.

Tables 6 and 7 report the 2SLS results for the Democratic party dominant locations without and with political competition, respectively, with the jail occupancy rate as the outcome variable. We observe that jail occupancy rates are rising with sheriff tenure in Democratic party dominant locations without political competition, suggesting that sheriffs increase jail occupancy rates when they are unlikely to face backlash in the form of political competition.[15] Tables 8 and 9 report the 2SLS results for the Republican party dominant locations without and with political competition, respectively. We do not observe any effect of political competition on jail occupancy rates in politically competitive or non-competitive locations. Thus, the result of longer tenure leading to higher jail occupancy rates appears to be driven by Democratic dominant locations with a lack of political competition. We interpret the results as sheriffs in Democratic dominant locations become "tough on crime" with more working experiences when they do not face political competition. On the contrary, sheriffs in Republican dominant locations do not exhibit the "tough on crime" behavior with a lack of political competition.

[15] We note, though, that by subsetting the data we do encounter issues of instrument strength.

6.2 Falsification

We conduct two-step randomization inference to detect whether a placebo effect exists by structurally randomizing the tenure variable after randomly assigning term limits. As seen in Figure 3, our main 2SLS estimate (the vertical red line) of sheriff tenure on jail occupancy rates is statistically different from the randomized distribution of placebo effects with 5,000 iterations. The following steps are taken to conduct the two-step randomization test. First, we preserve the ratio of term limited observations to total observations in each year and randomly assign false term limits to observations. Tenure length is then randomly matched with integers from a uniform distribution in the interval [1, 8], within the falsely assigned term limited locations. We obtain 2SLS estimates based on the assigned term limit and tenure variables, and then calculate the distribution of 5,000 estimates from two-step randomization.[16]

7 Conclusion

Calls for criminal justice reform have become commonplace and widely vary from de-funding law enforcement to not arresting or prosecuting low-level offenses. In this work we examine another criminal justice issue that has attracted considerable attention - occupancy rates in jails. We specifically examine the impact of a sheriff's tenure on the occupancy of the jail that they manage. The rationale for our focus on sheriffs and jails is two-fold. First, sheriffs are one of the few elected actors in the criminal justice system. In most counties in the United States they also manage the operations of the jail. Second, a unique feature of sheriffs is that a subset of sheriffs in the United States are limited to a maximum of two terms as the sheriff.

We exploit the two term limit on a subset of sheriffs to explore the relationship between the tenure of a sheriff and the occupancy rate of the jail that they manage. The two term limit on sheriffs enable us to explore the causal effect of tenure on jail occupancy. We find that increases in tenure lead to higher occupancy rates in county jails. This result is robust to alternative specifications and also holds up to randomization

[16] We do not obtain the randomized distribution from the total set of combinations due to computational limitation. Suppose we are to randomize the tenure length with 8 values (from 1 to 8), then even with just 10 locations, there would be more than 1 billion (8^{10}) permutations. The actual set of tenure length values in our data range from 1 to 33. Imbens and Rubin (2015) show in a simulation study that the randomization inference p-values become stable after 1,000 iterations in the case of a binary treatment variable.

inference. To explore the mechanism leading to higher jail occupancy rates with increased sheriff tenure we present heterogeneous effects by splitting locations along two margins: (1) whether the county is Democrat or Republican dominant and (2) whether or not elections are competitive. Our heterogeneous results indicate that our main results are being driven by counties that are Democratic dominant and that do not face political competition in elections.

Our research contributes to the growing literature on the relationship between elections and the criminal justice system, especially as calls for criminal justice reform continue to grow. We also further the literature on criminal justice leadership and the impact that leadership tenure has on the safety of the community. While our analysis enables us to examine one important measure of the criminal justice system, jail occupancy rates, the impact of sheriff tenure on criminal behavior deserves further attention, which could be a fruitful area of future research.

8 Tables and Figures

Table 1: Descriptive Statistics Comparing Locations with and without Term Limits

	Total	Term limit	No term limit
Avg Daily Jail Population	146.51*	116.03	160.41
	(426.30)	(180.16)	(499.20)
Rated capacity	141.83+	122.54	150.84
	(307.87)	(186.55)	(350.16)
Total new admissions	1381.99**	1104.39	1511.08
	(2510.62)	(1857.78)	(2753.46)
Total final discharges	1342.94***	1012.57	1489.96
	(2500.04)	(1827.17)	(2735.00)
Jail occupancy rate	0.84**	0.81	0.86
	(0.34)	(0.33)	(0.34)
Discharge/admission ratio	1.00	1.01	1.00
	(0.55)	(0.68)	(0.49)
1(Jail occupancy rate>0.95)	0.31	0.31	0.31
	(0.46)	(0.46)	(0.46)
1(Admission>Discharge)	0.58	0.56	0.59
	(0.49)	(0.50)	(0.49)
Tenure	6.19***	4.63	7.16
	(5.27)	(3.16)	(6.04)
Percent female	50.58*	50.61	50.56
	(1.15)	(1.26)	(1.08)
Percent white	95.74***	96.28	95.41
	(6.48)	(6.35)	(6.53)
Percent black	2.03***	2.15	1.96
	(2.88)	(3.64)	(2.27)
Income per capita (in thousands)	32.63***	34.06	31.73
	(14.29)	(14.77)	(13.91)
Employment per capita	47.26***	45.78	48.19
	(12.73)	(12.27)	(12.92)
Population coverage per agency	31240.44***	25532.53	34811.80
	(35107.86)	(27608.98)	(38649.71)
Observations	14519	5588	8931

*** p<0.001, ** p<0.01, * p<0.05, + p<0.1 for indicating statistical difference between groups

Notes: standard deviations are in parenthesis. Avg Daily Jail Population indicates the average inmates population across the year. Jail occupancy rate is defined as the average daily population divided by the rated capacity. 1(Jail occupancy rate>0.95) is coded as 1 if the jail occupancy rate is greater than 95%. Discharge per admission ratio is defined as the total new admissions divided by the total final discharges. 1(Admission>Discharge) is coded as 1 when the discharge per admission ratio is less than 1.

Table 2: OLS, First Stage, Reduced Form, and 2SLS Estimates of the Effect of Sheriff Tenure on Jail Occupancy Rate

	OLS	First	Reduced	2SLS
Tenure	0.001			0.055*
	(0.002)			(0.026)
Term limit		-3.083***	-0.171*	
		(0.639)	(0.076)	
Observations	1735	1735	1735	1735
Mean of Dept. Var.	0.841	5.703	0.841	0.841
R^2	0.342	0.340	0.345	-0.616
F stat		23.26		
State by Year FE	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1
Notes: these regressions report the effect of the sheriff tenure on the jail occupancy rate. Each column indicates OLS, first stage, reduced form and 2SLS estimates. The jail occupancy rate is calculated as the number of average inmates in the year divided by the rated capacity of the facility. The unit of observation is the county-year level. The average jail occupancy rate is 0.841.

Table 3: OLS, First Stage, Reduced Form, and 2SLS Estimates of the Effect of Sheriff Tenure on 1(Jail Occupancy Rate>0.95)

	OLS	First	Reduced	2SLS
Tenure	-0.001			0.036*
	(0.003)			(0.018)
Term limit		-3.083***	-0.112$^+$	
		(0.639)	(0.059)	
Observations	1735	1735	1735	1735
Mean of Dept. Var.	0.312	5.703	0.312	0.312
R^2	0.228	0.340	0.229	-0.115
F stat		23.26		
State by Year FE	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1
Notes: these regressions report the effect of the sheriff tenure on 1(Jail occupancy rate>0.95), which measures whether the jail occupancy rate is greater than 95%. Thus, the current model is a linear probability model with the likelihood of jail overcrowding being the binary dependant variable. OLS, first stage, reduced form and 2SLS estimates are presented. The unit of observation is the county-year level. The average of *1(Jail occupancy rate>0.95)* is 0.312. At the mean, the effect size, 0.036, is an approximately 11.54% increase in jails above the 95% threshold.

Table 4: OLS, First Stage, Reduced Form, and 2SLS Estimates of the Effect of Sheriff Tenure on Jail Discharge/admission Ratio

	OLS	First	Reduced	2SLS
Tenure	-0.004			-0.086*
	(0.004)			(0.039)
Term limit		-3.086***	0.267*	
		(0.805)	(0.120)	
Observations	1336	1336	1336	1336
Mean of Dept. Var.	1.0005	5.329	1.0005	1.0005
R^2	0.136	0.368	0.139	-0.369
F stat		14.70		
State by Year FE	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1
Notes: these regressions report the effect of the sheriff tenure on the discharge to admission ratio. OLS, first stage, reduced form and 2SLS estimates are presented. The discharge/admission ratio is calculated as the number of discharged inmates divided by the number of admitted inmates. The unit of observation is the county-year level. The average jail discharge per admission ratio is 1.0005.

Table 5: OLS, First Stage, Reduced Form, and 2SLS Estimates of the Effect of Sheriff Tenure on *1(Admission>Discharge)*

	OLS	First	Reduced	2SLS
Tenure	0.003			0.074*
	(0.003)			(0.037)
Term limit		-3.086***	-0.228$^+$	
		(0.805)	(0.134)	
Observations	1336	1336	1336	1336
Mean of Dept. Var.	0.579	5.329	0.579	0.579
R^2	0.105	0.368	0.107	-0.340
F stat		14.70		
State by Year FE	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.1
Notes: these regressions report the effect of the sheriff tenure on 1(Admission>Discharge), which measures whether overall inmate admissions is greater than overall inmate discharges. Thus, the current model is a linear probability model with the likelihood of jail overcrowding being the binary dependant variable of whether admissions exceed discharges. OLS, first stage, reduced form and 2SLS estimates are presented. The unit of observation is the county-year level. The average 1(Admission>Discharge) is 0.579, which means the effect size, 0.074, accounts for a 12.78% increase over the mean.

Table 6: Examining Jail Occupancy Rate in Democratic Party Dominant Locations without Political Competition

	OLS	First	Reduced	2SLS
Tenure	-0.003			0.081*
	(0.004)			(0.040)
Term limit		-3.135**	-0.254*	
		(1.127)	(0.125)	
Observations	499	499	499	499
Mean of Dept. Var.	0.841	5.106	0.841	0.841
R^2	0.409	0.495	0.415	-1.117
F stat		7.74		
State by Year FE	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.10
Notes: this table presents results from a subset for OLS, first stage, reduced form, and 2SLS estimates of the effect of sheriff tenure on jail occupancy rate.
Notes: we calculated the ratio of Democratic votes to the sum of Democratic and Republican vote shares and subtracted 0.5 to obtain the vote margin variable. The information for the relative vote share comes from county level votes for state legislature elections including those for governors, senators, U.S. representatives, state offices, and presidents every other year, after filling in information of the missing years. The political competition measure is then calculated using the vote margins generated above. A binary variable is generated measuring whether the continuous vote margins are *tight* based on five year moving average of vote margins. Vote margins are considered to be *tight* when they are between the moving average +/- the standard deviation divided by 3.

Table 7: Examining Jail Occupancy Rate in Democratic Party Dominant Locations with Political Competition

	OLS	First	Reduced	2SLS
Tenure	0.012^{+}			0.059
	(0.007)			(0.046)
Term limit		-4.802	-0.285^{+}	
		(3.998)	(0.148)	
Observations	169	169	169	169
Mean of Dept. Var.	0.889	6.139	0.889	0.889
R^2	0.488	0.448	0.474	-0.386
F stat		1.44		
State by Year FE	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.10
Notes: we calculated the ratio of Democratic votes to the sum of Democratic and Republican vote shares and subtracted 0.5 to obtain the vote margin variable. The information for the relative vote share comes from county level votes for state legislature elections including those for governors, senators, U.S. representatives, state offices, and presidents every other year, after filling in information of the missing years. The political competition measure is then calculated using the vote margins generated above. A binary variable is generated measuring whether the continuous vote margins are *tight* based on five year moving average of vote margins. Vote margins are considered to be *tight* when they are between the moving average +/- the standard deviation divided by 3.

Table 8: Examining Jail Occupancy Rate in Republican Party Dominant Locations without Political Competition

	OLS	First	Reduced	2SLS
Tenure	-0.002			0.049
	(0.004)			(0.031)
Term limit		-3.621**	-0.176*	
		(1.202)	(0.082)	
Observations	740	740	740	740
Mean of Dept. Var.	0.832	5.689	0.832	0.832
R^2	0.404	0.400	0.405	-0.501
F stat		9.07		
State by Year FE	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.10
Notes: we calculated the ratio of Democratic votes to the sum of Democratic and Republican vote shares and subtracted 0.5 to obtain the vote margin variable. The information for the relative vote share comes from county level votes for state legislature elections including those for governors, senators, U.S. representatives, state offices, and presidents every other year, after filling in information of the missing years. The political competition measure is then calculated using the vote margins generated above. A binary variable is generated measuring whether the continuous vote margins are *tight* based on five year moving average of vote margins. Vote margins are considered to be *tight* when they are between the moving average +/- the standard deviation divided by 3.

Table 9: Examining Jail Occupancy Rate in Republican Party Dominant Locations with Political Competition

	OLS	First	Reduced	2SLS
Tenure	-0.001			-1.000
	(0.005)			(19.217)
Term limit		-0.200	0.200*	
		(3.927)	(0.097)	
Observations	210	210	210	210
Mean of Dept. Var.	0.836	6.684	0.836	0.836
R^2	0.402	0.466	0.403	-168.091
F stat		0.00		
State by Year FE	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.10
Notes: we calculated the ratio of Democratic votes to the sum of Democratic and Republican vote shares and subtracted 0.5 to obtain the vote margin variable. The information for the relative vote share comes from county level votes for state legislature elections including those for governors, senators, U.S. representatives, state offices, and presidents every other year, after filling in information of the missing years. The political competition measure is then calculated using the vote margins generated above. A binary variable is generated measuring whether the continuous vote margins are *tight* based on five year moving average of vote margins. Vote margins are considered to be *tight* when they are between the moving average +/- the standard deviation divided by 3.

Table 10: OLS, First Stage, Reduced Form, and 2SLS Estimates of the Effect of Sheriff Tenure on Jail Occupancy Rate with State and Year Fixed Effects

	OLS	First	Reduced	2SLS
Tenure	-0.001			0.055^{+}
	(0.002)			(0.028)
Term limit		-2.939***	-0.161*	
		(0.560)	(0.078)	
Observations	1756	1756	1756	1756
Mean of Dept. Var.	0.841	5.703	0.841	0.841
R^2	0.196	0.246	0.198	-0.660
F stat		27.57		
State and Year FE	Yes	Yes	Yes	Yes
Covariates	No	No	No	No

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.10
Notes: these regressions report the effect of the sheriff tenure on the jail occupancy rate. OLS, first stage, reduced form and 2SLS estimates are presented. The jail occupancy rate is calculated as the number of average inmates in the year divided by the rated capacity of the facility. The unit of observation is the county-year level. The fixed effects include state fixed effects and year fixed effects.

Table 11: OLS, First Stage, Reduced Form, and 2SLS Estimates of the Effect of Sheriff Tenure on Jail Occupancy Rate with State and Year Fixed Effects and Covariates

	OLS	First	Reduced	2SLS
Tenure	-0.001			0.049^{+}
	(0.002)			(0.026)
Term limit		-3.151***	-0.153*	
		(0.702)	(0.076)	
Observations	1756	1756	1756	1756
Mean of Dept. Var.	0.841	5.703	0.841	0.841
R^2	0.215	0.251	0.217	-0.502
F stat		20.15		
State and Year FE	Yes	Yes	Yes	Yes
Covariates	Yes	Yes	Yes	Yes

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.10
Notes: these regressions report the effect of the sheriff tenure on the jail occupancy rate. OLS, first stage, reduced form and 2SLS estimates are presented. The jail occupancy rate is calculated as the number of average inmates in the year divided by the rated capacity of the facility. The unit of observation is the county-year level. The fixed effects include state fixed effects and year fixed effects with covariates.

Table 12: OLS, First Stage, Reduced Form, and 2SLS Estimates of the Effect of Sheriff Tenure on Jail Occupancy Rate with State by Year Fixed Effects

	OLS	First	Reduced	2SLS
Tenure	0.001			0.058*
	(0.002)			(0.029)
Term limit		-2.857***	-0.167*	
		(0.527)	(0.079)	
Observations	1735	1735	1735	1735
Mean of Dept. Var.	0.841	5.703	0.841	0.841
R^2	0.320	0.337	0.323	-0.711
F stat		29.36		
State by Year FE	Yes	Yes	Yes	Yes
Covariates	No	No	No	No

Robust standard errors in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.10
Notes: these regressions report the effect of the sheriff tenure on the jail occupancy rate. OLS, first stage, reduced form and 2SLS estimates are presented. The jail occupancy rate is calculated as the number of average inmates in the year divided by the rated capacity of the facility. The unit of observation is the county-year level. The fixed effects include state by year fixed effects.

Figure 1: Tenure Length by Term Limits

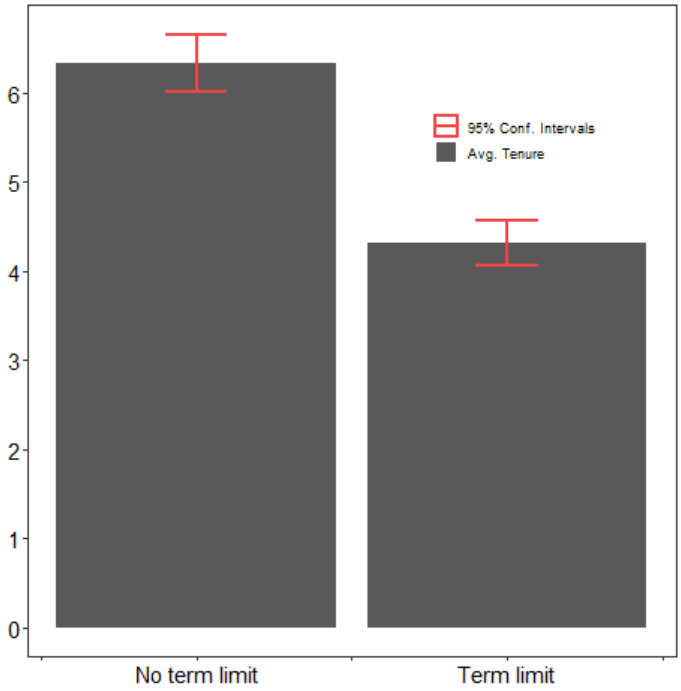


Figure 2: Jail Occupancy Rates by Term Limits

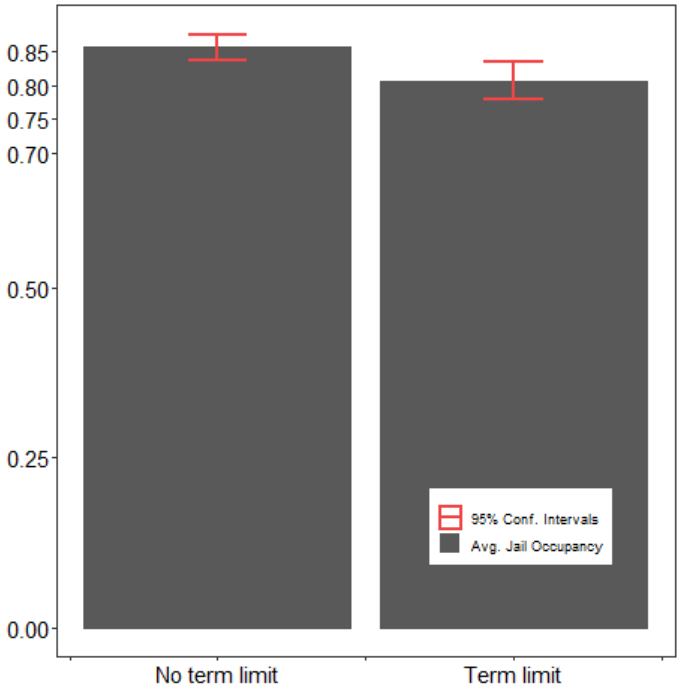
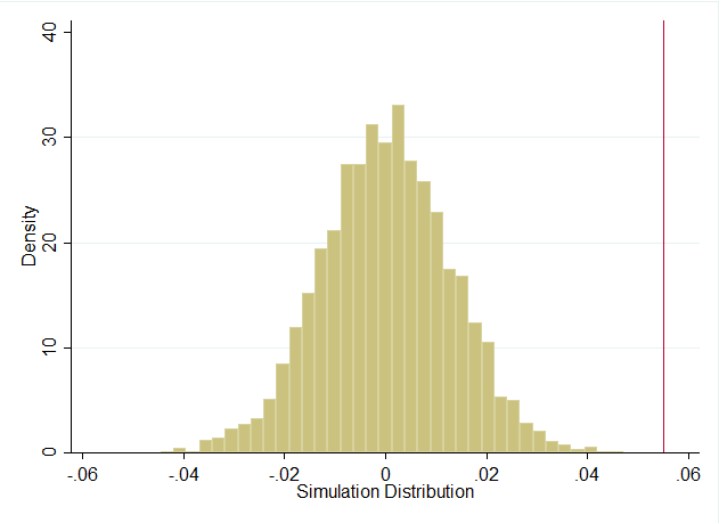


Figure 3: Distribution of Simulated Estimates



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Appendix A

Table 13: List of term limited locations used in the analysis

Conejos County, CO	Gibson County, IN	Porter County, IN	Guadalupe County, NM	Pleasants County, WV
Costilla County, CO	Grant County, IN	Posey County, IN	Hidalgo County, NM	Pocahontas County, WV
Douglas County, CO	Greene County, IN	Pulaski County, IN	Lea County, NM	Preston County, WV
Elbert County, CO	Hamilton County, IN	Putnam County, IN	Luna County, NM	Putnam County, WV
Jefferson County, CO	Hancock County, IN	Randolph County, IN	McKinley County, NM	Raleigh County, WV
Moffat County, CO	Harrison County, IN	Ripley County, IN	Otero County, NM	Randolph County, WV
Montezuma County, CO	Hendricks County, IN	Rush County, IN	Quay County, NM	Ritchie County, WV
Teller County, CO	Henry County, IN	Scott County, IN	Roosevelt County, NM	Summers County, WV
Weld County, CO	Howard County, IN	Shelby County, IN	Sandoval County, NM	Taylor County, WV
Yuma County, CO	Huntington County, IN	Spencer County, IN	San Juan County, NM	Tyler County, WV
Adams County, IN	Jackson County, IN	Starke County, IN	Sierra County, NM	Upshur County, WV
Allen County, IN	Jasper County, IN	Steuben County, IN	Socorro County, NM	Wayne County, WV
Bartholomew County, IN	Jay County, IN	Sullivan County, IN	Barbour County, WV	Wirt County, WV
Benton County, IN	Jefferson County, IN	Switzerland County, IN	Berkeley County, WV	Wood County, WV
Blackford County, IN	Jennings County, IN	Tippecanoe County, IN	Braxton County, WV	Wyoming County, WV
Boone County, IN	Johnson County, IN	Tipton County, IN	Brooke County, WV	
Brown County, IN	Knox County, IN	Union County, IN	Cabell County, WV	
Carroll County, IN	LaGrange County, IN	Vanderburgh County, IN	Doddridge County, WV	
Cass County, IN	Lake County, IN	Vermillion County, IN	Fayette County, WV	
Clark County, IN	LaPorte County, IN	Vigo County, IN	Grant County, WV	
Clay County, IN	Lawrence County, IN	Wabash County, IN	Greenbrier County, WV	
Clinton County, IN	Madison County, IN	Warren County, IN	Hampshire County, WV	
Crawford County, IN	Marshall County, IN	Warrick County, IN	Hancock County, WV	
Daviess County, IN	Martin County, IN	Washington County, IN	Harrison County, WV	
Dearborn County, IN	Miami County, IN	Wayne County, IN	Jackson County, WV	
Decatur County, IN	Monroe County, IN	Wells County, IN	Kanawha County, WV	
DeKalb County, IN	Montgomery County, IN	White County, IN	McDowell County, WV	
Delaware County, IN	Morgan County, IN	Whitley County, IN	Marion County, WV	
Dubois County, IN	Newton County, IN	Bernalillo County, NM	Marshall County, WV	
Elkhart County, IN	Noble County, IN	Catron County, NM	Mason County, WV	
Fayette County, IN	Orange County, IN	Chaves County, NM	Mineral County, WV	
Floyd County, IN	Owen County, IN	Colfax County, NM	Mingo County, WV	
Fountain County, IN	Parke County, IN	Curry County, NM	Monongalia County, WV	
Franklin County, IN	Perry County, IN	Dona Ana County, NM	Ohio County, WV	
Fulton County, IN	Pike County, IN	Grant County, NM	Pendleton County, WV	

Table 14: List of non term limited locations used in the analysis

Blount County, AL	Dubuque County, IA	Ottawa County, MI	Clark County, OH	Orange County, TX
Cleburne County, AL	Johnson County, IA	Presque Isle County, MI	Clermont County, OH	Parker County, TX
Cullman County, AL	Linn County, IA	St. Clair County, MI	Coshocton County, OH	Randall County, TX
DeKalb County, AL	Mills County, IA	St. Joseph County, MI	Crawford County, OH	Roberts County, TX
Franklin County, AL	Pottawattamie County, IA	Sanilac County, MI	Defiance County, OH	San Patricio County, TX
Jackson County, AL	Scott County, IA	Tuscola County, MI	Delaware County, OH	Starr County, TX
Marshall County, AL	Story County, IA	Wexford County, MI	Fairfield County, OH	Sutton County, TX
Walker County, AL	Wapello County, IA	Anoka County, MN	Fulton County, OH	Uvalde County, TX
Apache County, AZ	Warren County, IA	Carlton County, MN	Gallia County, OH	Val Verde County, TX
Coconino County, AZ	Osage County, KS	Clay County, MN	Geauga County, OH	Webb County, TX
Maricopa County, AZ	Boone County, KY	Dakota County, MN	Hardin County, OH	Winkler County, TX
Navajo County, AZ	Carter County, KY	Kanabec County, MN	Harrison County, OH	Cache County, UT
Pima County, AZ	Clark County, KY	Koochiching County, MN	Henry County, OH	Davis County, UT
Santa Cruz County, AZ	Floyd County, KY	St. Louis County, MN	Hocking County, OH	Grand County, UT
Randolph County, AR	Grant County, KY	Scott County, MN	Huron County, OH	San Juan County, UT
Saline County, AR	Harlan County, KY	Sherburne County, MN	Jackson County, OH	Tooele County, UT
Butte County, CA	Kenton County, KY	Stearns County, MN	Lake County, OH	Utah County, UT
El Dorado County, CA	McCracken County, KY	Washington County, MN	Lawrence County, OH	Weber County, UT
Madera County, CA	McCreary County, KY	Winona County, MN	Lorain County, OH	Botetourt County, VA
Mendocino County, CA	Madison County, KY	Andrew County, MO	Mahoning County, OH	Buchanan County, VA
Orange County, CA	Magoffin County, KY	Bollinger County, MO	Medina County, OH	Dickenson County, VA
Placer County, CA	Meade County, KY	Cass County, MO	Miami County, OH	Floyd County, VA
Plumas County, CA	Ohio County, KY	Clay County, MO	Portage County, OH	Giles County, VA
Santa Cruz County, CA	Spencer County, KY	Greene County, MO	Scioto County, OH	Grayson County, VA
Shasta County, CA	Livingston Parish, LA	Polk County, MO	Seneca County, OH	Lee County, VA
Sonoma County, CA	St. Bernard Parish, LA	Reynolds County, MO	Tuscarawas County, OH	Page County, VA
Stanislaus County, CA	St. Tammany Parish, LA	St. Charles County, MO	Warren County, OH	Pulaski County, VA
Trinity County, CA	Aroostook County, ME	Custer County, MT	Washington County, OH	Russell County, VA
Yuba County, CA	Hancock County, ME	Dawson County, MT	Wood County, OH	Scott County, VA
Adams County, CO	Kennebec County, ME	Flathead County, MT	Cleveland County, OK	Smyth County, VA
Alamosa County, CO	Knox County, ME	Gallatin County, MT	McClain County, OK	Tazewell County, VA
Arapahoe County, CO	Lincoln County, ME	Hill County, MT	Mayes County, OK	Wythe County, VA
Archuleta County, CO	Penobscot County, ME	Missoula County, MT	Pottawatomie County, OK	Brown County, WI
Boulder County, CO	Piscataquis County, ME	Musselshell County, MT	Pushmataha County, OK	Calumet County, WI
Clear Creek County, CO	Somerset County, ME	Yellowstone County, MT	Hughes County, SD	Dane County, WI
Gilpin County, CO	Allegany County, MD	Adams County, NE	Minnehaha County, SD	Douglas County, WI
Grand County, CO	Garrett County, MD	Cass County, NE	Pennington County, SD	Eau Claire County, WI
Gunnison County, CO	Allegan County, MI	Hall County, NE	Bradley County, TN	Fond du Lac County, WI
Huerfano County, CO	Alpena County, MI	Lancaster County, NE	Campbell County, TN	Grant County, WI
Lake County, CO	Arenac County, MI	Lyon County, NV	Cannon County, TN	La Crosse County, WI
La Plata County, CO	Barry County, MI	Cheshire County, NH	Franklin County, TN	Manitowoc County, WI
Larimer County, CO	Bay County, MI	Merrimack County, NH	Hamblen County, TN	Marathon County, WI
Park County, CO	Branch County, MI	Alexander County, NC	Jefferson County, TN	Portage County, WI
Pueblo County, CO	Charlevoix County, MI	Ashe County, NC	Knox County, TN	Rock County, WI
Banks County, GA	Clare County, MI	Buncombe County, NC	McMinn County, TN	Washington County, WI
Cherokee County, GA	Clinton County, MI	Caldwell County, NC	Macon County, TN	Waukesha County, WI
Dade County, GA	Eaton County, MI	Cherokee County, NC	Meigs County, TN	Winnebago County, WI
Dawson County, GA	Gladwin County, MI	Clay County, NC	Roane County, TN	Albany County, WY
Forsyth County, GA	Grand Traverse County, MI	Dare County, NC	Sullivan County, TN	Campbell County, WY
Gilmer County, GA	Hillsdale County, MI	Haywood County, NC	Atascosa County, TX	Fremont County, WY
Haralson County, GA	Isabella County, MI	Jackson County, NC	Brooks County, TX	Natrona County, WY
Rabun County, GA	Kalkaska County, MI	Lincoln County, NC	Callahan County, TX	Sheridan County, WY
Ada County, ID	Lapeer County, MI	McDowell County, NC	Clay County, TX	Sweetwater County, WY
Bannock County, ID	Lenawee County, MI	Randolph County, NC	Comal County, TX	
Benewah County, ID	Livingston County, MI	Stokes County, NC	Culberson County, TX	
Bonner County, ID	Macomb County, MI	Surry County, NC	Denton County, TX	
Bonneville County, ID	Marquette County, MI	Watauga County, NC	Ector County, TX	
Boundary County, ID	Mecosta County, MI	Wilkes County, NC	El Paso County, TX	
Valley County, ID	Midland County, MI	Yadkin County, NC	Hardin County, TX	
Tazewell County, IL	Missaukee County, MI	Yancey County, NC	Hutchinson County, TX	
Whiteside County, IL	Monroe County, MI	Burleigh County, ND	Kinney County, TX	
Black Hawk County, IA	Newaygo County, MI	Cass County, ND	Lubbock County, TX	
Cerro Gordo County, IA	Oceana County, MI	Ashland County, OH	Maverick County, TX	
Clarke County, IA	Ogemaw County, MI	Butler County, OH	Montgomery County, TX	
Des Moines County, IA	Osceola County, MI	Champaign County, OH	Moore County, TX	