The States of American Bureaucracy

by

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DISSERTATION

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DEDICATION

For mom and dad

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ABSTRACT

Excessive employee departures from the public sector can hinder government operations and performance. Yet, turnover is a feature of any organization and, in the case of public sector organizations, is necessary for retaining democratic accountability. Across three papers, I examine the causes of bureaucratic turnover, focusing on the cases of civil service reform and poor working conditions in the U.S. states. Using new individual-level personnel data collected via public records requests, I provide the most detailed existing overview of who works in U.S. state government. In the first two papers, I use these records, in conjunction with voter registration data and other data sources, to examine how rolling back employees' civil service protections impacts turnover. Focusing on cases of civil service reform in Mississippi and Florida, I show that weakening employees' tenure protections led to increased departures in poorly performing and particularly salient agencies. However, I do not find any evidence that political opponents were targeted for removal or, in the case of Florida, that removing tenure protections led to a large, consistent increase in exits across the workforce. In the final paper, I examine how employees' working conditions impact departures, focusing on the timely case of excessive heat in Texas state prisons. I show that correctional officers working in prisons without air conditioning are more likely to exit the workforce. This finding is isolated to newer employees less acclimated to the heat and frontline employees with less access to cooled administrative areas. Overall, my project offers a detailed, comparative examination of who works in state government and why they leave their positions.

CHAPTER 1

Introduction

Bureaucrats learn by doing. Neither the private sector nor additional schooling can teach someone to effectively evaluate hazardous waste sites, safely de-escalate a prison fight, or shepherd a regulation past opposing legislators and interest groups. These are skills learned on the job and cultivated over time. Consequently, experience is an important ingredient for skilled administration. Without time to figure out necessary firm-specific skills, knowledge, and expertise, it is challenging for bureaucrats to competently perform their roles.

If experience and longevity can help facilitate improved performance, then excessive turnover can be particularly damaging to public agencies. As employees depart, regardless of whether it is voluntarily or involuntarily, they take with them institutionalized knowledge about how to do their jobs that can be difficult to replace. New employees, if they can be quickly found and onboarded, need time to learn how to do their jobs. Remaining employees may face increased workloads and declining morale, further impacting performance.

In part, merit-based civil service systems help reduce the negative consequences of excessive public sector turnover. Hiring employees on merit and providing tenure protections from politically motivated dismissal can increase the length of employment spells and productivity (Gailmard and Patty 2007; Gailmard and Patty 2012; Aneja and Xu 2023). However, civil service protections are imperfect. Insulating public sector employees from hasty termination can lead to free-riding (Gibbs 2020), and critics of tenure protections often argue that they impede bureaucracies' efficiency and accountability. In line with these critiques, recent

decades have seen a rollback of civil service protections at both the federal and state levels, raising the possibility of increased public sector employee churn. Furthermore, even when civil service protections fully insulate employees, high turnover can still result. Civil service protections cannot keep employees from departing due to insufficient pay, minimal career prospects, or poor working conditions.

Across three papers, I examine how tenure protections, political conflict, and workplace conditions shape departures from the U.S. states' public sectors. I focus on the states because of the relative imbalance between state agencies' influence and scholars' understanding of how they are staffed and controlled. Among other responsibilities, state agencies operate massive carceral systems, spend billions of dollars on transportation projects, and administer numerous social safety programs. Yet, despite their importance, most studies of American bureaucracies focus on federal agencies or specific local agencies, such as municipal police departments. Between 2000 and 2022, only 14% of papers on U.S. bureaucracies in the *Journal of Politics*, *American Journal of Political Science*, and *American Political Science Review* focused on state bureaucracies (Brierely et al. 2023). Furthermore, the states can serve as a useful testing ground for evaluating institutional arrangements and policies not found at the federal level. For instance, the Trump administration is currently exploring making it easier to fire civil servants. But the freshness of these policies hinders evaluation. The states, in contrast, have been implementing these types of rollbacks for decades, offering a window into their effects on personnel management and workforce exits.

All three papers in my dissertation examine why state public employees leave their jobs. The cases, independent variables, and contributions, however, are distinct. In the first two papers, I examine whether political conflict moderates departures and dismissals in the wake of the rollback of civil service protections in Mississippi and Florida. Departures serve as a lens for examining how governors and agency heads manage workforces after employees become easier to terminate. The third paper, in contrast, examines how workplace conditions influence departures, focusing on the particularly salient case of the role of excessive heat in

fostering turnover among correctional officers in Texas. In this paper, studying departures sheds light on how poor workplace conditions influence correctional officer turnover.

Although distinct, the papers share a common data lineage. Each paper relies on individual-level personnel rosters of state employees. Via state-by-state public records requests to states' human resource agencies, I collected detailed records of public employees within 24 states' executive branches. The dataset includes nearly two million employees and forty-two million employee-period observations. In most states, the records cover nearly all public employees in a state — everyone from correctional officers and nurses to governors' chiefs of staff and agency heads. The records are structured as repeated cross-sectional snapshots of the workforce and let me follow employees as they enter and depart the public sector. In addition to noting employees' names, agencies, job titles, and salaries, a number of states provide information about employees' race, sex, and counties of employment. I also impute employees' partisan registration status using voter registration data, which provides a fine-grained measure of employees' political alignment with elected officials.

In the first paper, I introduce the personnel and voter registration data that form the core of the dissertation. I show that the senior echelons of many Republican-controlled states' workforces, especially in the South, are staffed by a disproportionate number of Democrats. This divergence in political views sets up the possibility that outpartisan Democratic civil servants are targeted for removal following the rollback of civil service protections, which I test for using the unique case of Mississippi temporarily removing civil service protections for certain agencies following major scandals. However, I show that following the rollback of civil service protections in five agencies between 2014 and 2020, the state did not remove political opponents from the workforce. Instead, longer-serving employees were more likely to depart, suggesting that executives were more concerned with removing employees viewed as attached to the indicted status quo than partisan opponents.

The Mississippi case is suitable for testing whether removing tenure protections increases the probability of individual outpartisan employees departing relative to their still-protected

peers in other agencies. However, since civil service exemptions in Mississippi occurred in agencies following policy failures, the case has less leverage over which agency-level factors moderate targeting and departures in the wake of civil service rollbacks. In the second paper, therefore, I examine employee departures following Florida's 2001 civil service reform, which removed tenure protections for over 16,000 mid-level managerial, confidential, and supervisory positions across the state's public sector. Interestingly, I not only find no evidence that employees in agencies comprised of more Democrats were at greater risk of leaving following the rollback of protections, but overall departures among affected employees did not increase until approximately 18 months after reform. There is little additional evidence of strategic dismissals following the removal of protections, as more influential employees were no more likely to depart in politically distal or fiscally constrained agencies.

However, I do find some evidence of increased departures in a Florida agency particularly important to then-Governor Jeb Bush's policy agenda. Eighteen months after the removal of tenure protections in Florida, a constitutional referendum in the state gave the governor increased control over the Department of Education. This is particularly noteworthy because, at the time, Jeb Bush was keenly interested in education reform. Expanding school vouchers and increased testing were key planks of his 1998 and 2002 gubernatorial campaigns, and his relationship with the state's Department of Education was icy. I demonstrate that right around the onset of Bush gaining greater control of the department in 2003, a large spike in employee departures occurs. This increase in departures only occurs among employees who lost their protections during the 2001 civil service reforms. Via a placebo test, I show that unprotected employees in Florida's Department of State, which also fell under greater gubernatorial control in 2003 but was less important to Bush, were not at increased risk of departing following reorganization.

In the first two papers, I use individual-level personnel data to examine the ramifications of states making it easier to terminate public employees. In the third paper, I switch focus and, along with my co-author Jacob Harris, examine how street-level bureaucrats' work-

ing conditions influence their willingness to remain in their roles. We use a particularly salient and timely case: the impact of excessive heat on the probability of Texas correctional officers quitting their jobs. States across the country are struggling with understaffing in their prisons, putting both employees and incarcerated individuals in danger. At the same time, very few states' prison systems have universal air conditioning, resulting in sweltering summer conditions that have been linked to worse health outcomes and increased violence (Skarha et al. 2022; Mukherjee and Sanders 2021). Despite a number of anecdotal reports suggesting that excessive heat in prisons also impacts correctional officers, no studies have systematically examined the relationship between air conditioning and important employee outcomes, such as departures.

We examine the impact of air conditioning on correctional officers' willingness to stay in their jobs using personnel data from the Texas Department of Criminal Justice that cover each month from January 2010 to January 2023. Pairing these detailed records with facility-level information on air-conditioning coverage, we show that, holding constant a series of individual-, prison-, and state-level variables, the odds of a correctional officer departing in a given month before the onset of the COVID-19 pandemic were on average 21% higher for employees working in prisons without any air conditioning. Notably, this finding is driven by the employees we most expect to be affected by the heat: frontline correctional officers and new employees less acclimated to the heat. We also provide some suggestive evidence that air conditioning matters more, at least for inexperienced employees, in the summer months. Overall, our findings from Texas suggest that while air conditioning does not alleviate all of the problems faced by correctional officers, it does impact employees' decisions to remain in their positions.

Despite their differences, the three papers offer some common takeaways and pathways for future research. For one, the papers all highlight the limitations of ideological and partisan conflict in explaining bureaucratic turnover. At the federal level, a large body of work has shown that we should expect to see more strategic opt outs, targeted dismissals,

and decreased motivation among senior employees who oppose a presidential administration. For the most part, these results do not appear to replicate at the state level. I do not find any evidence in either Mississippi or Florida that the Republican administrations targeted Democratic employees or agencies following the rollback of civil service protections. Notably, these null findings exist despite, as I show in the first paper, the relatively large number of Democrats working in important positions within these states' workforces.

There are various potential reasons for my null findings regarding political targeting. However, I think the simplest is that actual partisan conflict between bureaucrats and their principals in the states is low. As highlighted recently by Richardson (2024) in the context of federal agencies, ideological differences do not necessarily lead to political conflict. This is especially the case when agencies' responsibilities are not particularly ideological, which is likely especially the case at the state level. Even with some state governors gaining national attention for policymaking, most of what states do does not garner the same intense, polarizing attention that federal agencies increasingly receive. As a result, for many people, working in state government is not an ideological or political act. Many Democrats are seemingly willing to spend decades working for governments controlled by Republicans. These state employees are either willing to implement policies that they do not necessarily prefer or do not view their public sector positions as supporting an opposing administration. Either option should result in little conflict between bureaucrats and their political principals.

Nevertheless, I do not show that state bureaucracies are deprived of conflict. Poor performance, seniority, and working in a salient agency that often disagrees with political leaders can all lead to an increased likelihood of being dismissed or departing following the rollback of civil service protections. As a result, even though I do not find evidence for the type of political cronyism feared by some critics of civil service reform, my results do suggest that removing tenure protections can lead to more strategic management of personnel. In Mississippi and Florida this did not manifest as ideological or partisan targeting, but it could in other political environments.

Ultimately, my dissertation serves as a jumping off point for additional research on state agencies. Famously called the "laboratories of democracy," the states are also laboratories of bureaucratic organization and management. I hope other scholars will utilize my data and findings to further our collective understanding of these important institutions of American government.

CHAPTER 2

Partisan Departures from the Administrative States

Newly-elected executives in the United States inherit expansive bureaucracies.[1] The curtailment of spoils in the 19th and 20th centuries by merit-based civil service systems insulated many bureaucrats from losing their jobs after an incumbent's electoral loss (Skowronek 1982; Ting et al. 2013; Anzia and Trounstine 2023). As a result, contemporary executives often pick their own staffs, agency heads, and other high-ranking department employees but lack direct control over who works in most government positions. This can lead presidents and governors to become frustrated at bureaucrats' perceived incompetence or subversion, most recently exemplified by President Trump's frequent references to a "Deep State" of political opponents upsetting his policy goals (Clark, n.d.).

If executives are sometimes frustrated with career employees, what happens when they gain a free hand to manage employees previously covered by merit protections? Over the last three decades, a number of U.S. states have reclassified some or all bureaucrats from a protected civil service to an unclassified service. Reclassification makes it easier to terminate bureaucrats, which proponents argue increases managers' flexibility and employees' incentives to exert effort on the job (Sherk 2021; Ichino and Riphahn 2005; Martins 2009). Yet, removing employees' protections can also introduce partisanship and ideology as possible criteria for professional advancement within public bureaucracies. Following reclassification,

1. Unless otherwise noted, I use "executives" to refer to both presidents and governors.

do governors and their political appointees take advantage of this opportunity to remove political opponents from the bureaucracy?

Testing for political targeting in the wake of reclassification requires detailed data on state bureaucrats' political views and employment histories. I introduce such data here. Using a new dataset of individual-level personnel and voter registration records of nearly 2 million unique bureaucrats (and over 42 million bureaucrat-period observations) across twenty-four U.S. states, I first show that the conditions for political targeting exist in state workforces. While a large body of work has measured and documented the consequences of political conflict between presidents and bureaucrats at the federal level (e.g., Richardson 2024; Potter 2017; Bolton, de Figueiredo, and Lewis 2021; Spenkuch, Teso, and Xu 2023; Doherty, Lewis, and Limbocker 2019a; Chen and Johnson 2014; Napolio 2023), data limitations have hindered similar studies in the states. I show that partisan control of government does not determine the partisan composition of senior echelons of the workforce. Many Republican-dominated states—the states most likely to reclassify bureaucrats into at-will positions (McGrath 2013)—have bureaucracies that are disproportionately staffed with influential Democrats.

Given the possible tensions in Republican-controlled states between senior Democratic bureaucrats and their principals, I test whether reclassification increases the likelihood of Democratic employees leaving the state workforce. I focus on the case of civil service retrenchment in Mississippi, a state seemingly likely to experience political targeting due to Republicans' control of state government (Grumbach 2023) and its history of public corruption (Glaeser and Saks 2006; Liu and Mikesell 2014). Since 1988, agencies in Mississippi have been periodically exempted from the civil service system. Between 2014 and 2020, five Mississippi state agencies received temporary exemptions from hiring, firing, and compensation rules (*PEER Report 670* 2022; *PEER Report 651* 2020). These exemptions, largely issued in the wake of significant scandals or policy failures, provided the governor and agency leaders considerable leeway to remove career bureaucrats.

Via a series of synthetic control models, I first demonstrate—using additional agency-level data on the number of terminations per month from 2005 to 2020—that involuntary dismissals dramatically increased after exemptions from the state's merit system. Immediately following reclassification, terminations increased by 5 to 10 percentage points depending on the agency. These are large treatment effects: 171% to 634% increases relative to pre-exemption dismissal rates. Although reclassification led to large-scale dismissals, I find no evidence at the individual level that Democratic bureaucrats were more likely to depart than their Republican peers following the loss of job protections. I show that employees' time spent in the public workforce, not their personal political views, is a key factor in explaining which employees departed following the exemptions.

What can these findings from retrenchment in Mississippi teach us about the impacts of rolling back civil service protections in other states and the federal government? Numerous other states have rolled back protections for at least some state employees and, notably, President Trump attempted to reclassify tens of thousands of senior employees into a new unclassified Schedule F designation in 2020 (Trump 2020; Swan 2022). Regarding generalizing to the federal level, the Mississippi and federal bureaucracies share more similarities than first meet the eye. Both are large organizations performing complicated tasks that cannot be operated by solely an executive and hand-picked staffs. Furthermore, all of the agencies exempted in Mississippi but one are led by appointees who serve at the pleasure of the governor, mirroring the organizational structure of the federal executive branch.[2]

Although the pre-conditions for targeting political opponents exist in Mississippi, other, more salient dimensions of conflict took priority in the management of career employees following retrenchment—namely, seniority and, perhaps by proxy, commitment to the status quo operation of an agency. Given that the removal of civil service protections followed

2. The key difference across cases is the lack of pointed rhetoric from the Mississippi governor or other officials in the state about "Deep State" operatives in the bureaucracy. While this is a deviation from the federal level, the lack of research on the effects of reclassification means that we do not know whether the heated statements from political principals like President Trump represent substantive policy shifts or explicit statements about the underlying aims of retrenchment.

serious cases of agency negligence or wrongdoing, political leaders ostensibly focused their attention on removing the employees most attached to old ways of doing business. Thus, while the Mississippi case shows that retrenchment does not automatically lead to the targeting of partisan or ideological opponents in the workforce, it demonstrates that retrenchment opens the door for targeting along salient dimensions of conflict. While that was not partisanship or ideology in Mississippi, in other cases where political conflict is more robust, targeting might also be more likely. This seems to especially be the case in the federal government where high level of animosity exists between the current Republican party and career federal bureaucrats.

Furthemore, my results show that civil service retrenchment can have significant impacts on the bureaucracy even if the targeting of political opponents does not occur. Removing protections for wide swaths of a workforce leads to a significant increase in terminations from the workforce. Regardless of who departs, increased employee turnover and associated expertise losses likely have immediate and negative consequences on agency capacity.

Control and Reclassification in U.S. Bureaucracies

All executives rely on bureaucrats to implement their policy agendas. The administrative state is too large, multi-faceted, and complex to be effectively run by solely the executive and hand-picked staff. Turning campaign promises into a reputation for changing policy requires empowering bureaucrats with subject matter expertise to make decisions (Moe 1985). Discretion, however, comes with risks. While presidents and governors would prefer to delegate control to bureaucrats who share their preferences, modern bureaucracies are comprised of individuals who care about policy outcomes (Gailmard and Patty 2007). Executives thus have to contend with bureaucrats who have dissimilar preferences possibly exploiting their position to shift policy toward their own preferred outcomes.

Although principal-agent problems are ubiquitous, executives' tools for reducing agency costs vary with the institutional setting (Krause and Woods 2014). At the federal level, where

most studies of intra-executive branch oversight focus (Brierley et al. 2023), the power to appoint high-level agency leaders is one of the most effective mechanisms (Lewis 2008; Wood and Waterman 1991). Presidents developed formal systems for controlling the distribution of government positions to loyal allies (Moe 1985; Kumar 2009). Once the task of one White House staff member in the Truman administration, over 100 staff now work to match appointees to positions in the federal workforce during presidential transitions (Lewis 2008).

Despite their control over the staffing of many senior positions in the federal bureaucracy, presidents—Republican and Democrat—have also been consistently frustrated by career staff outside the reach of political appointment (Pfiffner 1987; Heclo 1977; Flavelle and Bain 2017). In response, administrations developed informal, ad hoc mechanisms for marginalizing civil servants viewed as unable or unwilling to implement preferred policies. Employees can be relocated,[3] assigned a new unfavorable position,[4] or lose discretion as additional political appointees are "layered" above them in the organizational chart (Lewis 2008, p. 34). Recent research suggests that marginalization in conjunction with voluntary departures are responsible for increased, albeit limited, turnover among senior career employees in the federal bureaucracy after the election of a new administration (Spenkuch, Teso, and Xu 2023; Doherty, Lewis, and Limbocker 2019b, 2019a; Bolton, de Figueiredo, and Lewis 2021),[5]

3. President Nixon gave voice to this approach in a taped conversation with the Director of the Office of Management and Budget, telling him: "There are many unpleasant places where Civil Service people can be sent. . . Demote him or send him to the Guam regional office. There's a way. Get him the hell out" (Aberbach and Rockman 1976, p. 457). More recently, the Trump Administration relocated two research agencies in the Department of Agriculture from Washington to Kansas City after the agencies published a series of reports that did not fully support the administration's policy agenda (Morris 2021; *Evidence-Based Policy Making* 2022). Over half of the two agencies' staffs opted to not relocate, resulting in short-term decreases in productivity and reductions in both agency expertise and diversity (*Agency Relocations* 2022).

4. Senior career staff who worked closely with the Reagan and George H.W. Bush administrations, for instance, were concerned that they would be targeted by the incoming Clinton administration. As the president of the Senior Executives Association at the time put it, "There is a real danger that a career executive will be sent to the turkey farm – given a job with few responsibilities, few staff and no access to the boss" (Pear 1992). In a more recent example, careerists working on environmental and climate change policies voiced concerns about being assigned to new roles by the Trump Administration. One employee in the Department of the Interior, who conducted research on the effects of rising oceans, was directed to review oil and gas leases instead (Halper 2017).

5. The finding of increased turnover of protected civil servants following the election of a new administration from the opposing party has been replicated outside of the United States in South Korea (Kim and Hong 2019), Sweden (Dahlström and Holmgren 2019), and England (Boyne et al. 2010).

which is more prevalent among career employees who are ideologically opposed to the new administration (Bolton, de Figueiredo, and Lewis 2021; Doherty, Lewis, and Limbocker 2019a, cf. Doherty, Lewis, and Limbocker 2019b).

These findings suggest that, at the federal level, political conflict exists between administrations and bureaucrats, and that presidents are willing to informally marginalize career employees viewed as obstructing their policy goals. Little is known about whether these findings also apply in the states. For one, unlike in the federal bureaucracy, where a considerable amount of research has documented agencies' preferences (Chen and Johnson 2014; Bertelli and Grose 2011; Clinton et al. 2012; Richardson, Clinton, and Lewis 2018; Spenkuch, Teso, and Xu 2023), the extent of ideological or partisan conflict within state executive branches is not fully understood. If governors are going to target political opponents for removal, there must first be opponents working in positions of power for them to terminate.

Yet, even if political opponents are present in the workforce, governors might opt not to remove them when given the opportunity. For one, governors might be able to sufficiently control agencies' outputs regardless of personnel. Governors enjoy other oversight mechanisms not present at the federal level. Many governors have expanded powers of rule review relative to the president (Grady and Simon 2002; Schwartz 2020), more leeway to privatize and reorganize agencies, and the ability to line-item veto individual appropriations and statutory text (Holtz-Eakin 1988; Seifter 2017, 2018). Moreover, while nearly all governors have to work alongside other statewide elected officials, such as secretaries of state, attorneys general, and state treasurers, the frequency of one-party rule in the states and legal ambiguity concerning the independence of these actors often work in governors' favor (Seifter 2017, 2018).

Political opponents might not be targeted for other reasons, too. Agency leaders may target poorly performing employees rather than political opponents. Moreover, even if a governor or agency head wants to dismiss political opponents, bureaucracies' multiple levels might hinder their plans, as the supervisors tasked with managing personnel might be less

willing to use politics as a criterion for whom to fire (Huber 2007). It might also be difficult and costly to identify opposing bureaucrats due to their reluctance to make their political views public for fear of reprisal (Foy 2024).

However, if governors are interested in removing political opponents from the workforce, reclassification would provide them with an excellent opportunity. Unlike the well-documented ad hoc instances of marginalization at the federal level, reclassification affects agencies, swaths of senior bureaucrats, or an entire state workforce. Since 2012, at least Indiana, Arizona, Mississippi, Oklahoma, and Missouri have removed protections for some bureaucrats (Forman 2021; Stephenson 2012; Cournoyer 2012; Parson 2018). These states, which are predominantly under Republican control (McGrath 2013), followed in the footsteps of states like Georgia and Florida that initiated some of the earliest and most far-reaching reclassification reforms in, respectively, 1996 and 2001 (Gossett 2002; Bowman et al. 2003). While the specifics vary by case, all of these reclassification efforts turned classified bureaucrats, who were previously difficult to fire, into "at-will" employees who could be fired without cause or the ability to appeal their terminations. Survey evidence from employees affected by reclassification underscore that these policy changes empowered supervisors to more quickly and easily terminate employees (Coggburn 2006; Goodman and French 2011; Bowman et al. 2003).

Reclassification also makes it easier for personal political views to become a criterion for receiving and retaining a government job. With protections removed, supervisors are more easily able to fire employees seen as disloyal to the current administration. There is some survey evidence to support this point. Following the 2001 reforms in Florida, for instance, 31% of reclassified civil servants reported that the policy change "permits my office to hire more people who have friends or connections to government" (Bowman et al. 2003). In Texas, which has never had a merit-based civil service system, 2.6% of surveyed human resources administrators reported knowing "of a case where a competent employee was fired at-will so that another person with friends or connections to government could be hired" (Coggburn

2006). Likewise, 1.6% of Georgia state employees surveyed after the state's 1996 adoption of at-will employment "reported that they had been asked to resign a position or transfer to another position because of their political beliefs or political connections." A larger share of respondents, 9.7%, said that their career progression was hindered by political interference (Nigro and Kellough 2000).

While these survey results are suggestive of political targeting, they are not definitive. Issues with recall, a lack of information about the reasonings behind managers' personnel decisions, and personal biases all might influence affected employees' survey responses. Moreover, the lack of a control group unaffected by reclassification makes it difficult to know employees' baseline views on the prevalence of political targeting. As such, the survey evidence points to the need for deeper investigations into personnel management following the loss of civil service protections.

State Bureaucrats' Personnel and Voter Records

I introduce a new dataset of personnel and voter registration files of 1,970,527 state employees across twenty-four states.[6] These records include nearly all public state employees in their respective states. The data cover street-level bureaucrats (e.g., correctional officers, state police troopers, and benefit eligibility specialists) tasked with implementing consequential policies, as well as higher-level bureaucrats (e.g., agency heads, governors' chiefs of staff, and budget analysts) who write regulations, formulate spending requests, and set departmental policies.[7]

Employees' personnel data was collected via public record requests to each state's human

6. The twenty-four states: Alaska, Arkansas, Colorado, Florida, Iowa, Idaho, Louisiana, Massachusetts, Maine, Maryland, Michigan, Minnesota, Mississippi, Montana, North Dakota, New Hampshire, Nevada, South Carolina, Texas, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.

7. Most states exclude at least some employees from public disclosure. In most cases this is limited to hospital employees or undercover police officers, although some states exclude additional workers. Washington, for instance, excludes all state patrol officers and all employees who work in the ferry bureau of the Department of Transportation, since federal law prohibits releasing information about employees who have unsecured access to a vessel. Other states also differ in whether they include records for higher education and national guard employees.

resources agency. The records include, at minimum, employees' first and last names, salaries, job titles, and employing agencies. In some states, the personnel files also note employees' middle initials, race, sex, civil service status, age, county of employment, and hire date. The data span at least from 2019 to 2021, although nine states' data spans at least a decade. The data are structured as repeated cross-sections of the states' workforces, with the frequency of the snapshots varying by state. Mississippi and Florida, for instance, provide monthly snapshots of who is employed in the state bureaucracy, while Minnesota and Nevada provide data at annual intervals. Overall, the dataset contains 42,299,960 period-employee observations.

Some states' personnel data proved inaccessible. South Dakota, for example, does not release lists of employees' payroll information to the public. Other states were unable to be contacted (e.g., New Mexico never responded to repeated contact attempts), charged exorbitantly high fees, or were unable to provide a sufficient amount of information (e.g., Oklahoma does not provide employees' first names). Nevertheless, the twenty-state sample includes states in the Northeast, Midwest, South, and West. Some of the included states, like South Carolina, Idaho, and North Dakota, have been under the control of Republican governors and legislatures for decades, while states like Washington and Maine lean more Democratic. Additional information about the data, such as the frequency, span, and available variables is located in Table A.1 in the Supplementary Information.

After pre-processing the personnel files—which vary significantly in format and content depending on the state's public disclosure laws and human resource software—I merged them with individual-level partisan affiliation data contained in voter registration records from late 2020 and early 2021.[8] The voter registration data were provided by the vendor L2. Of the twenty-four states in my sample, fourteen register voters by party, which serves as the partisanship measure in the L2 data. In the other states, L2 assigns partisanship based

8. Since the case study later in the paper uses longitudinal personnel data from Mississippi, I split the personnel data for that state into three groups and merge each group with voter registration data from (roughly) March 2014, March 2017, and March 2021. The specific dates of the snapshots vary across Mississippi and surrounding states. See Table A.6 for more information.

either on voters' most recent partisan primary participation or a proprietary algorithm that uses demographic, commercial, and campaign finance data.[9]

Matching state employees in the personnel dataset to their corresponding voter registration records is not a simple task. Administrative datasets often contain misspellings, middle initials present in one file might be missing in another, and the number of variables common to both datasets might be insufficient to uniquely identify record pairs. In order to minimize these difficulties, I merged each state's employees with the L2 data using an algorithm that first finds a set of potential voter matches for each bureaucrat using string-distance matching on first and last names before progressively dropping unlikely matches using available key variables.

The matching algorithm first finds, for each state employee, the set of voters in the state (and 50km border region surrounding the state) with extremely similar (but not necessarily identical) first and last names. A series of post-processing steps then culls unlikely matches from these sets of potentially matching voters. The specific variables used to post-process the matches varies by state depending on availability. The most common post-processing variable is employees' middle initial. When available, voters with different, non-missing middle initials are dropped from the set of potential matches. Additional information about the merge procedure and use of other post-processing variables (i.e., gender, race, age, original hire date, and county of employment) are listed in the Supplementary Information in Section A.1.1.

Matching administrative datasets that lack a large number of key variables or unique identifiers requires making decisions about what to do with one-to-many matches. If one employee still matches to more than one voter after post-processing, partisanship is calculated as the mean partisanship of the matched voters.[10] If an employee is matched to only

9. See Table A.5 in the Supplementary Information for more information.

10. This approach is similar to that suggested by Enamorado, Fifield, and Imai (2019). The key difference is that, in my case, partisanship is calculated as the unweighted mean rather than the mean weighted by a probability estimate of the likelihood that the employee-voter pair is a true match. Using an unweighted mean is appropriate in this case because, after post-processing is complete, it is impossible (with the given information) to know whether one voter is a better match than another for a given employee.

one voter (or more than one voter who share the same partisan registration), then the employee's partisanship is set to 1 for the given partisan affiliation. In the analyses that follow, I discretize this continuous measure of partisanship by defining someone as affiliated with a given political party if their probability of being registered with a given party exceeds 0.9.[11]

Overall, 73% of the 1,970,527 unique state employees and 78% of the 42,299,960 employee-period observations were matched to at least one voter.[12] These match rates fall well within other recent attempts to merge bureaucratic personnel files with L2 voter registration data. Spenkuch, Teso, and Xu (2023) matched 67.5% of federal bureaucrats to one (and only one) voter using a more conservative approach that matched names exactly and incorporated information on employment location and age. Likewise, in their study of U.S. police officers, Ba et al. (2023) used a more liberal probabilistic matching algorithm to match 86% of the officers in their sample to a voter using first and last names and, in the case of some police agencies, middle initials.[13]

Matched and non-matched bureaucrats can differ on observable characteristics due to real underlying differences across registered and non-registered voters or biases introduced by the merge process. Table 2.1 shows the differences in gender, race, and income across the matched and unmatched state bureaucrats. Following Spenkuch, Teso, and Xu (2023), the final column shows the results of a series of t-tests evaluating the null hypothesis that the difference

11. Of the employees matched to at least one voter, 86% have a partisan probability of 0.9 or higher. Of those employees, only 6,186 employees have a partisan probability in $[.9, 1)$. The rest have a probability of 1. This indicates that most matches are either one-to-one matches or one-to-many matches of voters with the same partisan affiliation.

12. Table A.2 shows the share of state employees matched to at least one voter by state. It is difficult to know why the match rate for employee-period observations is higher than the match rate for unique employees. One possibility is that the employees who only work for the state for a short period of time are less likely to register to vote.

13. The 72% and 78% match rates treat one-to-one and one-to-many matches equivalently. Therefore, Table A.3 shows the share of state employees matched to one, two, five, and ten voters. In most states, over three-fourths of matches are one-to-one and less than 10% of state employees were matched to two voters. For comparison, 6.9% and 37.6% of the employees in Spenkuch, Teso, and Xu (2023) and Ba et al. (2023), respectively, were matched to more than one voter. Spenkuch, Teso, and Xu (2023) were able to secure such a small share of one-to-many matches because the federal personnel file includes information on bureaucrats' age. South Carolina is the only state in my sample that provides information on state bureaucrats' age and, in that state, a similar share ($\sim 5\%$) were matched to more than one voter. Table A.4 shows that an even smaller share of employees were matched to more than one voter who belong to different political parties.

Table 2.1 – Socioeconomic Differences Between Matched and Unmatched State Bureaucrats. Shows the mean share of female and white employees and mean salary of employees matched to, respectively, at least one or zero voters. The racial and gender comparisons exclude states where these data are unavailable. P-values calculated using two one-sided t-tests where the null hypothesis is that the difference between the two means is larger (less) than 10% (-10%) of the standard deviation of the pooled data. The larger of the p-values from these two tests is shown here.

	Unmatched Employees	*Matched Employees*	*P Value (Equivalence Test)*
Share Female	0.63	0.59	1
Share White	0.49	0.53	1
Mean Salary	$35,719	$46,154	1

in means is substantively large (defined as 10% of the standard deviation of the pooled data). All three socioeconomic measures display significant differences across the unmatched and matched datasets. Employees successfully matched to at least one voter are less likely to be female, more likely to be white, and have higher salaries. These differences likely result from real differences in voting registration across population groups. Nationally, higher-earners and white citizens are more likely to be registered to vote. Moreover, while females are more likely to be registered than males across the entire citizenry, male government workers were actually more likely to report being registered than their female co-workers in 2020 (U.S. Census Bureau, Reported Voting and Registration, 2020).

The Partisanship of State Bureaucracies

Reclassifying civil servants as at-will employees provides an opportunity for the administration to remove political opponents from the state workforce. If this is to occur, however, political opponents must first occupy positions of power within state bureaucracies. Governors are likely not concerned with the political views of the mechanics tasked with maintaining the fleet of state police cars or the office clerks processing drivers' license applications. If governors attempt to remove formerly-protected employees for political reasons, they will likely focus their attention on the "spigots of policymaking" — bureaucrats who influence

regulatory, budgetary, and policy outputs (Doherty, Lewis, and Limbocker 2019a).

I identify these influential bureaucrats, which I refer to as "spigots," using a two-stage approach that relies on employee information available across all twenty-four states: annual salaries and job titles. I first subset the personnel data to only those employees whose annual salary is in the top quartile for the given state and period. This drops many front-line bureaucrats who implement policy but do not have a role in higher-level agency decisionmaking. However, it does not remove highly-compensated street-level bureaucrats like doctors, nurses, and engineers. While often well-paid, these employees do not perform tasks where individual ideology or partisanship is likely to influence policy. I drop these employees from the data by removing employees whose job titles contain specific keywords.[14] Finally, I remove employees working in higher education, the national guard, or for a state board due to alternative organizational structures and drop part-time and temporary employees.[15]

The geographical distribution of spigots is one way to validate my measure. While the workforce is distributed across a state, spigots should be concentrated in the area where key policy decisions are made: the state capital. For context, only about 20% of all full-time federal employees are in the Washington, D.C. area, but 72.7% of the bureaucrats in the influential Senior Executive Service worked in or around Washington, D.C. in 2022 (Service, n.d.). Across the thirteen states that make employees' work county available, 76% of spigots work in either the county of the state capital or an adjacent county. This is about 20 percentage points higher than the share of all state employees who work in the capital or

14. I drop all employees whose job title includes one of the following strings: engr, admin assistant, auto, biologist, case manager, case reviewer, clinical, clinician, conservation officer, corporal, corr officer, correctional officer, corrections officer, counselor, dentist, detective, doctor, dps officer, enforcement officer, eng , eng/assoc, eng/eng, engineer, epidemiologist, family prot spec, ferry captain, food, geologist, hwy patrol off, hydrologist, info tech, information technology, investigator, it professional, it tech, lieutenant, maint, mechanic, mine inspector, network systems analyst, nurse, nursing, nutrition, parole agent, patrol officer, pharmacist, physician, pilot, prgmr, programmer, psychiatrist, psychologist, pub defender, rn supervisor, school attendance, sec off, sergeant, social worker, special agent, statistician, teacher, technical support spec, therapist, trooper, and warehouse. See Table A.7 for the ten most common remaining job titles by state.

15. This is only possible in the twelve states that make full/part time and temporary status available. I also drop employees who are elected or in alternative classification systems that are not easily categorized as classified or unclassified.

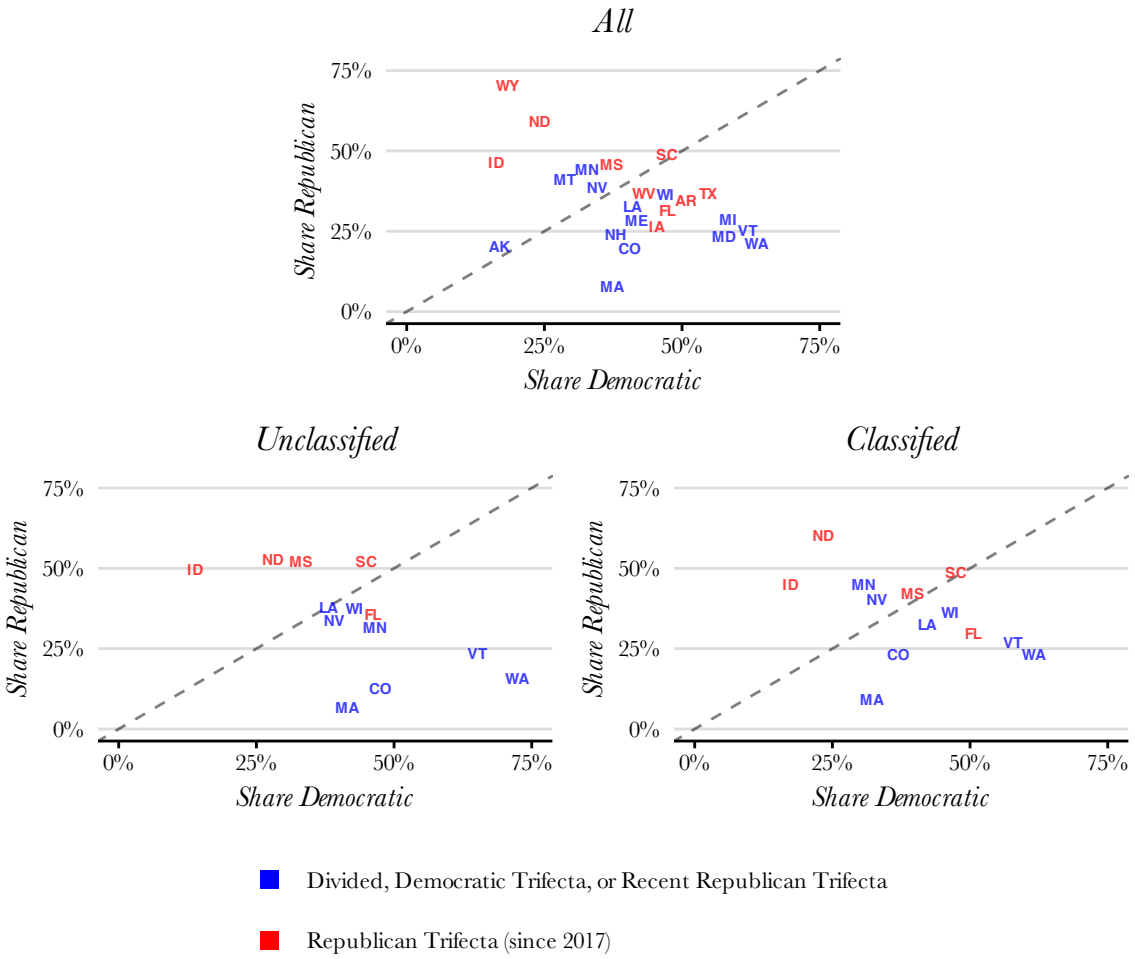
surrounding counties.[16]

Figure 2.1 plots the shares of Democratic and Republican spigots, by state, as of early 2021.[17] The top panel shows the share of all spigots in each state that are registered Democrats and Republicans. The bottom two panels show the same information, except that they only include those spigots who are in, respectively, the unclassified and classified services (for the states that make classification status available). Breaking out these data by classification status is important because targeting should be focused on classified employees, as unclassified bureaucrats are already relatively easy to dismiss. State abbreviations colored red denote that both legislative chambers and the governorship have been controlled by Republicans since at least 2017 (i.e., a "trifecta"). Overall, looking at the top panel, a number of Republican-controlled states (i.e., West Virginia, Florida, Texas, Arkansas, and Iowa) have more Democratic than Republican spigots. Moreover, while states like Washington and Vermont have the largest shares of Democratic spigots of any state in the sample, states like South Carolina, Texas, Arkansas, and Iowa employ more Democratic spigots than Democratic-controlled states like Massachusetts, Colorado, and Minnesota.

16. See Figure A.1 for a state-by-state breakdown of the geographic distribution of bureaucrats.

17. Due to differences in the frequency of the data snapshots, the exact date of the data varies by state. Figure A.3 plots the shares of Republican and Democratic spigots over time.

Figure 2.1 – **Democrats Staff Senior Positions in State Bureaucracies** Shows the share of senior state bureaucrats who are registered Democrats. The top panel includes all employees, while bottom left and bottom right include, respectively, all unclassified and classified employees (for the states that make this information available). Red state abbreviations indicate that the state's legislative chambers and governorship have been under Republican control since at least 2017. Data is a snapshot from early 2021 and only includes employees matched to at least one voter. An employee is deemed to be a registered a Democrat if their probability of being a Democrat exceeds 0.9. Data excludes national guard, state board, higher education, part-time (where available), and temporary employees (where available). Complete results by partisanship located in Tables A.9 and A.10. The labels are minimally jittered to eliminate overplotting.



The presence of Democrats in senior positions in state bureaucracies holds across classification status. Although Republican control of government is a better predictor of the relative partisanship of unclassified spigots, Republican-controlled South Carolina and Florida still employ a large share of Democrats relative to other states. Likewise, South Carolina, Mississippi, and Florida all employ a larger share of Democratic-classified spigots than states like Minnesota and Massachusetts where Democrats have had more statewide success. As I show in the Supplementary Information, some of these Republican-controlled states not only have high shares of Democrats relative to other states' bureaucracies, but also compared to their own voting populations (Figure A.2). In short, Democrats hold positions of power within state workforces that have been controlled by Republicans at the gubernatorial and legislative levels for, in some cases, decades. If reclassification is a means for Republican governors to remove political opponents Democratic bureaucrats, there are plenty of Democratic bureaucrats for them to target.

Temporary At-Will Employment in Mississippi

Democrats staff influential positions in Republican-controlled states' bureaucracies, but are they targeted for removal following the loss of job protections? The existence of Democrats in senior echelons of state bureaucracies does not necessarily mean that they will be removed from their positions following the retrenchment of job protections. Agency leaders might be more interested in firing employees who are performing poorly, bureaucrats might be reluctant to share political views on the job or be difficult to replace, and mid-level managers might be hesitant to implement orders from political appointees to purge opponents.

I test whether political opponents are targeted for removal in the context of reclassification in Mississippi. Between 2014 and 2020, five Mississippi state agencies were granted temporary exemptions from the purview of the Mississippi State Personnel Board (MSPB), which exercises considerable authority over personnel management in Mississippi's public sector. Created in 1980 to oversee the state's merit-based civil service system, the MSPB assigns

every position in the state's civil service into specific job classes. The MSPB is responsible for setting the range of allowable salaries within each job class, which provides the agency considerable influence over who is eligible for a raise and by how much (*PEER Report 651* 2020). The MSPB also adjudicates disputes between state employees and agencies. Since employees in the civil service enjoy a legal right to their jobs, they can appeal any "written notice of dismissal or action adversely affecting his compensation" to the Employee Appeals Board located within the MSPB (Mississippi Code 25-9-127 2020).

Since 1988, the Mississippi Legislature and Governor have authorized several agency exemptions from MSPB oversight, some of which were requested by the affected agency. The exemptions vary in scope, but usually provide an agency with wide discretion to fire, promote, and compensate employees without regard to salary bands or due process procedures. After the exemption period is over, the agency is once again under the purview of the MSPB and must adhere to all merit system policies. While exempted from the merit system, agencies operate with little oversight. Agencies do not have to justify why they want an exemption or describe their plan for reorganizing the workforce during the exemption.[18] Although exempted agencies are required via statue to submit annual reports detailing how many employees were hired, demoted, fired, or received a salary increase, none of the agencies exempted between 2014 and 2020 actually submitted the reports (Mississippi Code 25-9-127 2020; *PEER Report 651* 2020)

Table 2.2 lists the six temporary exemptions issued to five Mississippi state agencies between 2014 and 2020. Of the five agencies, all but the Department of Education are led by a political appointee who reports to the Governor.[19] All of the exemptions allowed agencies to disregard civil servants' legal property rights to their jobs and treat them as at-will employees. Consequently, during the exemption periods, civil servants were considerably

18. Beginning July 2021, exempted agencies have to submit annual reports to the legislature and MSPB describing how their exemptions are improving agency operations (*PEER Report 670* 2022).

19. The Department of Education is headed by the State Superintendent of Education, who is appointed by the nine-member Mississippi Board of Education. Five of the nine board members are appointed by the Governor. The Lieutenant Governor and Speaker of the Mississippi House of Representatives each appoint two members.

Table 2.2 – Agency Exemptions, 2014 - 2020 Shows each of the six temporary exemptions issued to Mississippi state agencies between 2010 and 2022. A checkmark under the *Compensation* header indicates that the agency did not have to comply with the MSPB's compensation plan. A checkmark under the *Property Rights* header indicates that the agency did not have to abide by the statute providing civil servants with property rights in their positions. For more information, see *PEER Report 670 (2022)*, and *PEER Report 651 (2020)*. Mississippi's School of the Arts was also excluded from the MSPB's purview beginning January 1, 2020. Since that exclusion was permanent, it is excluded from this table.

	Exemption Period		*Exempted Rules*	
Agency	*Begin Date*	*End Date*	*Compensation*	*Property Rights*
Marine Resources	4/16/2014	10/17/2014	✓	✓
Education	7/1/2014	6/30/2016	✓	✓
Corrections	7/1/2015	6/30/2016		✓
Corrections	7/1/2016	6/30/2017	✓	✓
Human Services	7/1/2016	6/30/2019		✓
Child Protection Services	7/1/2016[1]	6/30/2020		✓

[1]Before July 1, 2016, the Department of Child Protection Services was part of the Department of Human Services.

easier to demote or fire. Three of the exemptions also gave agencies wide latitude to increase or decrease employees' salaries without regard to MSPB rules.[20]

Contemporary accounts of the exemptions suggests that they were pitched as mechanisms for improving agency performance. At least five of the exemptions followed major scandals or cases of negligence on the part of the agency. In November 2013, the Executive Director of the Department of Marine Resources and six other agency employees were charged with, and pleaded guilty to, fraud (U.S. Attorney's Office 2013; Lee 2018). In the wake of the scandal, the legislature promptly passed a bill to reform the agency, giving the new Executive Director "flexibility in making an orderly, effective and timely reorganization of the Department of Marine Resources" (Wiggins 2014; Havens 2014). Likewise, eight months before the

20. Based on a report prepared for the Mississippi legislature, the exemptions from compensation rules led to a number of salary raises, which were in some cases significant. One employee's salary increased by 71% during the agency's exemption period, while the salary of an employee hired by the Department of Education between July 2014 and June 2016 had their salary re-adjusted after the completion of the exemption because it exceeded the maximum allowed for state employees (*PEER Report 651* 2020).

Department of Corrections was first exempted from merit rules, the Commissioner of the agency was indicted on federal corruption charges (Gates 2017). The July 2016 exemption of the Department of Human Services and the newly-created Department of Child Protection Services stemmed from the settlement of a 2004 civil suit accusing the state of neglecting foster children in its care. As part of the revised settlement, the state and plaintiffs agreed that the "Governor will take all reasonable steps, within legal authority, to exempt [the Departments of Human Services and Child Protection Services] from State Personnel Board oversight for a period of at least 36 months, beginning July 1, 2016" (Lee 2015).

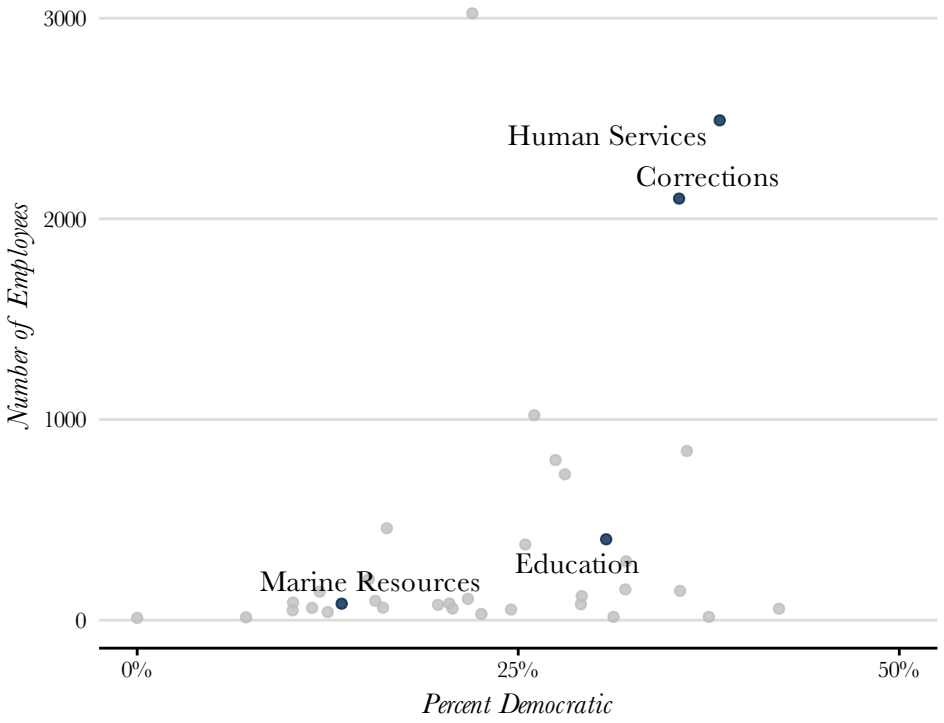
While described by supporters as a means of addressing governmental failures rather than a mechanism for removing opponents from the state workforce, these temporary exemptions still provided windows of opportunity for the Republican-controlled government to dismiss Democratic employees. Figure 2.2 shows the share of registered Democrats in every Mississippi state agency with more than ten classified civil servants, as of January 2016.[21] The Departments of Corrections, Human Services, and Education—all of which received at least one exemption between 2014 and 2020—are some of the largest, most Democratic agencies in Mississippi. The clear outlier is the Department of Marine Resources, which has among the smallest share of Democrats of any state agency. While it is difficult to assess whether the decision to reclassify these agencies in the first place was driven by its partisan makeup, it is clear that, upon reclassification, there were plenty of Democrats for managers to dismiss.

I test whether Democratic civil servants were more likely to depart Mississippi state government following reclassification using two datasets. The first is a subset of the individual-level personnel and voter dataset described above. These data span from January 2010 through June 2022 and include 40,267 unique employees classified in the state's merit system and 2,122,342 month-employee observations.[22] 71% of the month-employee observations and 72% of the unique employees between 2010 and 2022 were successfully matched to at

21. Employees in the Department of Child Protection Services are included in the Department of Human Services in this figure.

22. This sample excludes temporary and part-time employees. It also excludes employees in the national guard, higher education, state hospitals, Mississippi Bureau of Narcotics, and small state boards.

Figure 2.2 – Exempted Agencies Mostly Large and Democratic Shows, for each Mississippi state agency with more than 10 classified civil servants successfully matched to a voter, the share of matched employees that are Democrats (as of January 2016). The four agencies that received an exemption from merit rules between 2014 and 2020 are highlighted in blue. Data excludes part-time and unclassified employees.



least one voter.[23] In Mississippi, 80% of voting age citizens were registered to vote in 2020. Given national trends, this percentage is likely even lower for the lower-earning individuals who comprise a relatively large share of the Mississippi state workforce ("U.S. Census Bureau" 2021b).

While these data provide an extremely granular look at the makeup of the Mississippi public workforce, they do not note why an employee leaves government employment. I observe the last month an employee works for the state. Therefore, in order to examine the effect of reclassification specifically on dismissals, I also collected, via public records requests to the MSPB, the number of resignations, retirements, and terminations in each agency for

23. Of the employees successfully matched to at least one voter, 90% were matched to only one voter and 96% were matched to either one voter or more than one voter of the same partisan affiliation. See Tables A.2, A.4, and A.3 for more information.

every month from January 2005 through January 2020. These agency-level data allow me to track not only the effect of reclassification on overall departures, but on the specific type of departure.[24] In particular, it allows me to pinpoint whether increased rates of departures are due to employees being terminated or leaving of their own accord.

Reclassification and Agency-Level Dismissals

I first examine whether employees in exempted agencies were more likely to be dismissed than their peers in other, non-exempt state agencies, regardless of partisanship. I empirically test for the effect of reclassification on dismissals using a series of synthetic control models (Abadie and Gardeazabal 2003; Abadie, Diamond, and Hainmueller 2010, 2015). Developed as a tool for estimating causal effects when the number of observations is small, a synthetic control model estimates an untreated version of the treated unit as the weighted average of a set of control units. This "synthetic control" unit resembles the treated unit in terms of observable characteristics. As such, it provides an estimate of how, in the wake of treatment, the treated unit's outcome would have evolved in a hypothetical world in which it remained untreated.

I estimate these models with the agency-level dataset that includes monthly counts of the number of terminations, retirements, and resignations in each agency from 2005 through 2020. The outcome of interest is the number of terminations in the agency in a given month as a share of the size of the agency's present workforce. I estimate separate models for the exemptions of the Departments of Human Services, Marine Resources, and Education. I do not fit a model for the 2015 exemption of the Department of Corrections because of a data quality issue with the dismissal data.[25] For the remaining three exempted agencies, I

24. Figure A.4 shows that the number of departures per month in the personnel data closely resembles the sum total of resignations, retirements, and terminations from the dismissal data. Note that this figure excludes the Departments of Corrections and Mental Health. For unknown reasons, both agencies' monthly departure counts significantly differ across the two datasets.

25. As shown in Figure A.5, between roughly 2012 and 2017 the number of dismissals, resignations, and retirements is much higher than the number of departures calculated from the personnel data. Furthermore, the high turnover rate of the Department of Corrections is an outlier relative to other agencies in the state.

generate the respective synthetic version of the agency as the weighted mean of pre-treatment outcomes, agency size, and agency employee location (i.e., the number of employees in the county in which the state capital is located).[26] Inference involved running a series of placebo tests where each of the agencies in the control set was randomly assigned to receive treatment. A low p-value, therefore, suggests that the effect size for the treated unit is rare, relative to other untreated agencies for the same period.

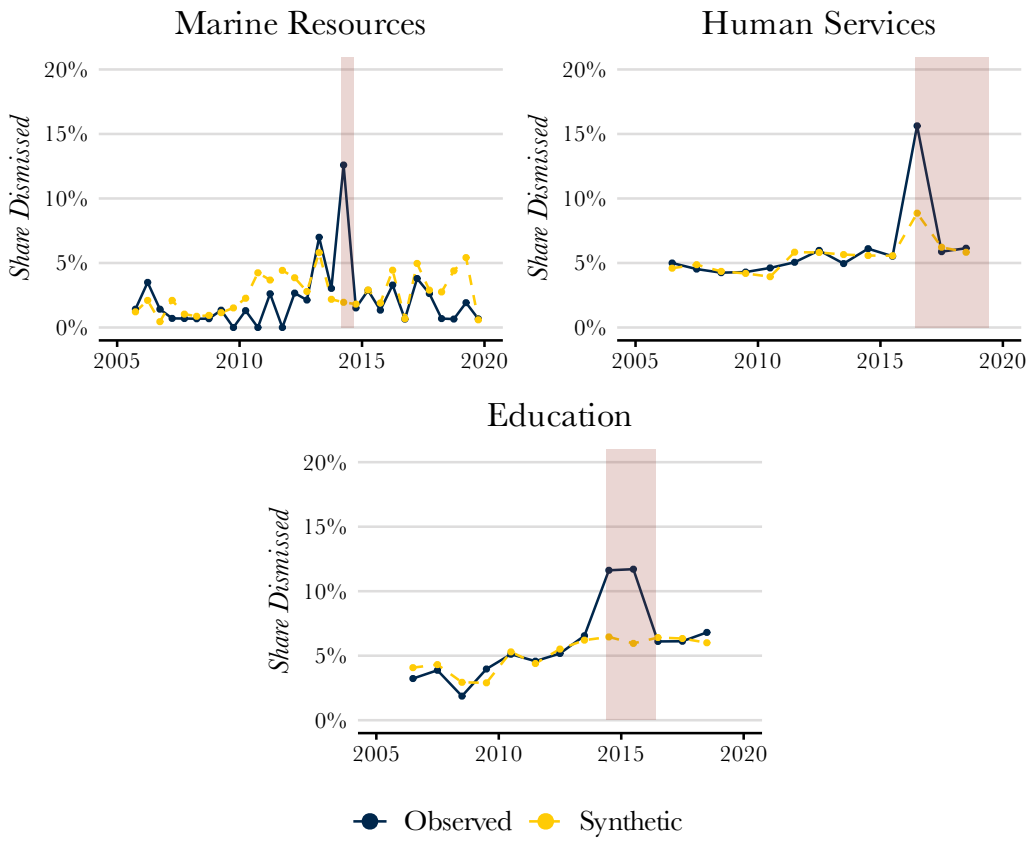
Figure 2.3 presents the results. The dark blue line shows the observed share of employees in the treated agency that were involuntarily dismissed in the given period. The outcome is calculated annually for the Departments of Education and Human Services, and semiannually for the Department of Marine Resources. The shaded regions represent the periods in which agency employees lacked civil service protections. In each of the three agencies, the first period following reclassification saw substantively and statistically significant increases in the number of terminations. Relative to the synthetic control, terminations increased by 11 percentage points in Marine Resources, 7 percentage points in Human Services, and 5 percentage points in Education. Relative to pre-treatment dismissal rates, these are extremely large treatment effects. In the first period of reclassification, terminations increased by 634% in Marine Resources, 211% in Human Services, and 171% in the Department of Education. Reclassification was a means for large-scale purges.[27]

Consequently, even without data quality issues, it would not be possible to generate a within-state synthetic control for the agency.

26. The specific variables used to fit the synthetic control varies across the models depending on fit. More information on the agencies and variables used to fit the synthetic control is available in the Supplementary Information.

27. In the Supplementary Information, I show that the effects of the exemptions on departures was limited to involuntary dismissals. Figure A.8 shows little significant effect of exemptions on retirements or resignations.

Figure 2.3 – Reclassification Increases Involuntary Dismissals from the Workforce Shows three separate synthetic control models comparing the share of employees in the given agency that were involuntarily dismissed from state employment in the given period (blue) against a statistically generated control (yellow). The unit of analysis for the Corrections and Education models is the agency-year. For the Marine Resources model, the unit of analysis is the agency-semiannual period. In each plot, a point represents the total number of employees involuntarily dismissed over the forthcoming 12 or 6 months divided by the number of employees in the agency at the start of the period. The shaded area in each of the plots represents periods where the given agency was not covered by the MSPB. All p values $< .001$. Additional information about the variables and other agencies used to create the synthetic controls is available in Figures A.7 and A.6.



Who Departs?

Reclassification increases the number of terminations from the state workforce. These agency-level findings do not, however, shed any light on which types of employees are most at risk of losing their jobs and whether, in particular, political opponents are targeted for dismissal. As such, in this section I use the individual-level personnel data to test whether, following reclassification, Democratic bureaucrats were more likely to leave the state workforce than their Republican colleagues. The structure of the data (monthly cross sections of individual employees) is well suited for a difference-in-differences analysis with heterogeneous treatment effects. As such, I use the `PanelMatch` `R` Package to estimate the treatment effect of exemptions on the probability of an affected employee departing the state workforce, moderated by individual partisan affiliation (Kim et al. 2022; Imai, Kim, and Wang 2023). This software provides a flexible suite of tools for estimating difference-in-differences estimators with staggered treatments, heterogeneous treatment effects, and more than two periods and/or groups — all of which are difficult to properly incorporate into more conventional two-way fixed effects methods (Imai and Kim 2021, 2019; Callaway and Sant'Anna 2021).

I subset the data to spigots in the Mississippi workforce (using the same two-stage process discussed above)[28] and trim the monthly snapshots into annual cross sections each July to reduce month-to-month fluctuations in departures. I also exclude any bureaucrat who was not a registered Republican or registered Democrat over the entire period in which they are observed in the dataset. This serves to increase the likelihood of uncovering an effect for political targeting (as Republicans would seemingly be even less willing to lose their jobs under a Republican administration than non-partisan employees if political targeting is occurring).

Evaluating the treatment effect of exemptions requires estimating a counterfactual depar-

28. I include all employees who were defined as spigots at one point in time. I do this to avoid incorrectly defining someone as entering/leaving the workforce and collect information on talented employees rising through the organization. Unlike in the cross-state definition above, I drop employees who are not in the top salary quartile for the agency, rather than the state.

ture probability for exempted employees as if they never lost their job protections. Using `PanelMatch`, I construct sets of control employees from the agencies that were not exempted from the merit system who share the same work histories for the three years prior to the exemption. For instance, if a bureaucrat employed in the Department of Human Services upon that agency's exemption in July 2016 had worked for the state since December of 2015, their departure will be compared against employees in the rest of the non-exempt workforce who have also been employed by Mississippi since December of 2015. Of the 360 spigots who lost their job protections due to exemptions,[29] 50 (14%) could not be matched to any control employee in the rest of the state workforce. For the remaining employees, most were matched to a control set of employees that included at least 500 bureaucrats unaffected by reclassification (See Figure A.9).

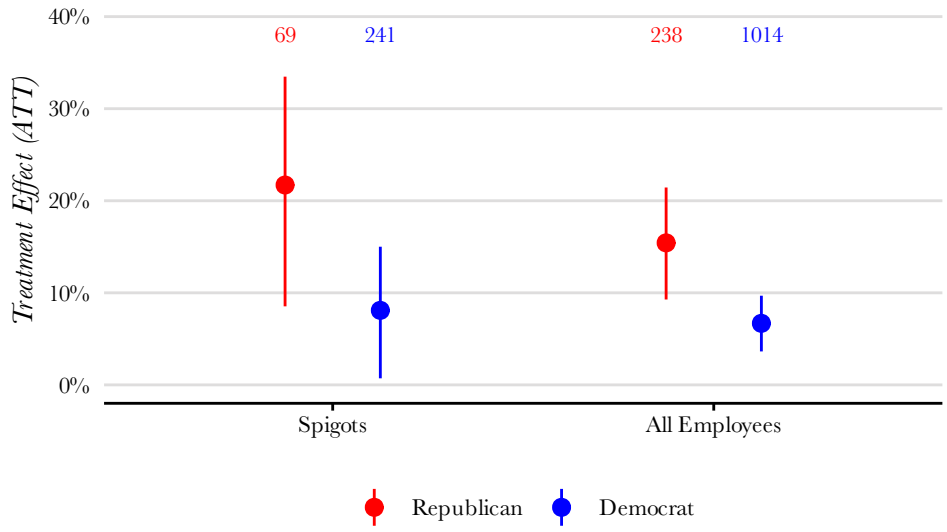
For each treated bureaucrat and corresponding control set, I utilize Covariate Balance Propensity Score matching to balance on employees' sex, race (white or non-white), years of experience working for the state, annual salary, and whether they work in the Jackson metropolitan area. Matching greatly reduces the observed differences between the treated and control groups. As I show in the Supplementary Information in Figure A.10, the magnitude of the standardized difference between the mean values of all covariates except county unemployment rate and annual salary are less than 0.2 in the pooled model, indicating little difference in the means across groups (Normand et al. 2001; Austin 2011; Cohen 1977). This similarity suggests that, at least in terms of observable variables, the control sets serve as reasonable proxies for estimating the probability that a given treated employee would have left the workforce if they never actually lost their protections.

Point estimates of the average treatment effect on the treated are calculated by taking the mean of the difference between whether each treated employee departed the state workforce in the 12-month period following reclassification and the mean probability of departure for the corresponding matched set of control employees. Standard errors are calculated using

29. This number excludes employees in the Department of Marine Resources. I discuss below why I do not include this agency in the analyses.

a weighted bootstrap with 5,000 iterations (Imai, Kim, and Wang 2023). Figure 2.4 plots the treatment effect estimates and 95% confidence intervals for the model, pooled across the Departments of Corrections, Education, and Human Services.[30] The main results for spigots, moderated by partisanship, are included on the left-hand side of the plot, while the same results for all employees are shown on the right.

Figure 2.4 – Democrats No More Likely to Depart 12 Months After Exemption
Shows point estimates and 95% confidence intervals from `PanelMatch` models estimating the treatment effect of spigots and all employees losing their job protections. The effects of the exemptions are moderated by partisanship. The number of employees in the treatment groups are shown above the point estimates.



As expected, given the results of the synthetic control models, the results show that removing employees' job protections increased the likelihood of leaving the state workforce. However, the moderated treatment effects by partisanship show no consistent evidence of out-partisan targeting. Democratic spigots were no more likely to depart the workforce following the loss of job protections than their Republican colleagues. Removing job protections led to an 9 percentage point increase in the probability of Democratic spigots leaving the workforce. Influential Republican employees faced an even higher risk, becoming 22 percentage

30. Marine Resources is excluded because its exemption began in April rather than July, making it difficult to sync with the 12-month periodic snapshots of the analysis dataset. The Department of Child Protection Services is folded into the Department of Human Services in this analysis.

points more likely to depart following reclassification.

If employees' personal political views did not moderate departures in the wake of agency exemptions, what did influence personnel management in the wake of the loss of job protections? One potential factor is employee seniority.[31] While seniority provides expertise and skill, it also brings with it calcified views on how work ought to be conducted. For executives with relatively short time horizons interested in getting things done, long-time employees might therefore pose an obstacle to implementing policy agendas. The newest employees might also be at increased risk of leaving. These bureaucrats have less invested in remaining in their jobs and are also likely hired by some of the most senior employees. As a result, if an executive wants to remove the longest-serving employees, departing bureaucrats might take some of their recent hires with them too.

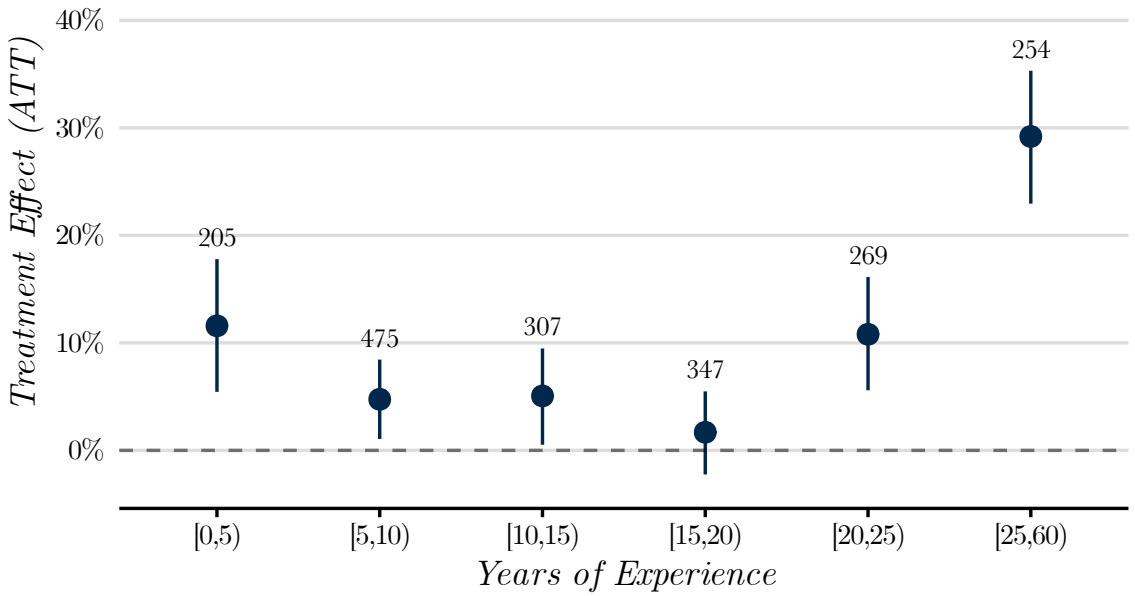
Following this logic, I run a similar `PanelMatch` model as above, except I test for heterogenous treatment effects by tenure length rather than partisanship. Also, unlike the models above, I include all employees regardless of their policy influence or partisan registration. I use all employees, even those unable to be matched to any voter, due to power concerns and the lack of a strong moderating relationship between partisanship and departing in Figure 2.4. Nevertheless, I do balance treatment and control groups on whether an employee was a spigot in the pre-treatment period, along with the other covariates used in the partisanship model above (Figure A.11).

Figure 2.5 shows the point estimates and 95% confidence intervals from this test of the moderating influence of tenure length. I also include above the estimates the number of employees in the last pre-treatment period pooled across the Departments of Education, Corrections, and Human Services for each of the tenure length values. The results show that while employees in exempted agencies were more likely to depart in the year following

31. Another possible moderating factor is job performance. Poor performers' quality might stand in the way of executives achieving their policy goals. Especially in the case of Mississippi's reclassification efforts, which followed issues of policy failure or scandal, reclassification might present an opportunity to replace poor performers. Unfortunately, it is very difficult to identify these employees, and I leave the moderating influence of performance on turnover following reclassification to future work.

the loss of protections, the employees who had worked for the state the longest were at a heightened risk of leaving. Employees who had worked for the state for at least 25 years were 33 percentage points more likely to leave the state workforce after losing their job protections. Although sample size issues make it difficult to draw crisp conclusions within the group of employees who had served between 25 and 60 years, I show in Figure A.12 in the Supplementary Information that the risk of departing is even higher for the longest tenured employees in this subset. Finally, although not as large in magnitude as the effect for the longest-serving employees, the most recent hires also seem to be at slightly elevated risk of leaving, suggesting that they may have been targeted along with the most senior bureaucrats.

Figure 2.5 – Probability of Departing is Highest for Longest-Serving Bureaucrats Shows point estimates and 95% confidence intervals from one `PanelMatch` model moderated by employees' years of experience. The model includes all employees, regardless of whether they were matched to a voter, their seniority, or salary. Treatment effects are pooled across the Departments of Corrections, Education, and Human Services. Covariate balance information is shown in Figure A.11.



Discussion

Many governors enjoy a significant amount of control over the staffing of their bureaucracies. The reclassification of career bureaucrats into at-will positions opens the door for reorganizations, mass firings, and more flexibility in the management of personnel. The loss of job protections, however, also offers governors an opportunity to remove political opponents from the state workforce. Within the Republican-controlled states where reclassification has been most prevalent, there are numerous influential Democratic bureaucrats, setting up the possibility of political conflict. While this sets the stage for political targeting to occur, I show in a case study of reclassification in Mississippi that Democratic civil servants were not more likely to depart than their Republican peers following the loss of job protections.

My results suggest that individual employees were not targeted for removal based on their personal political views. Instead, other factors such as employees' length of service with the state ostensibly influenced departures following the loss of protections. However, this null finding for targeting does not mean that reclassification always lacks political motives or consequences. As I show, reclassification can lead to large-scale increases in dismissals from the workforce. Even if applied evenly at the individual level, strategic reclassifications can disrupt work on specific policies or programs. From the perspective of an executive, dismissing individual employees without regard to their personal views might even be preferable. Finding individual political opponents in the workforce is difficult, time-consuming work. It is considerably easier to target an agency or group of bureaucrats perceived as being in opposition to the administration and letting the personnel management process work itself out.

These results have implications for the potential future removal of protections for senior federal bureaucrats. The second Trump administration is in the process of implementing a revamped version of Schedule F. My results suggest that, if this were to occur, the individual targeting of political opponents would not be automatic, although heightened political conflict and increased executive capacity at the federal level might make it more likely. Re-

gardless of whether targeting happens or not, though, my results suggest that reclassification will likely have large effects on the federal workforce. Removing protections increases involuntary dismissals and departures and allows executives to remove specific types of employees (e.g., those who have worked in the agency for a long time). Increased turnover, especially if it is concentrated among long-time staff, can affect agencies' capacity, least in the short run, with possible downstream impacts on policy outputs.

My findings also inform the study of state politics. The states are more than just a testing ground for institutional variation or policies yet to appear at the federal level. State bureaucrats administer cap-and-trade programs, federal public welfare programs like Temporary Assistance for Needy Families and Medicaid, massive carceral systems, highway construction projects, state lands, public health projects, and other impactful policies. While scholars have examined the preferences of other state-level actors (Shor and McCarty 2011; Bonica and Woodruff 2012), this is the first attempt to systematically document the political views of entire state bureaucracies. Moreover, the null finding regarding political targeting in Mississippi is a small counterpoint to concerns over democratic "backsliding" within Republican-controlled states (Grumbach 2023). While Mississippi is only one case, its high rates of public corruption (Glaeser and Saks 2006; Liu and Mikesell 2014) and government scandals make it a seemingly likely place to uncover political cronyism.

Furthermore, the finding of much higher departure rates for longer serving employees points to the other dimensions of conflict that exist within state workforces. Especially within states under single-party control, principals might be focused on targeting other types of employees than political opponents. The longest serving employees, while possessing expert knowledge, might be perceived by the executive and agency leaders as an old guard that needs to be replaced with a more responsive group of new bureaucrats.

There are limitations to this study. While my twenty-state sample is large and contains regional and political variation, it might be missing important data points contained in the other states. Likewise, the analysis of political targeting is based on a single U.S. state.

Therefore, the findings may not fully generalize to other states or the federal bureaucracy. For instance, in Mississippi, public sector unions lack the power to collectively bargain. In settings where unions are more powerful, the effects of reclassification might be more muted. Gubernatorial power might matter, too. In other cases, an executive might be able to utilize staff or outside advocacy organizations to identify opposing employees and closely-aligned replacements.

Future work can use my findings to explore a variety of interesting, pressing questions. I use the variation in the partisan composition of senior echelons of state workforces as a jumping off point for my causal tests. Other research should try to explain why so many Democrats work in Republican-controlled states. Is it simply a product of the distribution of voters across and within states? Or do other factors, such as race, matter (e.g., Madowitz, Price, and Weller 2020)?

Other scholars should examine the impact of reclassification on other outcomes of interest. I focus solely on departures, but reclassification might also affect compensation and hiring patterns. Future analyses might also look to link up similar employee-level analyses with agency-level measures of service delivery to see if reclassification affects the operation of government. Scholars should continue to look beyond the federal workforce (and Mississippi) to answer these important questions. The other U.S. states that have reclassified their public employees into at-will employment in recent decades are a fertile ground for answering pressing questions about the staffing of American bureaucracies.

CHAPTER 3

Bureaucratic Departures After Civil Service Rollbacks

Public employees' job security is increasingly precarious. Over the last three decades, a number of states, including Florida, Georgia, Kansas, Indiana, Missouri, Oklahoma, Mississippi, and Arizona, have also made it easier to fire public employees (Forman 2021; Stephenson 2012; Cournoyer 2012; Parson 2018). The details of the reforms vary by state, but they all share a common emphasis on reducing the burdens faced by managers looking to remove or discipline public employees. Likewise, the second Trump administration has dismissed scores of federal employees, many of whom ostensibly enjoyed safeguards against quick termination, and removed protections for tens of thousands of other federal bureaucrats (Wu et al. 2025; Trump 2025).

In contrast to recent trends, scholars often view civil servants' job security as fundamental to modern public administration. Insulating government employees from political job cycles helps attract motivated employees who are willing to invest in developing crucial skills and expertise (Gibbs 2020; Gailmard and Patty 2007, 2012). Civil service protections have also been shown to improve program performance and service delivery (Aneja and Xu 2024; Lewis 2007; Oliveira et al. 2024, cf. Moreira and Peérez 2021). Despite these benefits, few empirical studies examine the consequences of civil service rollbacks. Researchers have examined the theoretical implications of civil service reform (Gibbs 2020; Ujhelyi 2014) and documented employees' attitudes toward removing tenure protections at the state level (Coggburn 2006;

Goodman and French 2011; Bowman et al. 2003; Battaglio 2010; Nigro and Kellough 2000; Bowman and West 2006), but no studies have used observational data to examine the effects of transferring employees from protected to at-will status.

I investigate whether civil service rollbacks lead to increased departures from the public sector. Popular criticisms of recent reforms and formal theoretic accounts suggest that lowering the costs of dismissing public employees can lead to more departures due to increased terminations. I test this claim and lay out and test multiple hypotheses regarding which types of employees are most likely to exit following the removal of civil service protections. Building on research concerning how the president influences federal personnel to increase control over policy, I argue that executives can take advantage of civil service rollbacks to increase their influence over the bureaucracy's composition. If so, departures will likely increase among previously-protected influential employees who have opposing policy preferences or work in agencies important to the administration's policy goals. I also contend that budgetary pressures can foster increased exits from the workforce. With protections out of the way, public employees can be more easily removed when fiscal constraints necessitate spending cuts.

I test these expectations using the case of civil service reform in Florida. In 2001, Governor Jeb Bush signed into law "Service First," a package of personnel policies affecting how the state hired, fired, and compensated employees. The legislation loosened hiring procedures, condensed numerous job titles into broader occupational categories, and expanded the definition of what constitutes "cause" for dismissal. Most notably, Service First also transferred over 16,000 managerial, supervisory, and confidential positions out of the state's protected Career Service into the at-will Selected Exempt Service (SES). Beginning in July 2001, affected employees could be removed from their positions for any otherwise legal reason without the right to appeal their termination.

I use personnel records, retrieved via public records requests, to examine how the removal of tenure protections under Service First affected employee departures. The data, which

consist of monthly snapshots of nearly all Florida state employees from January 2000 through February 2004, are a rich source of information, including employees' full names, agencies, job titles, salaries, race, sex, and counties of employment. I also impute employees' civil service statuses and unique identification codes that allow me to track individuals' entry into and exit from the workforce. In total, the data cover 171,354 unique employees and 5,383,961 employee-month observations across 32 Florida state agencies.

I first test whether employees who lost their civil service protections in July 2001 were overall more likely to depart than their still-protected peers. I find no evidence that affected employees were more likely to depart the workforce in the quarters immediately following reform. However, employees who lost their tenure protections in July 2001 were at increased risk of departing the workforce in a few quarters in late 2002 and 2003. Next, operationalizing my expectations regarding which types of employees are more likely to depart following the rollback of protections, I test whether departures increased among higher-earning employees employed in agencies either comprised of more registered Democrats or where the number of appropriated positions had been cut by the legislature. I do not find any evidence to suggest that employees in either of these segments of the workforce were more likely to depart following the rollback of protections.

Finally, I evaluate whether departures were more likely in agencies important to Governor Bush's policy goals. I take advantage of a 1998 constitutional referendum that gave the Florida Governor greater control over the Departments of State and Education in January 2003, roughly 18 months after the onset of Service First. Since reforming education policy was a cornerstone of Governor Bush's policy agenda—and there is no indication that the operations of the Department of State were particularly important to him—this is a useful setting for measuring whether at-will departures were more likely in a salient agency. I show that in the month before Bush formally gained control of the agency, the predicted probability of an SES employee in the Department of Education departing the workforce was approximately five times higher than for both career employees in the Department of

Education and other unprotected SES employees throughout the rest of the workforce. Via a placebo test, I show that there is no similar increased risk of departing for unprotected employees in the Department of State. Since the spike in departures from the Department of Education only occurred in one month, I argue that it was likely due to reorganization efforts right before the agency officially transitioned to being under the governor's control rather than anticipatory voluntary exits.

Overall, my results suggest that Service First contributed to heightened departure rates within some salient segments of the Florida workforce such as the Department of Education. However, the effects of removing tenure protections—at least in terms of departures—occurred largely along the margins of Florida's public sector. The lack of large-scale increases in departures, relative to the results from Mississippi in the prior paper, underline that the rollback of protections does not necessarily lead to increased turnover. Moderating factors, such as scandals that implicate agencies and employees' performance and political conflict, appear to be key forces in shaping how civil service rollbacks impact personnel management. Overall, these results point to the need for additional research into the degree of political conflict between bureaucrats and principals in one-party states as well as further studies of the impacts of civil service rollbacks on bureaucratic behavior and agency performance.

Tenure Protections

Tenure protections are a mainstay of many modern bureaucracies. Federal bureaucrats gained tenure protections around the turn of the 20th entury. While the 1883 Pendleton Act was the bellwether for civil service reform, it did not enshrine many protections for employees once they secured a position in the new merit-based classified service. As a contemporary Senate report summarized, the Pendleton Act

> does not touch the questions of tenure of office, or removals from office, except that removals shall not be made for refusing to pay political assessments or to

> perform partisan service. It leaves both where it finds them (United States: Congress: Senate et al. 1882, p. ix).

As such, although positions classified in the new civil service needed to be filled according to merit, employees could still be removed due to political considerations. More thorough tenure protections did not emerge until 1897, when President McKinley ordered that classified employees could only be removed for "just cause" and had to be afforded the due process right to respond to their dismissal (*Annual Report of the United States Civil Service Commission* 1900, p. 13). These protections were expanded over time via a series of legislation and came to affect more employees as the classified service grew in size (Johnson and Libecap 1994).

Compared to the federal government, the U.S. states were relatively late to adopt merit-based protections for government employees. Although states like Massachusetts and New York implemented merit-based civil service systems in the 1880s, only seven other states had passed civil service laws by 1936 (Folke, Hirano, and Snyder 2011). In 1939, the federal government required that state employees working in agencies receiving federal block grants via the Social Security program enjoy merit-based protections. Despite this requirement, many states were still slow to implement broad-based civil service systems. Eighteen states did not implement a workforce-wide civil service system until after 1960, while Texas has never passed a broad civil service law for its public workforce (Walters 2002).

The introduction of merit-based hiring improved the quality of employees, reduced turnover, and, in some cases, enhanced service delivery (Aneja and Xu 2024; Moreira and Pérez 2021). The associated rise of tenure protections also led to improvements in the public sector workforce. As Gailmard and Patty (2007, 2012) argue, job protections are key for developing a skilled bureaucracy. Even individuals who are interested in working for the government and shaping policy face a dilemma when considering public service. Government jobs often require learning the intricacies of rules, procedures, and policies that, while necessary for government work, are not especially useful in other fields. If bureaucrats know that they can be promptly removed for political reasons, they will be hesitant to invest in

acquiring the know-how to do their jobs effectively. Protecting employees from hasty or politically-motivated dismissals reduces the risk of investing in the expertise necessary for skilled administration. With protections in place, bureaucrats interested in shaping public policy stick around and get better at their jobs, creating a skilled, albeit not neutral, workforce.

At the same time, however, tenure protections can prove frustrating to executives and managers dealing with the legal and logistical costs of punishing poorly performing employees. Civil service protections help incentivize skilled employees to join the workforce, but too much insulation can provide cover to unmotivated employees (Gibbs 2020). In the 1990s, a number of states began to target employees' protections, arguing that they stood in the way of quality administration. In Georgia, Governor Zell Miller told the legislature in 1996 that the state's merit system "offers no reward for good workers. It only provides cover for bad workers" (Walters 2002). Heeding the governor's call for reform, the state passed legislation mandating that, beginning in July 1996, all new hires in the Georgia state workforce would serve at-will. Affected employees could be fired for any otherwise legal reason without recourse to due process or appeal. Florida followed suit five years later, removing protections for a wide swath of mid-level managers and supervisors. Since then, a number of other states, largely under Republican control, have also made it easier to fire state employees (McGrath 2013). Indiana and Arizona increased the share of their public sectors serving at-will in 2011 and 2012, respectively (Stephenson 2012; Cournoyer 2012). Kansas followed suit in 2015 and recent legislation in Missouri and Oklahoma reduced protections for most state employees (Forman 2021; Parson 2018; Lorenz 2019). In a unique case, Mississippi has periodically revoked tenure protections for specific agencies following significant scandals or policy failures (*PEER Report 670* 2022; *PEER Report 651* 2020). Overall, a recent census noted that approximately 20 states have implemented significant reforms to their civil service systems since the 1990s (Glock and Mukherjee 2025).

Theoretical studies suggest some potential implications of recent reforms. Gibbs (2020)

shows that civil service protections incentivize motivated bureaucrats to enter and remain in the workforce because they do not have to work as hard to differentiate themselves from their unmotivated peers. As managers gain more power to remove bureaucrats, unmotivated employees become easier to remove. Yet, removing tenure protections altogether pushes motivated employees to seek employment elsewhere, despite their interest in government work. Walking back protections can have political implications too, potentially affecting both bureaucrats' willingness to work against opposing principals' reelection and politicians' incentives to use the workforce for partisan goals (Forand 2019; Ujhelyi 2014).

Surveys of state employees and managers affected by civil service rollbacks provide a mixed picture of reform. Personnel officials have a generally positive view toward at-will employment, especially as it pertains to increasing the responsiveness of employees (Coggburn 2006; Goodman and French 2011; Kim and Kellough 2014), although others report decreased motivation and trust after reform (Battaglio and Condrey 2009; Battaglio 2010). Unsurprisingly, affected employees who lost tenure protections see fewer benefits (Bowman and West 2006; Nigro and Kellough 2000; Bowman et al. 2003). While relatively few employees report that at-will employment contributes to politically-motivated management, employees in multiple states note that removing tenure protections facilitates budget cuts and government downsizing initiatives (Bowman et al. 2003; Goodman and French 2011; Coggburn 2006).

Other literatures, although not dealing directly with the rollback of civil service protections, are also relevant. A number of studies from both the federal workforce and other countries suggest that policy disagreements can influence turnover among senior bureaucrats, even those who enjoy civil service protections (Kim and Hong 2019; Dahlström and Holmgren 2019; Boyne et al. 2010; Bolton, de Figueiredo, and Lewis 2021; Doherty, Lewis, and Limbocker 2019a). Another body of work examines the strategic management of political appointees by executives. The job status of newly-minted at-will employees resembles that of political appointees. Both can be removed quite easily with few, if any, options

for recourse. If at-will employees are treated as political appointees, then research suggests that they could be replaced in order to increase control over particular agencies and reward supporters (Lewis 2008, 2011; Hollibaugh, Horton, and Lewis 2014).

Existing studies provide helpful insights regarding the potential effects of removing civil service protections, but they also point to the need for additional research. For one, it is unclear the extent to which theories of turnover and politicization tested at the federal level apply to the states. Among other differences, state governments possess unique institutional arrangements (Krause and Woods 2014), state agencies possess different policy portfolios than their federal counterparts, and one-party rule is common in the states. Furthermore, bureaucrats whose protections have been removed occupy a unique position. While they are no longer protected civil servants, newly-minted at-will employees often occupy positions that are further down agencies' organizational charts than political appointees. Surveys of state employees affected by the rollback of tenure protections provide some insights about the impacts of reforms, but it is difficult to estimate causal effects due to the lack of pre-reform observations.

Theoretical Expectations

Removing civil service protections makes it easier for managers to remove employees whom they want to fire (Gailmard and Patty 2007; Gibbs 2020). This does not necessarily mean that departures will increase. Strategic bureaucrats might instead alter their behavior to better fit supervisors' and executives' expectations. Likewise, executives might be hesitant to remove employees over concerns about decreasing program performance or worse service delivery. Yet, there are certain conditions under which departures are more likely. Building on existing research regarding how executives use personnel management to achieve their policy goals and surveys of state employees affected by reform, I lay out those conditions below and extract empirical implications.

Policy Control

Much like presidents, governors build a case for reelection and burnish their legacies by following through on policy promises (Moe 1985). In part, implementing policy priorities requires working with the legislature to pass new statutes. State agencies, however, have taken on increasing policymaking responsibilities over the latter half of the 20th century (Jenks and Wright 1993). State agencies are loci of policymaking capacity and expertise, especially in the numerous states with part-time civilian legislatures (Boushey and McGrath 2017). Consequently, if governors want to see their policies implemented, they need to be able to control state agencies.

Many governors possess a wide range of tools for controlling bureaucracies, including line-item vetoes, centralized rule review, and reorganizations (Grady and Simon 2002; Schwartz 2020; Holtz-Eakin 1988; Seifter 2017, 2018). The rollback of civil service protections provides an additional mechanism. With tenure protections removed, the legal and logistical costs associated with dismissing employees decrease. Newly-minted at-will employees are suddenly less insulated from political pressure. Executives have a much freer hand to pressure employees, push them to resign, or remove them outright. Of course, executives have to be strategic in whom they choose to remove. Removing too many employees in the name of greater responsiveness can lead to the type of visible policy failures easily punished by voters (Lewis 2011).

Influential employees with opposing policy preferences are a natural target for executives interested in balancing the costs of removing employees with the benefits of increased policy control. Although many of the highest positions in an agency are occupied by political appointees, civil servants also occupy powerful positions with decisionmaking power over critical policy, budgetary, and regulatory decisions (Heclo 1977; Doherty, Lewis, and Limbocker 2019a). Many of these employees were initially attracted to government work because of the opportunity to shape policy and thus often have their own views about what policy ought to look like (Gailmard and Patty 2007). Although oversight and professional norms limit

the degree to which civil servants influence the ideological bent of policy, providing expert bureaucrats with discretion nevertheless opens the possibility of drift (e.g., Potter 2017). As a result, considerable anecdotal and quantitative evidence suggests that executives try to remove at least some senior civil servants with opposing views following their election (Kim and Hong 2019; Dahlström and Holmgren 2019; Boyne et al. 2010; Bolton, de Figueiredo, and Lewis 2021; Doherty, Lewis, and Limbocker 2019a). It seems plausible that, following the rollback of civil service protections, opposing senior employees will also be more likely to depart as the executive tries to gain more control of important policymaking positions.

If civil service rollbacks are used to enhance control over policymaking, governors will likely also concentrate on increasing their influence over agencies important to their policy agenda. Focus is a limited resource for executives. Writing in reference to presidents, Heclo (1977, p. 12) notes that "presidential leadership is like a spotlight that can sweep across the range of executive activities but can concentrate on only a few at a time." The same holds for governors, who have to be strategic about where to focus their attention. Governors who campaign on changing education and criminal justice policy are likely attuned to the actions of the education, corrections, and state police agencies. Limited time and energy mean that other agencies, such as the department that handles vocational and business licensing, will receive less attention, even if they possess important policymaking responsibilities. Differences in attention should also be reflected in departure rates following civil service rollbacks. Agencies that are salient to the governor will likely experience increased departures as the governor ensures that the right people are well-positioned within the department to implement preferred policies. This will especially be true if the salient agency has had an adversarial relationship with the executive.

Budgetary Control

While civil service rollbacks can facilitate increased policy control, they can also serve as a means to other ends. Unlike the federal government, most states must pass balanced budgets

(*Budget Processes in the States* 2021). As a result, state governments are under particular pressure to keep annual spending below receipts. Compounding this pressure is the rising dominance of the Republican party at the state level. Running on a platform of reduced spending and smaller government, Republicans have been in control of both legislative houses and the governorship in at least 20 states since 2010.

Rolling back civil service protections provides a tool for governors and agency heads looking to reduce government spending. Since cause is not necessary for dismissal, at-will employees are an attractive target for reductions. This is especially true in many of the states where civil service protections have been revoked, as public sector unions are usually weak or nonexistent (McGrath 2013). Employees who have lost their civil service protections often point to cutting spending as a point of the reform. In Florida, 61% of employees affected by the 2001 civil service reforms noted that the aim of reform was to "downsize government" and 83% reported that they were viewed as "costs to be controlled" (Bowman et al. 2003). Personnel officers in Mississippi and Texas also note that at-will employees are removed due to budget shortfalls, although dismissals often occur for other reasons too (Goodman and French 2011; Coggburn 2006).

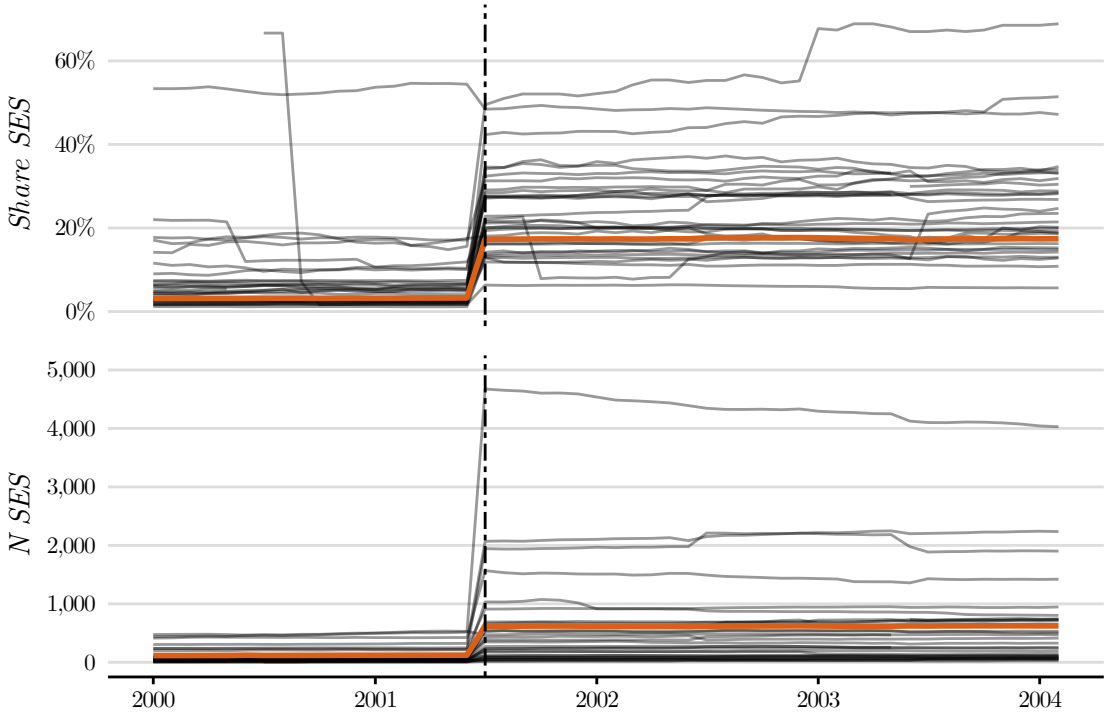
If governors use the rollback of protections to reduce state budgets, we should expect to see more departures in agencies under greater budgetary pressure. The logic here is fairly straightforward. As an agency is appropriated fewer funds from the legislature, it will face greater incentive to cut spending in order to make up the shortfall. Lacking tenure protections, at-will employees will increasingly be targeted for removal. Agency heads will likely also focus reductions on high-earning positions as these bureaucrats are especially costly for the state.

Service First

I test the expectations outlined above using the case of civil service reform in Florida. In his 2001 State of the State address, Governor Jeb Bush called for the adoption of "Service First," a major reform of Florida's civil service system. Alluding to the private sector management principles that inspired the reforms, he told the legislature that "now it is time to reform our employment system so that, like the world-class service organizations that are driving Florida's economy, state government can provide the effective and efficient service that its 16 million citizens rightfully expect." The legislature heeded his call and promptly passed the reform package.

Service First took effect in July 2001 and instituted numerous changes to Florida's civil service system. Streamlined hiring procedures reduced the amount of paperwork managers had to complete to hire new candidates. The state's 3,300 job classifications were collapsed to 145 occupational groups, allowing managers to grant salary raises without changing employees' job titles. Seniority-based "bumping" during reductions in force was eliminated and "poor performance" was added as cause for disciplining or removing career employees (Bowman et al. 2003; *State of Florida Annual Workforce Report: January through December, 2001,* n.d.). Most notably, Service First also reclassified approximately 16,000 mid-level employees in confidential, managerial, and supervisory positions from the state's Career Service to the at-will SES. Affected employees received additional paid time off and improved benefits but lost their tenure protections (West and Bowman 2004). Employees in supervisory, managerial, and confidential positions could now be dismissed from their roles for any otherwise legal reason, with no options for appeal. Given that the reforms targeted mid-level employees rather than rank-and-file state workers, employees were more likely to lose their protections if they had higher earnings, worked in or around Tallahassee, or had more years of experience working for the state (See Figures B.2 and B.3 in the Supplementary Information).

Figure 3.1 – The Size of the SES Workforce Dramatically Increases in July 2001 Shows the share and number of full-time Florida state employees in the SES for each agency and month from January 2000 through July 2004. The black dashed line denotes the onset of Service First. The orange lines show the share of the statewide workforce that is in the SES in each month (top panel) and the mean number of SES employees in an agency for each month (bottom panel). Excludes employees in the state university system and Department of the Lottery.



Prior to reform, most employees in Florida's executive branch fell into one of three personnel groups: the Career Service, the SES, or the Senior Management Service. The vast majority of employees served in the Career Service, while bureau heads and high-level political appointees were covered by the SES and Senior Management Service, respectively. As shown in Figure 3.1, which displays the number and share of full-time SES employees across 32 Florida state agencies, the SES was a relatively small part of the workforce before July 2001. Approximately 3% of the full-time state workforce was in the SES before Service First, with the average agency having about 120 SES employees. Beginning in July 2001, the SES greatly expanded in size. The average agency now employed over 600 SES employees.

Statewide, over 17% of the workforce—over 20,000 employees— served in the SES. Some agencies were particularly affected by the reform efforts due to the share of their workforce employed in mid-level positions. The share of the Department of Management Services serving in the SES, for instance, jumped from around 5% to 42% in July 2001, while the share of the Department of Corrections in the SES only increased by 5 percentage points.

Data

I primarily rely on employee personnel data, collected via public records requests to the Florida Department of Management Services, to test how Service First affected departures. The data consist of monthly snapshots of employees in Florida's State Personnel System from January 2000 through February 2004.[1] Nearly all employees of the Florida Executive Branch, with the exception of state university and lottery employees, are included in the snapshots. Overall, the data include 171,354 unique employees and 5,383,961 employee-month observations. The snapshots provide a rich description of public employees in Florida, containing, among other variables, employees' full names, agency, sub-agency, county of employment, race, sex, initial hire date, full-time status, and annual salary.

The personnel files do not include two key variables: unique employee identification codes that follow employees over time and civil service status. I impute employee identifiers by grouping observations with similar observable characteristics across months. If a set of observations share the same first and last names, middle initials, race, sex, and initial hire dates, I deem it to be the same person. I assign employees to their respective civil service designation using Collective Bargaining Unit (CBU) codes, which are provided in the data. Florida's Public Employees Relations Commission assigns a CBU code to a position based on the type of work performed (e.g., "Fire Service Unit" or "Supervisory Unit").[2] Helpfully,

1. The structure of the personnel data changed in early 2004. Beginning around March 2004, the rates of missing values spike for variables like initial hire date, race, and middle initial. As such, it is extremely difficult to to assign unique employee identification codes past February 2004.

2. State law does not permit all CBUs to collectively bargain. In particular, the Supervisory and Man-

these codes closely map to whether an employee belongs to the Career Service, SES, or SMS and I therefore use them to assign civil service status. In the Supplementary Information I show that the number of employees assigned to the Career Service and SES using CBU codes are similar to the number reported in annual workforce reports published by the Florida Department of Management Services (Table B.1).

Evaluating Service First requires identifying "switchers"—those employees who were transferred out of the Career Service into the SES in July 2001. Most employees who lost their protections served in the Managerial/Confidential and Supervisory CBUs until July 2001 when they were transferred to new CBUs in the SES.[3] However, some employees in the Supervisory and Managerial/Confidential CBUs remained in the Career Service after Service First. At the same time, some employees in other CBUs were transferred to the SES in July 2001.[4] Further complicating matters is that, although small, the SES existed before Service First, meaning that not all employees in the SES after July 2001 were switchers. Given these challenges, I initially define switchers as any employee in either the Supervisory or Managerial/Confidential CBU units before July 2001 or in the SES after July 2001. I then drop any employee who was in the SES both before and after Service First and employees who remained in the protected Supervisory or Managerial/Confidential CBUs after July 2001. The resulting treatment group of employees whose job protections were removed in July 2001 includes approximately 12,000 employees per quarter before Service First and over 14,000 employees per quarter following reform (See Figure B.5). The baseline departure rates across all quarters for the switcher treatment group and the control groups are .029

agerial/Confidential units who lost tenure protections were unable to bargain. See the full list of codes and their definitions (DMS, n.d.).

3. The state defines Supervisory employees as those who "spend the majority of their time communicating with, motivating, training and evaluating employees, and planning and directing employees' work. Supervisory employees have the authority to hire, transfer, suspend, layoff, recall, promote, discharge, assign, reward or discipline subordinate employees or to effectively recommend such actions." Managerial/Confidential employees "are involved in collective bargaining, personnel or budget administration...[or] act in a confidential capacity to assist or aid managerial employees" (DMS, n.d.).

4. A memo from the Florida Department of Management Services states that employees in the Managerial/Confidential and Supervisory CBUs were not transferred to the SES if they "are in the special risk retirement class, administrative law judges, hearing officers, or professional health care workers" (*Effect of Changes Due to Senate Bill 466*).

and .035, respectively.

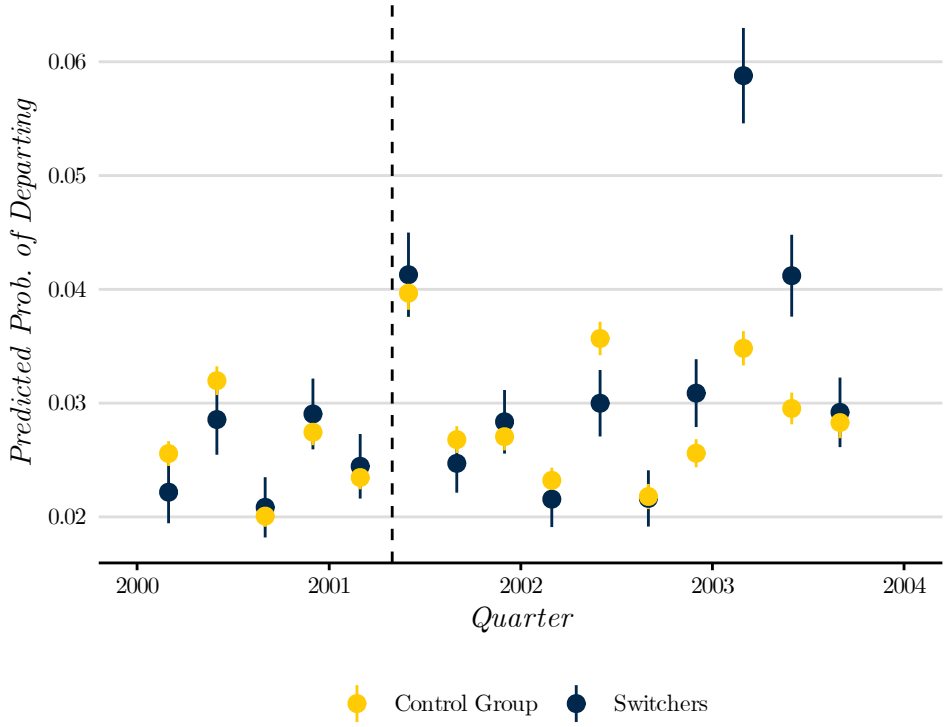
Does Removing Protections Increase Overall Departures?

I first test whether employees who lost their civil service protections were more likely to leave the workforce than their peers who remained in the protected Career Service. The dependent variable is whether an employee departs the state workforce in a given quarter. Subsetting the data to quarters reduces month-to-month fluctuations in departures. I create the departure variable by finding the last quarter that an employee works for the state. The nature of the personnel data means that it is not possible to know why someone leaves, only that they depart the dataset. I test for increased departures among switchers using a logit model with quarterly fixed effects and binary controls for whether an employee is white, female, and works in Leon County (where the state capital Tallahassee is located) or an adjacent county. I also control for employees' annual salary, years of experience with the state, and squared years of experience.

Figure 3.2 shows the estimated predicted probabilities from the model. The blue and yellow points show the predicted probability of departing in a given quarter and associated 95% confidence intervals for, respectively, switchers and the control group of employees who remained in the Career Service. Before Service First—denoted by the dashed line—the probability of departing in a quarter mostly hovers between .02 and .03, on average, for both groups. There is little divergence in departure rates for the managers, supervisors, and confidential employees who will lose their tenure protections and employees in the rest of the Career Service. The probability of departing increases for both groups of employees in the first quarter following Service First, before returning to pre-reform levels. In the second quarter of 2002, the predicted probability of departing was actually higher for still-protected employees than those who lost their protections from Service First. However, beginning in

late 2002 and continuing into 2003, switchers become increasingly likely to depart relative to employees in the Career Service. In the second quarter of 2003, switchers' probability of departing was nearly .06, on average, while still-protected employees in the Career Service departed with an average probability of .035.

Figure 3.2 – Mixed Evidence that Employees Switched to SES Were More Likely to Depart Shows the predicted probability of departing for employees switched to the SES and control employees who remained in the Career Service. The dashed line represents the onset of the Service First reforms. Predicted probabilities are estimated via a logit model for a white female working in the capital area with mean earnings and years of experience. Coefficients of the control variables are available in Table B.2. Results are similar using an alternative, more expansive definition of the treatment group (Figure B.1)



Overall, there is little evidence of an immediate purging of previously protected employees following the rollback of protections in July 2001. Although departures increase in the first quarter following Service First, there is no apparent difference between the probability of departing for protected and unprotected employees. Nevertheless, divergences do emerge in future quarters. This suggests that overall results might be masking underlying trends in

subgroups of employees and over-time changes in the influence of moderating variables.

Policy Control and Fiscal Constraints

Testing for increased departures in certain segments of the Florida workforce following Service First requires operationalizing employees' influence on policymaking and opposition to Jeb Bush's administration, as well as budgetary pressures faced by agencies. I use annual salaries to measure employee influence. Service First removed tenure protections for mid-level supervisors and managers, but not all employees affected by reform had an equal influence on policymaking. In addition to operations and management consultants, senior management analysts, and program administrators, Service First removed protections for office support staff and secretaries who worked with senior officials. The former group of bureaucrats has more of a direct impact on policy and likely also earns more as a result.

I measure political conflict between agencies and the governor using the share of Democrats in a state agency, which I calculate using individual-level voter registration records. The voter registration data comes from the vendor Polimetrix and notes the registered partisanship of all Florida voters as of May 2005. I match state of Florida employees to their associated voter files by finding records with the same first and last name, middle initial, race, and sex.[5] Aggregating the matched results to the agency level rather than using the individual-level results helps mitigate two challenges with the voter records. First, partisanship and ideology are distinct but correlated concepts. Second, the voter records are a few years out of date. In both cases, measuring political conflict at the agency level smooths out individual-level noise introduced by variation in the policy preferences of Democrats and over-time changes in registration. The resulting measure captures general trends in the preferences of agencies and the degree of disagreement with the Republican Bush administration.

Measuring the budgetary pressure faced by agencies also requires additional data. The Florida legislature passes the General Appropriations Act each year for the upcoming fiscal

5. Figure B.4 in the SI shows the share of employees in each agency that are registered Democratic.

year, which begins July 1. The bill, which the governor can line-item veto, allocates specific dollar amounts and full-time positions for every program within the state government. I measure the budgetary pressure an agency is under by looking at year-to-year changes in the number of positions allocated to an agency. I collect the number of annually appropriated positions for each Florida agency from budget summaries published on the Florida Fiscal Portal.[6] I then calculate the percent change in allocated positions from the prior fiscal year.

I use a series of logit models to test whether higher-earning employees were more likely to depart from more Democratic and fiscally-stressed agencies in the wake of Service First. The dependent variable is whether a quarter was a bureaucrat's last observed period of employment with the state. The main independent variable is the interaction between a binary time variable that is switched on if a quarter falls after July 2001 and, respectively, the logged number of Democrats and percent change in appropriated positions within the employee's agency. In order to isolate the role of employee influence, I estimate the model using both all SES employees and SES employees earning in the top quartile for the agency and period.[7] As a result, the interactions capture whether (higher-earning) employees in more Democratic or fiscally-constrained agencies were more likely to depart following the removal of tenure protections. The models include the same set of individual-level controls used in the model of overall departures in the prior section. Rather than including time fixed effects, however, these models account for time via a cubic time trend duration variable.[8] All standard errors are clustered by employee.

Table 3.1 displays the exponentiated results of the logit models on the odds-ratios scale. The first three models show that, following Service First, there is no evidence of a statistically significant increase in departures among all SES employees in more Democratic or fiscally-constrained agencies. Notably, the latter three models show that the same holds when fo-

6. http://floridafiscalportal.state.fl.us/

7. The results remain unchanged using triple-interaction models that include Career Service employees who did not lose their tenure protections.

8. Since the number of Democrats and percent change in appropriated positions are both defined at the agency level, I exclude agency fixed effects to capture additional variation.

Table 3.1 – Influential Employees in Politically Distal or Fiscally-Constrained Agencies No More Likely to Depart
Shows the results of logit models with standard errors clustered at the employee level. The "SF" variable includes quarters in the 3 years following Service First. Additional results with alternative definitions are available in the Supplementary Information in Tables B.3 and B.4. All models include individual-level controls for race, sex, salary, location, years of experience, and years of experience squared. Observed duration is modeled using a cubic trend.

	All SES			Higher-earning SES		
	(1)	(2)	(3)	(4)	(5)	(6)
SF	0.95	1.44*	0.87	1.01	1.65*	0.88
	[0.52; 1.71]	[1.18; 1.76]	[0.49; 1.55]	[0.29; 3.54]	[1.12; 2.44]	[0.27; 2.93]
Positions	0.97*	0.95*	0.95*	0.98*	0.94*	0.93*
	[0.97; 0.98]	[0.92; 0.98]	[0.92; 0.98]	[0.97; 0.99]	[0.88; 1.00]	[0.88; 0.99]
ln(Dems)	2.05*	2.19*	2.09*	3.13*	3.51*	3.31*
	[1.46; 2.88]	[1.57; 3.07]	[1.49; 2.94]	[1.48; 6.61]	[1.68; 7.31]	[1.57; 7.00]
ln(Employees)	0.44*	0.43*	0.43*	0.29*	0.27*	0.27*
	[0.31; 0.63]	[0.30; 0.61]	[0.30; 0.61]	[0.14; 0.62]	[0.13; 0.58]	[0.13; 0.57]
SF * ln(Dems)	1.05		1.06	1.06		1.08
	[0.98; 1.13]		[0.99; 1.14]	[0.92; 1.23]		[0.94; 1.24]
SF * Positions		1.02	1.03		1.05	1.05
		[0.99; 1.06]	[1.00; 1.06]		[0.98; 1.12]	[0.99; 1.12]
Cubic Time	✓	✓	✓	✓	✓	✓
Ind. Controls	✓	✓	✓	✓	✓	✓
N	163,831	163,831	163,831	41,102	41,102	41,102

* Null hypothesis value outside the confidence interval.

cusing only on higher-earning employees. Employees earning in the top quartile within their agency were no more likely to depart from more Democratic or fiscally-constrained agencies following Service First. Although the coefficients on the time and number of Democrats interaction are in the expected direction, the coefficients on the budgetary pressure interaction are actually pointed in the opposite direction. In the Supplementary Information I show that these results also hold when looking at only the first year or two years following Service First (Tables B.3 and B.4).

My final hypothesis claims that departures increase following the rollback of protections in agencies that are more important to the governor. I focus on a specific salient case. In 1998, Florida voters passed a constitutional amendment increasing the governor's power over the Executive Branch. The amendment restructured the relatively large Florida Cabinet, reducing its size from six to three members. In addition to folding the state Comptroller and Treasurer into a single position, the amendment removed the Secretary of State and Commissioner of Education from the Cabinet. Rather than being led by an elected official, the Department of State would now be led by an official appointed by the Governor. The Commissioner of Education would be appointed by a new State Board of Education. Members of the Board would be appointed by the Governor and confirmed by the Senate. The amendment, which came into effect at the beginning of Jeb Bush's second term in January 2003, effectively increased his control over both agencies.

In contrast to the Department of State—which handles elections, corporate charters, and state cultural resources—the Department of Education was key to Bush's policy agenda. Education policy was a central issue of his successful 1998 campaign for governor. Touting his experience co-founding Florida's first public charter school, he advocated for increased testing, transparent school rankings, and providing vouchers to parents of students in poorly-performing schools (Johnston 1998). He also added the state's educational commissioner Frank Brogan to his ticket as candidate for lieutenant governor. As governor, he signed into law significant education reform in 1999 that incorporated many of the policy changes he

advocated for during the campaign.

Bush also had an adversarial relationship with the Florida state employees tasked with implementing education policy. Although he moderated his position by the time he was inaugurated, he had called for abolishing the Florida Department of Education during his first unsuccessful 1994 campaign for governor (Navarro 1998). Looking back on his time as governor while running for president, Bush summed up the resistance he encountered from bureaucrats in the Department of Education and their allies:

> These reforms weren't always popular. We were fought every step of the way by status quo education bureaucrats. We spent huge amounts of time filling out paperwork for federal bureaucrats. And the teachers unions hated what we were doing. In my re-election campaign in 2002, they didn't just bankroll my opponent; they mortgaged their building to do it. But they lost, and the kids won (Bush 2015).

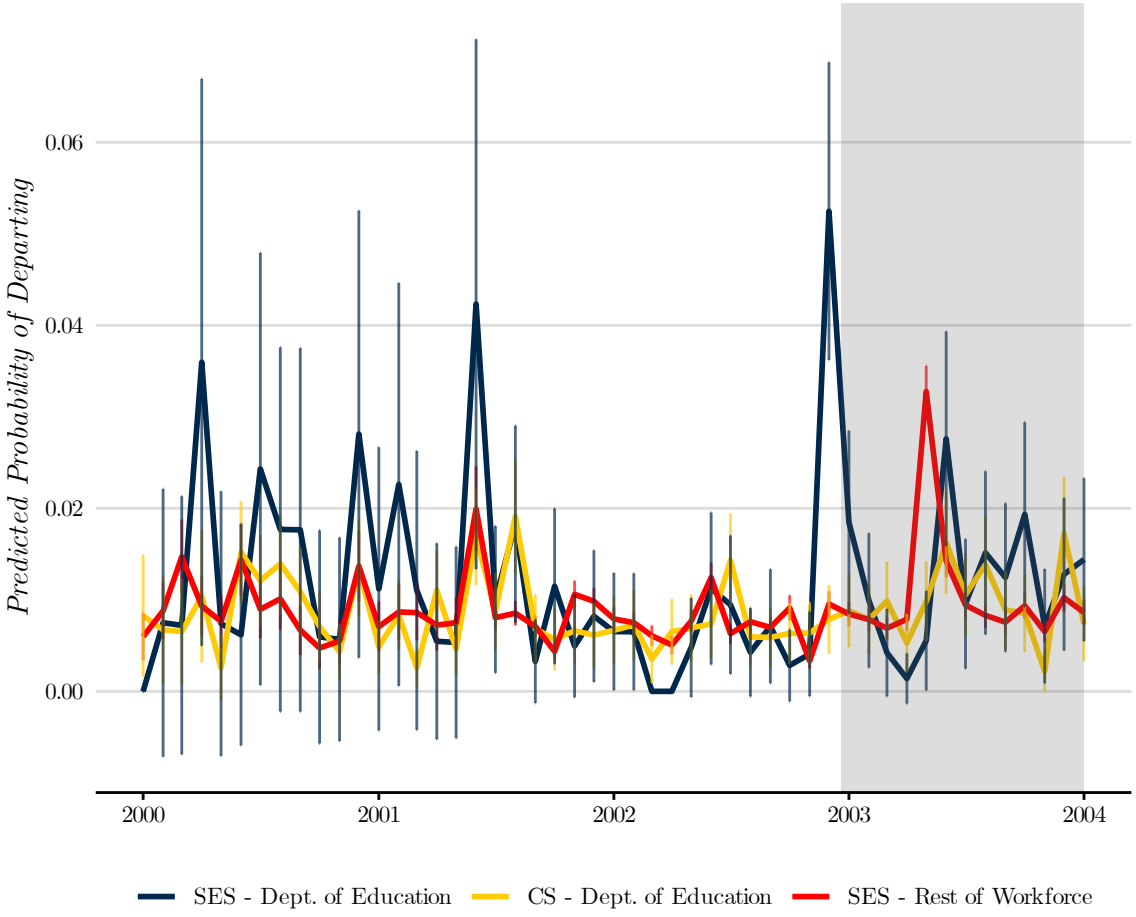
The Service First reforms 18 months earlier provided Bush an opportunity to remove opposing Department of Education employees during the agency's 2003 reorganization. The number of SES employees in the Department of Education increased by 173% in July 2001. Approximately 42% of the agency served at-will in the SES following the rollback of tenure protections. I test whether these unprotected employees were more likely to depart following Bush gaining additional control of the agency in January 2003. Using a logit model, I regress whether an employee departed in a given month against the interaction between a monthly time fixed effect and a categorical variable indicating whether an employee works in: 1) the SES in the Department of Education; 2) the Career Service in the Department of Education; or 3) the SES in the rest of the state workforce. The interaction between time and this three-way indicator allows me to test whether unprotected employees in the SES were more likely to depart the Department of Education during reorganization, relative to both other SES employees and other employees in the Department of Education. In addition to the main independent variables, the model includes individual-level controls for race, sex, years

of experience, squared years of experience, annual salary, and whether the employee works in Leon County or an adjacent county.

Figure 3.3 shows the results of the model in the form of predicted probabilities of departing with 95% confidence intervals. The predicted values are calculated for a white female employee working in the capital area with mean earnings, years of experience, and squared years of experience. The blue line shows the predicted probability of departing in a given month for SES employees in the Department of Education. The yellow and red lines show, respectively, the predicted departure probabilities for Career Service employees in the Department of Education and SES employees throughout the rest of Florida's public sector. The shading indicates the official beginning of the cabinet reorganization policy in January 2003.

Overall, the results show a large, statistically significant spike in the probability of Department of Education SES employees departing in December 2002, the month before the agency's reorganization. In that month, the probability of Department of Education Career Service and other SES employees leaving hovered around .01, while SES employees in the Department of Education departed with an average probability of .05. Notably, elevated departure rates only lasted for this one month. In the Supplementary Information, I show that the Department of State (which was less salient to Governor Bush) did not experience a similar increase in employee departures, despite also being reorganized to fall more under his control (Figure B.6).

Figure 3.3 – Unprotected Employees in Department of Education More Likely to Depart Month Before Reorganization Shows the predicted probabilities of departing and associated 95% confidence intervals for SES and Career Service employees, respectively, in the Department of Education and SES employees in the rest of the workforce. Predicted probabilities are calculated for a white female employee working in or around the state capital with mean earnings, years of experience, and squared years of experience. Shading indicates the onset of the cabinet reorganization that gave the governor greater control of the agency.



There are different reasons why departures among SES employees in the Department of Education spiked in December 2002. On the one hand, it could be that SES employees opted to leave the agency rather than work closely with an adversarial administration. However, there are issues with this interpretation. The reorganization of the Department of Education was not a shock to employees. It was approved by voters four years earlier. Despite this, there is no indication that departures rose in other months than December 2003 as employees anticipated the upcoming reorganization. It could be that employees were waiting to see the results of the 2002 gubernatorial election that pitted Bush against the Democratic candidate Bill McBride. However, if employees were waiting to see if Bush won re-election before opting out of the agency, it seems likely that protected employees in the Career Service would also have been more likely to leave. There is no evidence that this occurred.

Although the new State Board of Education did not formally gain control of education policy in the state until January 2003, in practice Bush appointees began reorganization efforts well before then. The 1998 constitutional referendum left a number of specifics about how education policy should be managed under the new system up to the legislature and governor. Consequently, in June 2001, Bush signed into law a significant reorganization of the state's education system, appointing new members of the Board of Education, the transitional Secretary of Education, and eliminating a number of higher education boards (Dunkelberger 2001). The legislation tasked the Board and transitional Secretary to work alongside the current (and final) elected Education Commissioner to restructure the Department of Education. The bill called for a reorganization that would "eliminate duplication across divisions" and "include a review and assessment of all bureaus, offices, divisions, and functions of the department" (Sebesta 2001). It is difficult to pinpoint when the impacts of these changes to the Department were felt by staff. However, they likely resulted in increased dismissals from the agency, perhaps leading to the spike in departures seen in December 2002.

Discussion

The expansion of the SES in Florida put many public sector employees in a precarious position. Previously insulated by the protections afforded by the Career Service, affected employees could now be removed for reasons other than cause. The evidence presented here, however, suggests that limited departures resulted from Service First. Despite becoming easier to remove from their jobs, newly-minted employees were not at increased risk of departing until roughly 18 months after Service First. Some of this increase stemmed from increased departures in the Department of Education during its 2003 reorganization, but the lack of evidence for other types of strategic dismissals (i.e., employees in more Democratic or financially-strained agencies were no more likely to depart) suggests that this bump might also be due to other unobserved factors introduced in the intervening period.

These findings have implications for the study of both bureaucratic and state politics. First, governors and other state agency heads do not necessarily treat newly-minted at-will employees as political appointees. Just because an employee becomes at-will does not mean that they will be replaced. Second, partisan conflict between bureaucrats and elected principals is lower at the state than federal level. Partisan and ideological disagreement is a frequent source for explaining the behavior of federal bureaucrats and their principals. At least in Florida, this result does not replicate at the state level. The lack of evidence for increased departures in more Democratic agencies following the rollback of civil service protections points to the need for further study of what structures conflict within state bureaucracies. Finally, my findings also point to the effects of rolling back civil service protections. While I do not find any evidence of widescale purges of state employees following the removal of tenure protections, I do show, via the case study of the reorganization of the Florida Department of Education, that removing tenure protections can provide executives with opportunities to remove employees in strategically important positions. Especially in environments with more political conflict, this could lead to concerning levels of public sector turnover.

There are limitations to this study that should be addressed in future research. For one, leaving the public sector is a rare event. There are other, less extreme ways that rolling back civil service protections can influence bureaucrats. For example, employees may adjust their behavior following the rollback of civil service protections to better align with principals' expectations. In addition, Service First is a single case of civil service rollbacks. Other states and the current Trump administration have also experimented with removing tenure protections. Additional research should examine how different institutional and political arrangements affect departures in the wake of civil service rollbacks.

Finally, my findings also suggest a need for more research into bureaucracies under single-party rule, an increasingly common phenomena in the United States. Most theories of bureaucratic organization and behavior are crafted with an eye to the federal system where political conflict is constant and intense. Future work should investigate why outpartisans opt to work for single-party governments and how executives exercise control when their parties likely will be in power over a long time horizon.

CHAPTER 4

Excessive Heat and Correctional Officer Departures: Evidence from Texas[1]

Prisons and jails across the U.S. are contending with an understaffing crisis. Hiring and retaining correctional officers has long been difficult (Lambert 2001), but rising incarceration rates and the COVID-19 pandemic have brought many prison systems to the tipping point. Between 2019 and 2022, the number of state-employed correctional officers declined by 10%, with states like Arkansas and Georgia experiencing declines of 20% and 29%, respectively (Heffernan and Li 2024). In some states, vacancy rates among correctional staff are as high as 50% despite widespread initiatives to attract new hires (Lieb 2023). Reduced staffing makes prisons more dangerous for both employees and incarcerated people. Numerous accounts document how understaffing is associated with increased violence, staff assaults, prolonged lockdowns, and poor health outcomes for incarcerated people (Heffernan and Li 2024; Lambert 2001; Minor et al. 2011; Nam-Sonenstein and Sanders 2024).

Most existing research emphasizes how psychological factors like stress, burnout, and organizational support are associated with correctional officer exits (Cullen et al. 1985; Finney et al. 2013; Lambert 2001; Schwartz et al. 2024). These studies generally rely on cross-sectional surveys administered to relatively small samples of correctional staff which preclude observing over-time variation in prison conditions. (Ferdik and Hills 2018; Griffin, Hogan, and Lambert 2014; Lambert and Hogan 2009; Minor et al. 2011). Even when data is observed

1. This paper is co-authored with Jacob Harris. Both authors contributed equally.

over time (Schwartz et al. 2024), survey-based measures that rely on officers' subjective perceptions are not well-equipped to assess how institutional characteristics like frequent violence, squalid conditions, increased inmate-to-staff ratios, and high security levels influence correctional employees' likelihood of exiting the workforce.

We improve upon these limitations by examining how excessive heat—an increasingly relevant source of poor working conditions in U.S. prisons—affects correctional officer departures. Very few states' prison systems have universal air conditioning. As a result, many prisons are sweltering in the summer months, with some reaching indoor temperatures of over 130 degrees (Salhotra and Melhado 2024). The poor conditions brought about by excessive heat have spurred numerous lawsuits and instigated a growing body of research documenting the negative effects of heat on rates of violence (Mukherjee and Sanders 2021) and incarcerated individuals' health (Skarha et al. 2022; Skarha et al. 2023). Yet, despite numerous anecdotal accounts of heat's impact on correctional staff and concerns over prison understaffing, we are the first to examine how excessive heat influences correctional officer exits.

We evaluate the impact of excessive heat on correctional officers employed by the Texas Department of Criminal Justice (TDCJ). Texas's state prison system is a particularly good setting for evaluating heat's role in fostering poor working conditions for correctional officers. The TDCJ operates the largest state prison system in the country. In December 2024, the agency had over 135,000 individuals in its custody across nearly 100 facilities. Despite Texas prisons being exposed to high levels of extreme heat in the summer months (Tuholske et al. 2024), only 31 of the TDCJ's 100 facilities were fully air-conditioned as of August 2023. Fourteen facilities lacked any air conditioning in their housing areas, with the remaining prisons having partial, often minimal, coverage. As a result, conditions within many TDCJ prisons are brutal in the summer months. A federal judge in 2025 called the lack of air conditioning in TDCJ prisons "plainly unconstitutional," while a different federal judge wrote in a 2018 injunction that incarcerated people in Texas "face a substantial risk of

serious harm from the sweltering Texas heat" (McCullough 2017; Salhotra 2025). Union officials in the state have called excessively hot Texas prisons "death traps" and likened working in units without air conditioning to "going up and down stairs at a football stadium in the heat of the day, while wearing a coat" (Dang 2022; Martin 2013).

We test whether these conditions lead correctional officers to depart the TDCJ workforce using individual-level personnel data and facility-level air-conditioning data. The personnel records consist of monthly snapshots of all TDCJ staff employed in security positions across the state from January 2010 to January 2023. The records are rich, noting employees' names, race, sex, ages, job titles, salaries, hire dates, and employing facilities. In order to determine whether correctional officers work in air-conditioned facilities, we rely on data from the Texas Prisons Community Advocates (TPCA), a nonprofit advocacy organization. The facility-level air-conditioning data, which the TPCA received via public-records requests to the TDCJ, notes whether each prison's housing areas have full, partial, or no air conditioning.[2]

Controlling for a variety of employee-, facility-, and state-level covariates, we show that before the onset of COVID-19, the odds of exiting the TDCJ workforce in a given month were, on average, 21% higher for frontline correctional officers in prisons with no air conditioning, compared to those working in facilities with full air conditioning. We demonstrate that this association is isolated to employees particularly affected by the heat — namely, new hires and frontline correctional officers. We also provide some weak evidence to suggest that seasonal temperature fluctuations moderate the relationship between excessive heat and departing. Departures among the least experienced employees in prisons without air conditioning slightly increase in the summer months relative to employees in cooled prisons. While not statistically significant, we do not find a similar increase among employees who have worked for the TDCJ for more than five years, suggesting that employees who have grown used to excessive heat are less impacted by high temperatures.

Overall, our results paint a mixed picture of how the poor working conditions resulting

2. Due to ongoing litigation regarding air conditioning in TDCJ facilities, we were unable to obtain this information directly from the TDCJ.

from excessive heat influence correctional officer departures. The correlational findings for the pre-COVID period fit with our expectations that excessive heat leads to an increased risk of exiting the workforce. Despite the lack of causal identification, subgroup analyses suggest that the correlations are picking up on real effects of heat rather than biases introduced by unobserved confounders. However, our main findings disappear and, in some cases, reverse following the onset of the COVID-19 pandemic. The new, complex challenges wrought by the pandemic suggest that there are ceiling effects to the benefits of air conditioning in prisons. While air conditioning can make difficult correctional work more palatable, it does not address all of the challenges associated with staffing the carceral state.

Understaffing in Prisons

It should not come as a surprise that departure rates are high among correctional officers. Colloquially described as "the toughest beat" (Page 2011), correctional work is dangerous, low-paying, and stressful. A survey of state correctional officers in California found that 70% of respondents had witnessed someone be seriously injured or killed, while 18% reported being seriously injured at work (Lerman, Harney, and Sadin 2022). Correctional workers are also increasingly being asked to compensate for staff shortages by working longer hours with less support. In Georgia, for example, the state increased overtime spending for correctional workers by over 1,000% between 2019 and 2022 despite the size of the correctional workforce decreasing by approximately 33% (Heffernan and Li 2024). The snowballing effect of understaffing leading to worse conditions for remaining employees recently came to a head in New York when the head of the state's prisons system wrote in a memo that "70% of our original staffing model is the new 100%," which helped to instigate large-scale unauthorized strikes among dissatisfied correctional employees (Roebuck 2025).

The numerous challenges of correctional work take a toll on correctional officers' physical and mental health. Correctional officers are at heightened risk of anxiety, Post-

Traumatic Stress Disorder, burnout, job dissatisfaction, and COVID-19 infection (Cheeseman et al. 2011; Cullen et al. 1985; Finney et al. 2013; Lambert 2001; Schwartz et al. 2024; Ward et al. 2021). Several studies have also indicated that the severe stress and burnout tied to correctional work are associated with higher departure rates among officers (Griffin, Hogan, and Lambert 2014; Lerman, Harney, and Sadin 2022; Vickovic, Morroe, and Lambert 2022). Perhaps most disconcerting is the elevated risk of suicide among correctional officers. One study estimated that the suicide rate is 39% higher among correctional officers than the general public (Stack and Tsoudis 1997), and more recent research suggests that elevated suicide rates persist (Frost and Monteiro 2020; Lerman, Harney, and Sadin 2022).

Another strand of research identifies organizational factors that correlate with correctional officer retention and departure. Multiple studies have shown that correctional employees who are more committed to their organization are less likely to exit (Lambert and Hogan 2009; Lambert 2001; Mitchell et al. 2000). Employees who report better organizational support from the prison and higher-quality supervisors are less likely to depart their jobs (Griffin, Hogan, and Lambert 2014; Leip and Stinchcomb 2013). Likewise, employees who express satisfaction with their coworkers are also at less risk of leaving (Minor et al. 2011).

Overall, existing evidence suggests that the difficulties of correctional work contribute to high levels of employee exits, although institutional support may ameliorate this to some degree. However, sizable gaps remain in the literature. Many studies of correctional officer exits are exploratory and rely on surveys fielded to a small number of respondents. It is difficult to generalize findings from a survey of a few hundred correctional officers in a single prison or correctional system. Furthermore, while survey-based methods allow for detailed analyses of officers' feelings and perceptions regarding correctional work, they complicate assessing how structural aspects of correctional officers' day-to-day experiences, such as working conditions and compensation, influence departure decisions. Understanding the impact of these factors, which in many cases underlie the psychological states scholars have shown to correlate with increased propensity to exit, requires observing a large number of

correctional officers experiencing different workplace conditions over time.

Heat in Prisons

Heat exposure is tied to numerous negative social outcomes. A large body of work has shown that gun violence and other forms of violent behavior are more prevalent on high-temperature days (Burke, Hsiang, and Miguel 2015; Colmer and Doleac 2023; Hsiang, Burke, and Miguel 2013). Similarly, a sweeping meta-analysis of studies testing the effect of climate on conflict finds that a one standard deviation increase in temperature increases the frequency of interpersonal violence and intergroup conflict by 4% and 14%, respectively (Hsiang, Burke, and Miguel 2013). Goodman et al. (2018) shows that heat exposure also leads to educational deficits, as warmer school days diminish learning and testing outcomes. Other studies have shown that heat negatively impacts economic productivity, civic engagement, and health (Deschenes 2014; Lamare 2013; Graff Zivin, Hsiang, and Neidell 2018).

The damaging effects of heat are exacerbated by the high-stress and highly restrictive environment typical of correctional institutions. Extreme heat is a persistent and largely unaddressed issue in many U.S. correctional facilities. Forty-four states lack universal air conditioning, including most Southern states where dangerous prison temperatures are most common (Tuholske et al. 2024). Temperatures in these non-air-conditioned prisons can exceed 130 degrees and have been likened to "torture chambers," "concrete coffins," and "sitting inside of a convection oven" (Lartey 2023; Salhotra and Melhado 2024). Incarcerated individuals sometimes adopt extreme measures to survive in these conditions, including flooding their cells to lie in the wet concrete, lighting fires, bathing in toilet water, or screaming in unison for help (Goodman 2023; *Wilson v. Dixon,* n.d.).

Excessive heat in prisons has been linked to numerous negative consequences for incarcerated individuals, including higher rates of mortality, violence, suicide attempts, and health problems (Cloud et al. 2023; Lartey 2023; Mukherjee and Sanders 2021; Skarha et al. 2023;

Tuholske et al. 2024). For example, Mukherjee and Sanders (2021) leverage daily variation in temperature to study the effect of heat on violence in Mississippi prisons. They find that days with unsafe heat indices increase the number of daily violent interactions by 20%. Cloud et al. (2023) also show a strong positive association between high-temperature days and suicide-watch incidents on a sample of six state prisons in Louisiana. Another study found that roughly 13% of all deaths during warm months in Texas prisons may be attributable to extreme heat (Skarha et al. 2022).

While incarcerated individuals bear the brunt of extreme heat within prisons, correctional employees are also affected by the poor working conditions. In addition to being uncomfortable, hot conditions can seriously affect correctional officers' well-being. In Texas, between 2012 and 2013, 147 state correctional employees reported illness or injury due to heat (Martin 2013). Across the state, incarcerated people have reported seeing correctional workers faint on account of heat (*Deadly Heat in U.S. (Texas) Prisons* 2024). In New Jersey, correctional workers have reported that excessive heat has negatively affected their incident response times (Schuster and King 2022). Even if not a threat to their own or incarcerated peoples' well being, working in a prison without air conditioning is at best a major inconvenience. The head of the Louisiana Department of Public Safety and Corrections recently noted that officers in prisons without air conditioning were changing their clothes up to three times per shift (O'Donoghue 2022).

No scholarly work has yet to examine how the dangers and nuisances of excessive heat affect correctional officers' willingness to remain in their jobs, but state legislators, investigative reports, and advocates have argued that the poor conditions faced by correctional officers directly contribute to understaffing in prisons (Ballard 2022; McGivern 2024; Salhotra 2024). Several pathways exist through which extreme heat may negatively affect correctional officer retention. Most directly, correctional workers might be more likely to depart in search of jobs with better working conditions during the summer months when heat is particularly salient. However, anticipation effects can also arise. Employees may leave in the winter or

spring in anticipation of summer heat. Given the association between heat and illness and injury, they may also depart in the fall after weighing the health costs of working over the prior summer. Heat may also operate more indirectly by influencing the selection of correctional officers. Stronger applicants who are less likely to depart may opt out of working in correctional facilities without air conditioning, leaving prisons to be staffed by employees with higher baseline probabilities of departing.[3]

While it is empirically difficult to fully parse these different channels, they do provide some testable expectations. Namely, employees in prisons without air conditioning are more likely to depart than their peers in cooled facilities. While this relationship may be magnified in the summer months when heat is most salient, it is not necessarily the case that heat only influences departures during the summer. Additional hypotheses can also be drawn out by focusing on different segments of the correctional workforce. New correctional officers, for instance, have less experience working in excessively hot workplaces. Unlike their peers who have been on the job for a few summers, they have not become acclimated to the hot conditions. Their willingness to work in prisons in the summer without air conditioning is also still unknown. These employees, therefore, may be particularly likely to leave during hot times of the year, as well as in the spring or fall as they anticipate or react to hot temperatures. Likewise, frontline staff are also disproportionately impacted by excessive heat in prisons lacking air conditioning. In Texas, as we describe in greater detail below, all prisons have air conditioning in administrative and medical areas. It is the housing areas, where incarcerated people live and frontline staff frequent, where air conditioning is often lacking. As a result, it is also probable that frontline staff are more likely to depart on account of excessive heat than supervisory employees.

3. Burton et al. (2022) shows that prison employees often do not have stable employment histories.

Data

We use two datasets to examine the relationship between air conditioning and the departure of correctional employees. The first consists of monthly snapshots of all correctional staff employed by the TDCJ from January 2010 through January 2023, which we received via multiple public records requests to the agency. For each month, the data note the full name, age, facility, race, sex, full-time status, job title, and most recent hire date for all correctional staff employed in security positions at TDCJ facilities. Most employees in the dataset are in frontline correctional officer positions (83.7%), but the data also include first-line supervisors, such as sergeants, lieutenants, and captains, as well as managers (e.g., majors, assistant wardens, and wardens).[4] The personnel files do not include unique employee identification codes that follow employees throughout their tenure with the TDCJ. As a result, we assign unique employee identification codes by grouping together observations with similar ages and the same first name, middle initial, last name, race, last hire date, and sex. Since the codes include employees' last hire date with the TDCJ, they can capture instances where the same employee departs the workforce and then returns later in the study period.[5]

Second, we determine whether correctional employees work in air-conditioned facilities using data published by the TPCA, a nonprofit advocacy organization. Through a public records request, the TPCA gathered data on whether TDCJ prisons' housing areas were fully, partially, or not air-conditioned as of April 2022. According to the TDCJ, administrative, educational, and medical areas are air-conditioned in all facilities, even if housing areas are left uncooled. The TPCA data are static snapshots. They do not note how air-conditioning coverage changed over the course of our study period. Thus, we restrict our analysis to facilities with full air conditioning or no air conditioning. In addition to offering a cleaner test, the tails of the air conditioning coverage distribution are also less susceptible to over-time fluctuations. We are only aware of two prisons, the Hodge and Pack Units, that

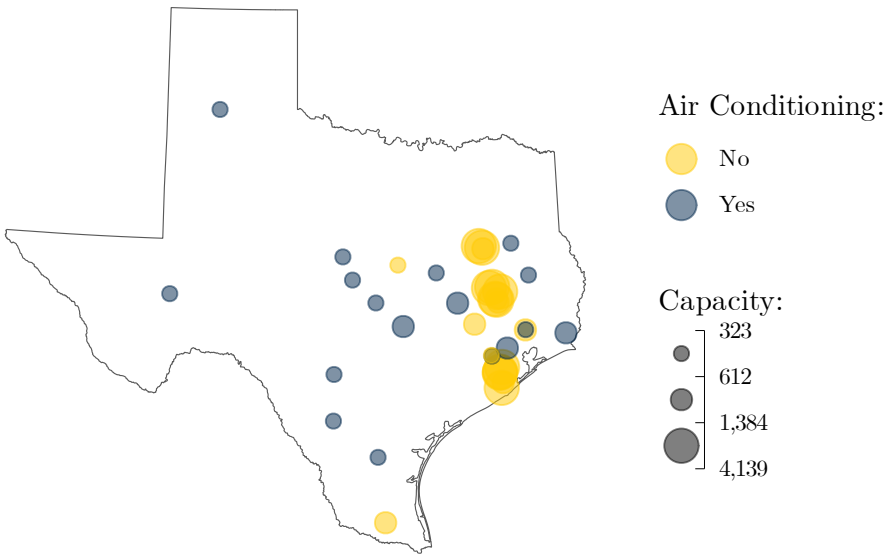
4. The data also include some employees in auxiliary roles, like food and laundry managers.

5. Approximately 13% of the unique employees in the dataset had more than one employment spell with the TDCJ.

had full air conditioning installed during our study period after previously lacking any air conditioning in housing areas. These installations followed a four-year legal battle between individuals incarcerated at the Pack Unit and the state, underscoring that the TDCJ rarely makes full-scale changes to prisons' air conditioning (McCullough 2017, 2018; Blakinger and Banks 2018).

It is also unlikely that the TDCJ installed full air conditioning in a prison that was previously partially air-conditioned. Most partially air-conditioned prisons have, in practice, few air-conditioned beds. Installing full air conditioning in one of these prisons is a considerable undertaking, similar to that which occurred in the Hodge and Pack Units. Finally, it is unlikely that a prison with no air conditioning in 2022 was air-conditioned in the past. Ten of the twenty-four prisons identified in the TPCA data as having no air conditioning were built before 1920. Given the high costs of installation, it is unlikely that any prison, especially one over 100 years old, would remove air conditioning after initially providing it.

Figure 4.1 – **Location of TDCJ Prisons** Shows the location of the forty-one prisons operated by the TDCJ that have either full or no air conditioning. Points are binned into tertiles based on the number of incarcerated people the given prison can have in custody.

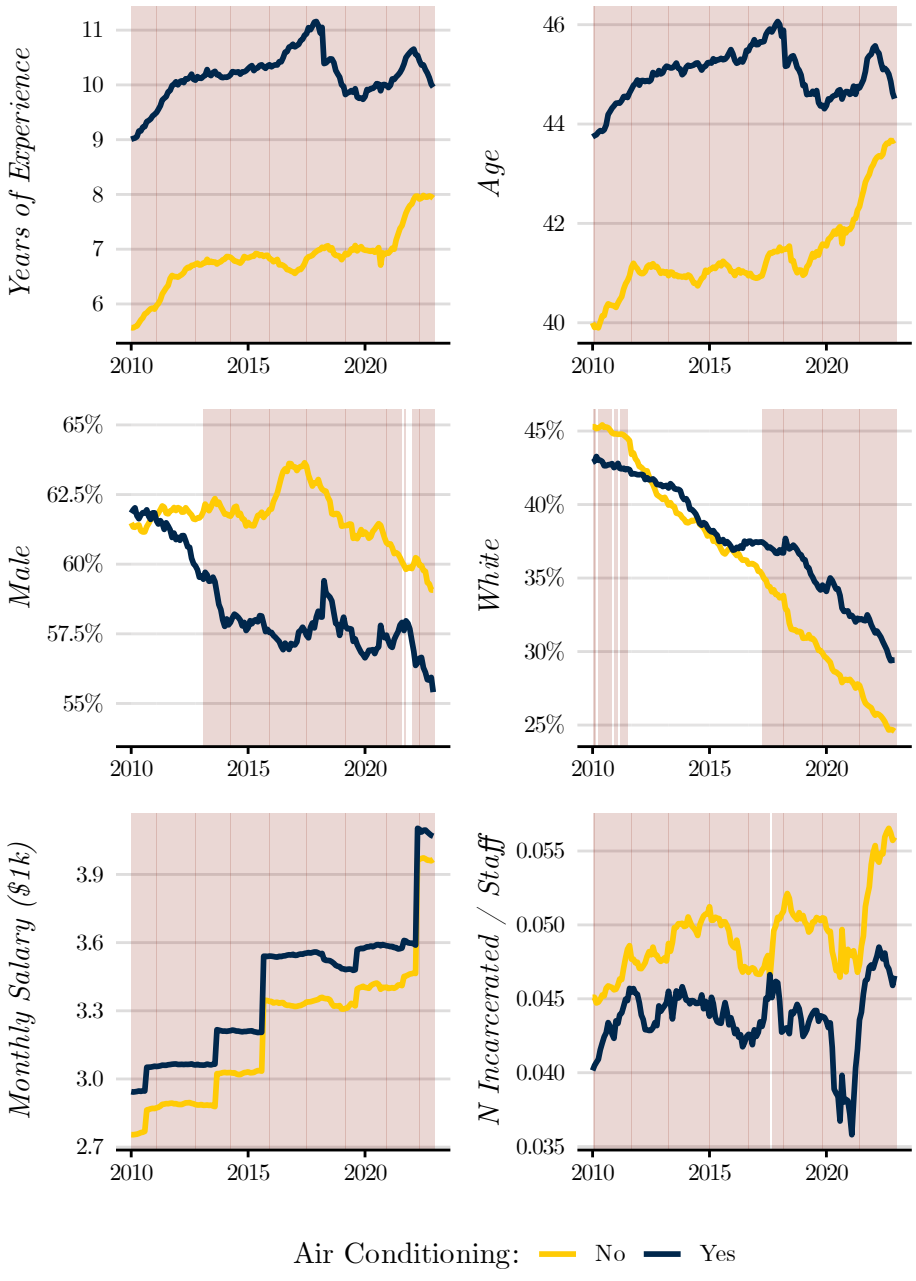


The resulting dataset includes 40,335 distinct employees and 1,538,887 employee-month

observations across forty-one facilities with either full or no air conditioning (Figure 4.1). Air-conditioned facilities are smaller and more evenly distributed across the state than prisons without air conditioning, which are concentrated in the eastern part of the state. Employees in these facilities differ on other dimensions as well. Figure 4.2 shows descriptive characteristics of TDCJ correctional staff over the course of our study period. Monthly group means for employees in facilities with and without air conditioning are shown in blue and yellow, respectively, while red highlighting indicates that the null hypothesis of no difference in means is rejected using a two-sided t-test ($p<.05$).

Employees in facilities without air conditioning are significantly younger with fewer years of experience and lower earnings than their peers in air-conditioned facilities. The demographic composition of correctional employees also changed considerably over the study period. In 2010, over 40% of correctional employees were white. By 2023, only 30% of correctional employees in prisons with air conditioning were white and an even smaller share of employees in prisons lacking air conditioning were white. The Texas correctional workforce also became comprised of more females over the study period, with the share of female correctional employees across all prisons increasing from 38% to 42%. Finally, incarcerated-person-to-staff ratios are also higher in facilities without air conditioning, underscoring both the difficulty of staffing these positions and the difficult conditions faced by remaining employees.

Figure 4.2 – Correctional Staff Differ Across Prisons With and Without AC
Shows the mean years of experience, age, monthly salary, share male, share white, and incarcerated person/staff ratio in TDCJ facilities with and without air conditioning by month. Data includes both frontline and supervisory staff. Time periods are highlighted in red if the null hypothesis of no difference in means is rejected using a two-sided t-test ($p<.05$).



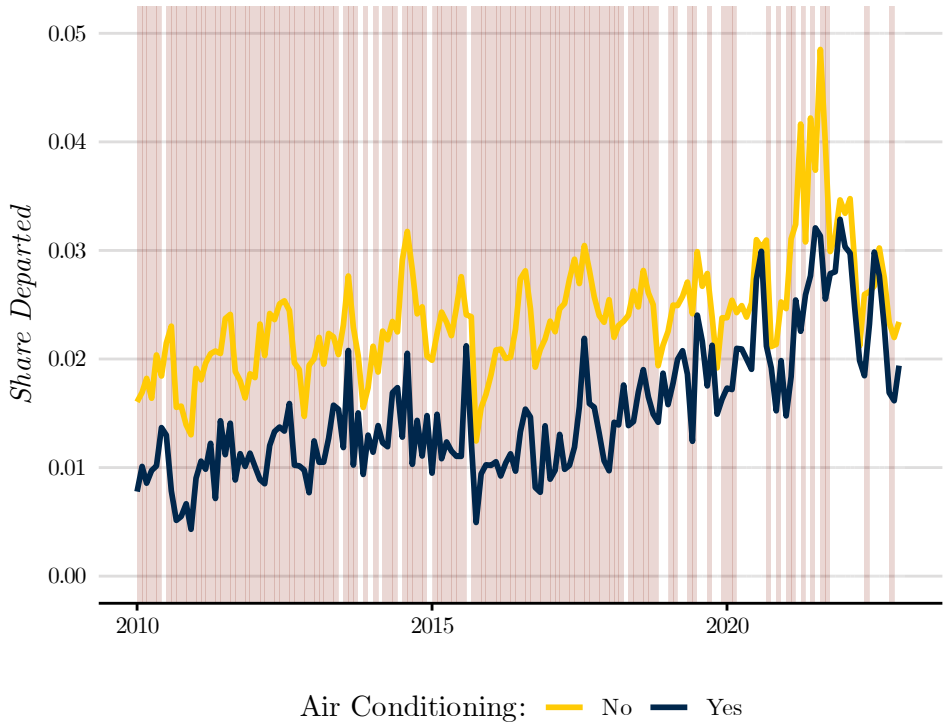
Our main outcome of interest is whether an employee departs the TDCJ workforce in a given month, which we define as the last month of observed continuous employment. It encompasses both instances where an employee leaves the TDCJ workforce and does not return during our study period as well as cases of an employee leaving before later returning to correctional work.[6] Figure 4.3 shows the share of TDCJ correctional employees that depart each month from prisons with and without air conditioning. The figure highlights a few key trends. First, up to the onset of the COVID-19 pandemic, departures were more common in prisons without air conditioning. Second, departures from prisons with air conditioning began to increase around 2017. As a result, by the time the COVID-19 pandemic began, the difference in departures rates from prisons with and without air conditioning had considerably narrowed. Finally, employee departures from both types of prisons spike following the onset of the pandemic in March 2020. Departure rates peak in summer and fall of 2021 and by the beginning of 2022 are largely similar across both types of prisons.

Methods

We present our main findings regarding the relationship between working in a prison without air conditioning and departing using a selection on observables approach. The dependent variable is whether an employee departs the TDCJ workforce in a given month, while the independent variable is a binary indicator for whether an employee works at a prison without air conditioning. We control for a series of confounders. At the individual-level, we control for employees' race, age, squared age, monthly salary, and sex. We also control for facility-level factors that are likely to correlate with both departing and air-conditioning status, such as the monthly unemployment rate of the county containing the prison, the percent change in the number of correctional employees working at the prison from the prior month, the year the facility was built, and the number of incarcerated people in the facility in a given month. We include monthly fixed effects to pick up on state-wide trends, such as the four

6. We do not know why someone leaves the workforce, only that they depart our dataset.

Figure 4.3 – Correctional employees in Prisons Without AC More Likely to Depart Shows the share of correctional employees that depart from prisons with and without air conditioning each month. Data includes both frontline and supervisory staff. Time periods are highlighted in red if the null hypothesis of no difference in means is rejected using a two-sided t test (p<.05).



salary raises shown in Figure 4.2, and fixed effects for years of experience working with the TDCJ. Since air conditioning coverage rarely changes over our study period, we are not able to utilize facility-level fixed effects. Our estimates are instead pooled across facilities with and without air conditioning, respectively. Finally, we also account for outside temperature. We measure temperature as the average monthly temperature (in Fahrenheit) of the county containing a prison .[7] Following other researchers (Mukherjee and Sanders 2021; Deschênes and Greenstone 2011; Barreca et al. 2016; Heutel, Miller, and Molitor 2021), we bin average temperature readings to pick up on nonlinear trends. In particular, we create five bins by degrees: less than 60F, 60-69F, 70-79F, and 80F or higher.[8] We estimate the model using

7. Figure C.1 shows the seasonal fluctuations in temperatures for counties containing prisons with and without air conditioning.

8. Figure C.2 in the Supplementary Information shows the distribution of our binned temperature variable.

logistic regression with standard errors clustered at the employee level.

The main model provides an estimate of the correlation between air conditioning status and departing. It is not a causal estimate of the effect of excessive heat on turnover. Air conditioning is not randomly installed in TDCJ prisons. Older, larger prisons are less likely to have air conditioning and employees in both types of prisons differ on dimensions, such as years of experience and age, that likely influence the likelihood of departing. While our approach is able to control for some of these confounders, unobserved factors may still introduce bias. We account for this issue by extending our main model in two different ways. First, we test for a relationship between heat and air conditioning among subgroups of the correctional workforce—frontline officers and new employees—where effects are likely to be more pronounced. We test for a difference in turnover rates across supervisory status by running the main model separately for frontline officers and supervisors. Extending the model to account for employees' experience working in hot conditions requires interacting our main independent variable with employees' years of experience. Due to likely nonlinearities, we opt to measure years of experience as a categorical variable.

Second, we test whether working in a prison without air conditioning has a greater impact in the summer months. This is a conservative test of our expectations. Heat, according to this approach, matters most when it is hot out. Departures in anticipation of summer or in reaction to a particularly brutal stretch of hot weather are not picked up. Yet, it does provide a more causally-identified estimate of the effect of heat on departing. Unobserved confounders now need to correlate with not only departing and prisons' air conditioning coverage, but also seasonal fluctuations in temperature. We test for a moderating effect of heat by interacting our binned temperature variable with the binary indicator for whether an employee works in a prison without air conditioning. The result is a model that not only estimates how departure propensities vary by season, but also how heat mitigation moderates that relationship.[9]

9. In order to pick up on seasonal temperature fluctuations while also picking up on state-level changes in departures, we substitute annual fixed effects for the monthly fixed effects used in the main model.

Results

Table 4.1 shows the results of our main model examining the overall association between working in a prison without air conditioning and departing. The data is subsetted to only frontline correctional officers and, due to the significant changes to the correctional system brought about by the COVID-19 pandemic, we estimate separate models for before and after March 2020. We present the coefficients and corresponding 95% confidence intervals on the odds ratio scale to ease interpretation.[10]

Given the lack of large-N studies on correctional officer turnover, it is worthwhile examining the coefficients on the control variables in Table 4.1. As suggested by the descriptive trends in Figure 4.3, the demographics of correctional officers in Texas changed considerably over our study period. The odds of white correctional officers exiting the workforce in a given month were 26% higher than for employees of other racial backgrounds, increasing to 35% after the onset of the pandemic. Male employees were also less likely to depart than their female peers. Both before and after the onset of COVID-19, higher-earning employees were less likely to depart. The results also highlight the role of staffing issues in contributing to additional departures. Before the onset of COVID-19, a 1 percentage point decrease in the number of prison employees from the prior month correlates with approximately a 1% increase in the likelihood of departing. Departures are also more common from prisons that house more incarcerated individuals, underscoring the difficult conditions within many of the larger prisons operated by the TDCJ.

Before COVID-19, the odds of employees in prisons without air conditioning departing were, on average, 21% higher than for their peers in air-conditioned facilities. The magnitude of this correlation is relatively large. For example, it roughly corresponds to the size of the association between departing and a $1,000 decrease in monthly earnings.[11] However,

10. Table C.2 shows the results of models estimated using observations pooled from both before and during the pandemic.

11. Mean monthly earnings over the study period are $3,140, so a $1,000 decrease roughly equates to a 32% salary cut.

the result not only disappears but actually reverses following the onset of the pandemic. From March 2020 through January 2023, the odds of employees in facilities without air conditioning departing were 8% lower, relative to correctional officers in prisons with air conditioning. During the pandemic, correctional workers in hotter facilities were actually less likely to exit the TDCJ workforce than their peers in air-conditioned facilities.

Table 4.1 – Correctional Officers More Likely to Depart Prisons Without AC Pre-COVID Tests whether air conditioning correlates with increased departures before and after, respectively, the onset of the COVID-19 pandemic. the beginning of the COVID-19 pandemic. Coefficients displayed as odds ratios with 95% confidence intervals in parentheses.

	Pre-COVID	COVID
No AC	1.21*	0.92*
	[1.15; 1.28]	[0.85; 0.99]
60-69F	1.03	0.95
	[0.95; 1.13]	[0.82; 1.11]
70-79F	1.14*	0.90
	[1.01; 1.30]	[0.73; 1.11]
>=80F	1.21*	0.87
	[1.03; 1.42]	[0.68; 1.13]
Unemployment Rate	0.98*	1.02
	[0.97; 1.00]	[0.99; 1.04]
White	1.26*	1.35*
	[1.23; 1.30]	[1.27; 1.42]
Monthly Salary ($1k)	0.77*	0.73*
	[0.74; 0.80]	[0.69; 0.76]
Age	0.91*	0.93*
	[0.90; 0.91]	[0.92; 0.94]
Age^2	1.00*	1.00*
	[1.00; 1.00]	[1.00; 1.00]
Male	0.86*	0.93*
	[0.83; 0.88]	[0.88; 0.98]
Pct staffing change	0.99*	1.00
	[0.99; 1.00]	[1.00; 1.00]
Year built	1.00	1.00
	[1.00; 1.00]	[1.00; 1.00]
N incarcerated (100)	1.01*	1.01*
	[1.00; 1.01]	[1.01; 1.02]
Tenure FE	✓	✓
Month FE	✓	✓

* Null hypothesis value outside the confidence interval.

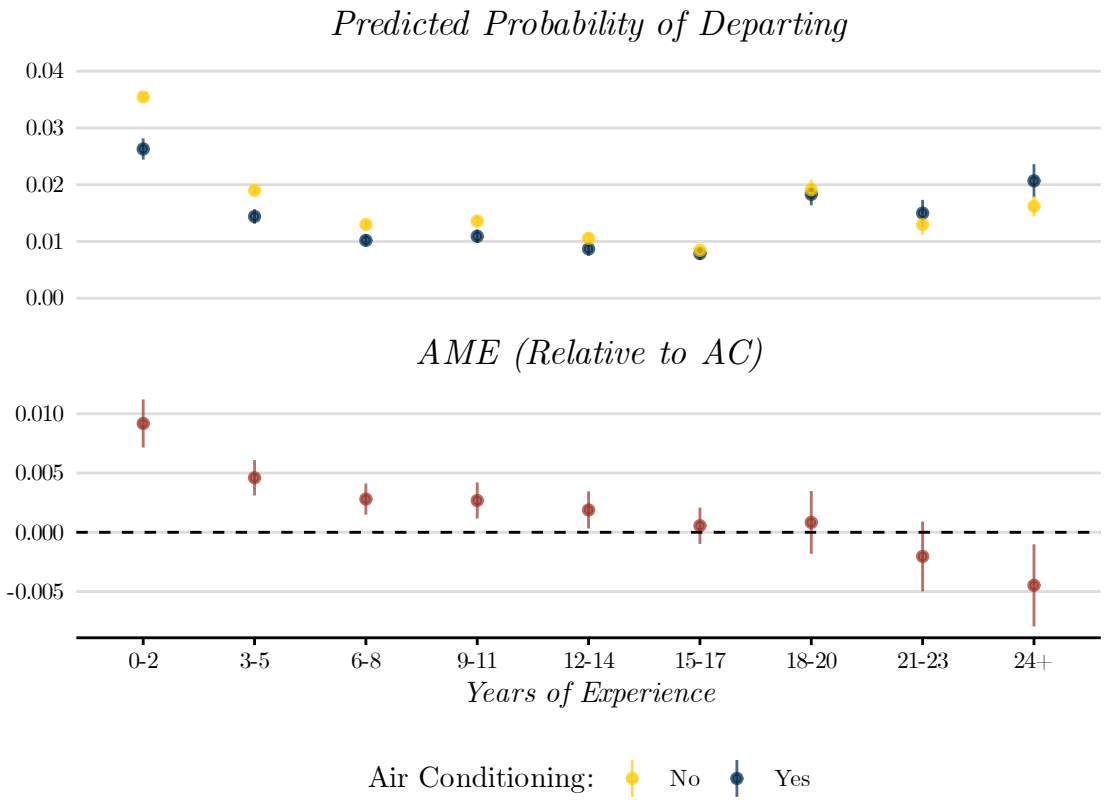
The coefficients on working in a facility without air conditioning in Table 4.1 are associations. Nevertheless, subgroup analyses can help add some additional rigor to our findings. In the Supplementary Information, we re-estimate our main models using only supervisors, rather than frontline staff. Since administrative areas in TDCJ prisons are cooled, regardless of whether the rest of the prison has air conditioning, we expect to see no relationship between working in a prison without air conditioning and supervisors' probability of departing. This is exactly what we find. Before the pandemic, the odds of departing are only 5% higher, and not statistically significant, for supervisors in prisons without air conditioning, compared to their peers in cooler facilities. The senior employees who spend less time in excessively hot prison areas are likewise less likely to depart due to their prisons' lack of air conditioning.

We also expect that our main result in Table 4.1 is driven by less-experienced employees. We test this by re-estimating our main model to include an interaction between employees' years of experience and the binary indicator for whether an employee works in a prison without air conditioning. We show the results of this test in Figure 4.4. The top facet shows the estimated probability of departing for frontline correctional officers in prisons with and without air conditioning by years of experience with the TDCJ. Rather than setting control variables to their means or modes, we compute the predicted probabilities using an an observed-value approach (Hanmer and Ozan Kalkan 2013). That is, we estimate the predicted probability of departing for every employee with the binary air conditioning variable set to each of its respective values and the other controls set to their observed values. Means and standard errors are then calculated conditional on employees' observed years of experience and prisons' air conditioning statuses.

The results from the top facet highlight two key trends. First, departures from both types of prisons are highest among the least experienced employees. The predicted probabilities of departing peak among employees with two or fewer years of experience and then steadily decrease before increasing again when correctional officers are eligible to receive a lifetime

annuity from the Law Enforcement and Custodial Officer Supplemental Retirement Fund at 20 years of service. Second, the difference in the predicted probability of departing among employees with and without air conditioning is initially high and then decreases. The bottom facet of Figure 4.4 emphasizes this trend, plotting the average marginal effects (AME) of working in a prison without air conditioning within each experience category. Among the least experienced employees, working in a prison without air conditioning is associated with a 0.9 percentage point increase in the predicted probability of departing. Considering that the predicted probability of departing in a given month among these employees hovers around 3% across prison types, this is a substantively large difference. Notably, the increased likelihood of departing declines with experience, reaching zero among employees with around 15-17 years of experience before actually reversing among the most experienced employees.

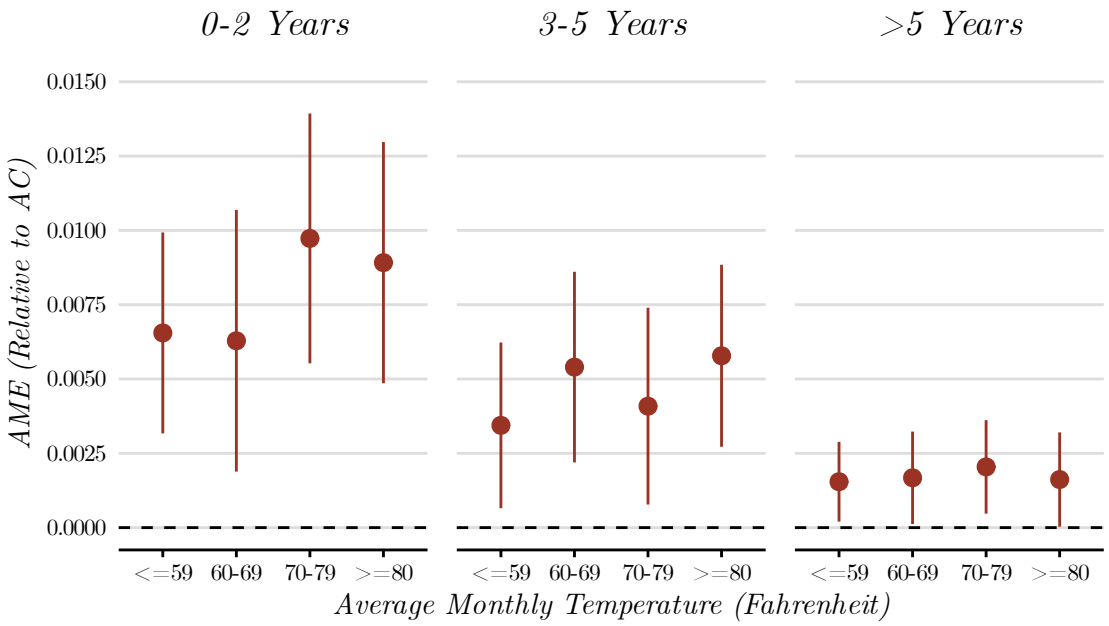
Figure 4.4 – Air Conditioning Leads to More Departures Among the Least Experienced. The top facet shows the predicted probability of frontline correctional officers departing in a given month before the onset of COVID-19 by years of experience and air-conditioning status. The bottom facet shows the average marginal effect of working in a prison without air conditioning on the probability of departing by years of experience. Results calculated using `marginaleffects` `R` package using control variables set to their observed values. Figure C.7 shows the results for months after March 2020.



Preceding results capture the relationship between heat and air conditioning throughout the year. Interacting our binned temperature variable with the binary indicator for air conditioning allows for examining whether that relationship varies over the course of the year. We estimate this model separately for employees with different levels of experience (0-2, 3-5, and >5 years) and report the results as average marginal effects in Figure 4.5. Each point shows, among employees with a certain experience level and at a certain temperature range, how working in a prison without air conditioning influences departing. For instance, among employees with two or fewer years of experience, working in prison without air conditioning is

associated with an approximately 0.65 percentage point increase in the predicted probability of departing when temperatures are in the 50s or lower.

Figure 4.5 – Less-Experienced Employees in Prisons Without Air Conditioning Slightly More Likely to Depart in Hotter Months Shows the average marginal effect of working in a prison without air conditioning before COVID-19 by average monthly temperature. Results calculated using separate models that restrict the data to employees with 0-2, 3-5, and more than five years of experience. Results calculated using `marginaleffects R` package using control variables set to their observed values. Figure C.6 shows the results for months after March 2020.



Of particular interest is the rate by which the AME increases as temperatures rise. Among the least experienced employees, the AME increases as the average monthly temperature rises.[12] A similar trend occurs among employees with 3-5 years of experience. While the rate of change of the difference is not statistically significant in either case, it is clear from the far-right facet that the trend is isolated to the least experienced employees. Among employees with more than five years of experience, the AME is much less responsive to temperature. Once again, this finding is consistent with the most experienced employees being relatively more acclimated to working in extreme heat compared to their newer peers.[13]

12. Figure C.6 shows that this trend does not hold during COVID-19.
13. We show similar results in Figure C.4, which shows the AME relative to the lowest temperature bin

Discussion

Reformers have long framed the lack of air conditioning in many U.S. prisons as a moral and constitutional issue. We argue that it also matters for worker safety and retention. Using personnel and air conditioning data from the largest state prison system in the U.S., we show that a substantively and statistically significant association exists between working in a Texas prison without air conditioning and departing the correctional workforce. Before the onset of COVID-19, the odds of frontline correctional officers departing the TDCJ workforce in a given month were 21% higher if they worked in a prison lacking air conditioning. The lack of random assignment of air conditioning and minimal within-prison changes in air conditioning coverage within our study window limits our ability to be precise about the degree to which this association is causal. However, additional tests support our expectation that heat is driving our results. For one, we show that the correlation between working in a prison without air conditioning and departing is isolated to the frontline employees who spend time in the excessively hot parts of TDCJ facilities. Likewise, we also show that our main finding is isolated to the newest frontline employees who are the least likely to be acclimated to the extreme heat within many TDCJ prisons.

Other tests add some wrinkles to our main results. We provide some weak evidence that working in a prison without air conditioning is associated with more departures in the summer months. Albeit lacking statistical significance, we show that, among the least experienced employees, the influence of air conditioning increases during the summer months. Notably, there is no similar trend among more experienced employees who have worked for the TDCJ for more than five years. It is important to keep in mind that uncovering a direct relationship between heat and departing is a conservative test of our overall hypothesis. Heat can influence departures throughout the year, and we suggest that, at least among the least-acclimated employees, it might matter slightly more during the summer when it is salient.

($<$ 60F) by air conditioning status.

Nevertheless, we also find that many of the above findings disappear following the onset of the COVID-19 pandemic. In addition to the overall association between air conditioning and departing reversing, subgroup analyses also suggest no relationship between excessive heat and departing following the pandemic. There are a few possible reasons for this. The pandemic brought unprecedented challenges to prisons, many of which were particularly affected by the virus. As a result, new unobserved confounders that are difficult to control for may be biasing our results and masking an underlying relationship between air conditioning and departing. While possible, two other scenarios seem more likely. For one, it may be the case that the challenges of the pandemic simply drowned out the benefits of air conditioning. Increasingly dangerous conditions due to the virus and heightened understaffing drove departures following the pandemic, rather than excessive heat. Another possibility is that COVID-19 is not actually the cause of the changes in our results over time. Figure 4.3 suggests that departures from prisons with air conditioning began to steadily increase in 2017. It is challenging to pinpoint the source of this increase, but it may be that what appears to be a change due to the pandemic actually stems from a prior, alternative cause.

Our work has a few key limitations, which should be improved upon in future work. First, while our longitudinal study is an improvement upon existing research, we are limited by a lack of variation in air-conditioning status during the study period. Second, exiting the workforce is one, particularly extreme, measure that correctional workers can take in the wake of poor conditions. They can also take vacation days or be forced to work additional overtime shifts to cover vacancies. Future work should incorporate these other dependent variables. Finally, while Texas is a particularly salient case for studying the relationship between heat and correctional officer turnover, correctional officers in other states might be even more responsive to heat. Climate change is increasing the number of hot summer days across the country in places where people are less used to excessive heat (Tuholske et al. 2024). As a result, correctional officers in the Pacific Northwest, Midwest, and New England may be even more impacted by working in facilities without air conditioning than

their peers in the South.

Finally, our results also underscore the other considerable challenges faced by correctional officers. Despite its benefits, air conditioning cannot alleviate the violence, stress, and trauma that make correctional work particularly taxing. While cooler prisons help both incarcerated people and correctional staff, air-conditioning does not address the underlying pathologies of prisons and thus offers, at best, only partial relief from the structural conditions that drive burnout, turnover, and chronic understaffing.

CHAPTER 5

Conclusion

Many public employees are facing a tenuous future. Tens of thousands of federal employees, many of whom enjoyed some tenure protections, have lost their jobs in the first few months of the second Trump administration amidst a widespread government downsizing initiative. Other employees viewed as particularly supportive of the prior administration or certain policy goals (i.e., Diversity, Equity, and Inclusion) have also been terminated. While issues of government staffing and personnel rarely make front page news, recent changes have mobilized public attention. In the last week of January 2025, Google searches including the phrase "civil servant" increased by 160% relative to the same period one year earlier and 222% compared to the first week of the Biden administration.

Recent cuts to the federal workforce have underscored the need for additional research into how executives manage workforces in the wake of civil service rollbacks and the consequences of public sector turnover. Across three papers, I have used new U.S. state employee personnel data to examine both the effects of civil service reforms that walk back employees' tenure protections and the impacts of workplace conditions on employees' willingness to remain in the public sector. The first two papers focus on the case of civil service rollbacks—which, although a recent phenomenon at the federal level, have occurred in the states for decades. I show in the first paper that major scandals and policy failures can prompt dismissals from the workforce. Using data from Mississippi, I demonstrate that executives in the state used civil service rollbacks to "clean house," removing large swaths of indicted agencies'

employees. The employees who lost their jobs, however, were not political opponents of the administration but rather longer-serving employees, suggesting that protections were weakened to remove employees perceived to be particularly associated with the operations of the failing agency.

I build on these findings from Mississippi in the second paper, where I focus on the case of the 2001 Service First reforms in Florida. I demonstrate that, although affected employees were more likely to exit approximately 18 months after reform, there is no evidence of a sharp increase in departures immediately following the rollback of protections. I also do not find that more influential employees in politically distal or fiscally constrained agencies were more likely to depart. However, I do show that the 2001 rollbacks facilitated strategic workforce reorganizations in later years. Employees who lost their protections under Service First were approximately five times more likely to depart from the state Department of Education—an agency central to Governor Jeb Bush's policy agenda——in December 2002, one month before the governor gained control of the agency via a cabinet reorganization.

The findings from Mississippi and Florida have implications for the study of state and bureaucratic politics, as well as for ongoing policy debates regarding civil service reform. Despite both states being under Republican control and, as I show in the first paper, the ubiquity of Democrats in southern states' workforces, I do not find any evidence of partisan or ideological disagreement leading to increased departures. This stands in contrast to research on turnover among federal employees. Explaining the lack of conflict along partisan and ideological dimensions in state agencies is outside the scope of these papers, but it is worthwhile sketching out what I think is one particularly likely reason. Much like federal agencies, much of what state agencies do is not particularly ideological. There is not a liberal or conservative way to deliver benefits or process Real IDs. Yet, even more so than their federal counterparts, state agencies operate out of the public eye. State lawmakers or even the governor may raise issues with departments from time to time, but it is difficult for these critiques to break through to the mass public. As a result, state agencies not only

often lack an ideological or partisan slant to their work, but they do their jobs relatively insulated from the hyper-polarized media landscape of contemporary politics. This has a few implications. For one, it probably means that many employees, regardless of their personal policy views, do not view their jobs as all that political. Democrats are willing to work for Republican administrations and vice versa. In addition, it also implies that, while governors and executives may disagree with agencies over budgets and policy, those disagreements often fall along dimensions other than partisanship or ideology. Future work should subject this story, and other possible hypotheses, to empirical examination.

On the one hand, the lack of political targeting in the wake of civil service rollbacks fits with the arguments of many critics of civil service protections. Governors and agency heads in Florida and Mississippi did not use the rollback of protections to kick out ideological opponents or reintroduce partisan spoils to state workforces. Instead they removed poorly-performing employees (in Mississippi) and workers in influential, salient positions (in Florida). The former result is normatively encouraging, but the latter hints at possible issues with reform. Most civil service reforms—as underscored by the cases from Mississippi and Florida—have occurred under one-party rule with little apparent ideological or partisan conflict between bureaucratic agents and their elected principals. In other cases where polarization is higher (the federal bureaucracy being the most obvious example), the effects of removing tenure protections will likely be more noticeable and harmful. Despite the lack of apparent conflict in Mississippi and Florida, I do still pick up on instances of the governor and political appointees strategically removing certain types of workers to increase control over important portions of the bureaucracy. As conflict increases, executives will likely be incentivized to target larger swaths of the workforce for removal, with numerous harmful potential effects on capacity, expertise, and performance.

These papers do not touch on the downstream impacts of civil service rollbacks on other important outcomes, like hiring patterns and policy outcomes. I focus on departures, but the formal literature on tenure protections suggests that making it easier to terminate public em-

ployees should also affect which types of individuals are willing to opt into government work. Future work should examine whether this holds empirically. I also leave the performance and policy impacts of walking back protections to future work. A growing literature has shown the largely positive benefits of introducing merit-based civil service protections on employee and agency performance, but most of these studies use data from the late 19th century. We need more research into whether the inverse holds in contemporary political settings. These unknowns regarding performance and hiring should be considered in discussions of the costs and benefits of walking back civil service protections. Despite my contributions here, there are still uncertainties regarding the effects of civil service rollbacks.

Of course, public sector turnover is a function of much more than employees' protections and conflict with principals. In the third paper, along with my co-author Jacob Harris, I examine how employees' working conditions affect their likelihood of departing. Relative to the first two papers, this final paper switches not only the independent variable but also the population. The rollback of civil service protections largely impacts higher-level employees who make policy, budgetary, and regulatory decisions. In contrast, poor working conditions are more likely to be salient for lower-level street-level bureaucrats tasked with delivering government services and benefits. Underlining this distinction, we focus on the particularly salient case of of the role of excessive heat in moderating departures among correctional officers. Using personnel records of correctional officers in Texas's state prison system, we show that correctional officers in prisons without air conditioning are more likely to leave their jobs.

Our findings from Texas contribute to multiple literatures. For one, we offer some of the most detailed, rigorous evidence yet of the correlates of correctional officer turnover. Most research on this topic has used relatively small surveys of correctional officers to examine the psychological factors associated with departing. We demonstrate that researchers should continue to dig deeper into the structural causes of high turnover in American prisons. Stress and burnout arise from measurable features of workplace environments, like the lack of air

conditioning, that deserve further attention. Our study also speaks to the growing literature on the negative effects of heat, both within and outside of prisons. While correctional officers are not as affected by rising temperatures as incarcerated people, excessive heat makes their jobs more difficult and contributes to turnover.

Our results from Texas also have implications for policy and advocacy. We are far from the first to show that American prisons are dangerous, inhospitable places. Incarcerated people and their allies have long argued that U.S. prisons are inhumane and have been on the forefront of reform efforts. Our findings, however, suggest that reformers should consider both alternative arguments and additional allies. Temperature-controlled prisons are not only a moral or constitutional issue. Given our findings, air conditioning can likely help correctional agencies contend with significant recruitment and retention issues. Likewise, despite their differences, our results also suggest that incarcerated people and correctional officers can agree on the importance of improving prison conditions. Prison reformers and correctional officer unions should consider how to join forces to push for improved conditions within American prisons.

Finally, this dissertation poses other big questions for future research. Much of the literature on bureaucracy in the United States is forged with the federal bureaucracy in mind where political competition is high. Elections bring new partisan principals every four or eight years — a fact that political appointees and career employees are well aware of. But at the state level, one-party rule is increasingly the norm. The lack of partisan competition over state executive offices and legislative seats likely has implications for bureaucratic behavior and outputs that deserve further attention. Scholars might look to cases and literatures from outside of the United States where one-party rule is more frequent for inspiration. In addition, my findings throughout this paper also pose interesting avenues for future research regarding the geographical location of employees. The variation in the location of state employees within states and across the country opens up interesting questions about how the location of jobs affects who opts into government work. Lastly, I hope this project spurs

more research into the turnover of street-level bureaucrats, especially correctional officers. More research should examine why these employees opt into and out of their positions, and how governments can best invest in improving their experiences on the job.

APPENDIX A

Partisan Departures from the Administrative States

A.1 Merge Procedure and Diagnostics

This section provides details on how I matched state bureaucrats to their corresponding voter registration information, as well as additional diagnostics about the merges. Important methodological advancements have occurred in recent years regarding data merging. Notably, Enamorado, Fifield, and Imai (2019) introduced the open-source `R` package `fastLink` for conducting probabilistic merges. I opted to not use `fastLink` for a few reasons. First, my project requires conducting many distinct merges with different sets of available key variables. As a result, since `fastLink` is probabilistic, it might return different types of matches across the states. For instance, in Arkansas, an employee might match to a voter with a non-matching middle initial, which would not occur in Alaska using the same probability threshold to define a true match. Second, although `fastLink` is considerably faster than other probabilistic approaches, it still takes significant computational resources. This problem is magnified in my case, as I need to run twenty different merges.

As a result, I opted to instead use my own algorithm to match state bureaucrats to voters. I walk through the algorithm below.

A.1.1 Merge Algorithm

1. Match the state personnel file to the voter file of the given state and neighboring states. (With the exception of the Mississippi employee merge, all merges use voter files that are point-in-time snapshots from late 2020 and early 2021. The Mississippi merge incorporates additional snapshots from earlier periods in time. See Table A.6 for more information about timing of the voter file snapshots for Mississippi and neighboring states.)

2. Filter the voter registration file to only include voters living in the given state or within 50km of the state border.

3. For each state employee, find all voters where the Jaro-Winkler string distance between both the first and last names is less than .025.[1]

4. Post-process the potential matches using the additional key variables available in the state (See Table A.1). If the key variable is available, remove any voters matched to a state employee who have:

   (a) A different, non-missing middle initial

   (b) A different race (unless the employee is only matched to one voter)

   (c) A different gender (unless the employee is only matched to one voter)

   (d) A birth date that is $+/-$ 1 year from the state employee's birth date

   (e) A date of birth that is more than 70 years from the last date I observe the state employee (unless the employee is only matched to one voter)

   (f) A date of birth that is more than 80 years from the last date I observe the state employee

   (g) A date of birth that is less than 18 years from the state employee's hire date

1. To speed up the merges, I blocked the employee and voter files on the concatenation of the first character of the first and last names.

(h) A residential address that is not in the same county or an adjacent county as the state employee's county of employment

5. Since more than one voter can still be matched to a given state employee, calculate the mean probability that each employee is a registered Republican, Democrat, non-partisan, and member of another party. For instance, if an employee is matched to a Republican voter and Democratic voter, they would be assigned to be a Republican with a probability of 0.5, a Democrat with a probability of 0.5, non-partisan with a probability of 0, and of another party with a probability of 0. If an employee is matched to one voter or more than one voter who all share the same partisan affiliation, their partisanship is set to 1 for the given partisanship category. See Tables A.3 and A.4 for more information about the number of one-to-one and one-to-one partisan affiliation matches by state.

A.1.2 Merge Diagnostics

Table A.1 – Personnel Data Details Shows the timespan, frequency, and available variables in each state's personnel data.

			Key Variables Used in Post-Processing:						
State	*Period*	*Freq.*	*Sex*	*Race*	*M. Initial*	*Age*	*Hire Date*	*County*	*Class.*
AK	2017-2021	Quarter			✓				
AR	2013-2022	Month	✓	✓	✓				
CO	2019-2022	Month			✓		✓	✓	✓
FL	2010-2022	Month	✓	✓			✓		✓
IA	2017-2021	Year	✓		✓			✓	
ID	2012-2022	Month			✓		✓		✓
LA	2019-2022	Month	✓	✓			✓	✓	✓
MA	2019-2022	Month			✓			✓	✓
MD	2018-2022	Quarter			✓		✓	✓	
ME	2010-2021	Year			✓				
MI	2016-2022	Twice-Year			✓		✓	✓	
MN	2011-2021	Year			✓		✓	✓	✓
MS	2010-2022	Month	✓	✓	✓		✓	✓	✓
MT	2019-2021	Year			✓			✓	
ND	2010-2022	Year					✓		✓
NH	2019-2022	Year					✓		
NV	2010-2021	Year			✓				✓
SC	2019-2022	Month	✓	✓	✓	✓		✓	✓
TX	2019-2022	Month	✓	✓	✓		✓		
VT	2009-2021	Year			✓				✓
WA	2019-2022	Quarter			✓		✓	✓	✓
WI	2009-2021	Year			✓		✓	✓	✓
WV	2018-2022	Month			✓		✓		
WY	2019-2021	Year						✓	

Table A.2 – **Match Rates** Shows the share of state employees and employee-period observations successfully matched to at least one voter by state. For the employee-level measures, A bureaucrat in Mississippi is counted as being matched if they are matched to a voter at least once.

	Employees			*Period-Employees*		
State	*N Matches*	*N*	*Share Matched*	*N Matches*	*N*	*Share Matched*
AK	22,739	27,589	0.82	232,699	263,839	0.88
AR	51,099	71,889	0.71	2,204,486	2,844,295	0.78
CO	51,292	65,794	0.78	1,313,597	1,600,375	0.82
FL	208,147	333,965	0.62	10,708,817	13,875,569	0.77
IA	77,228	103,448	0.75	245,801	304,381	0.81
ID	31,987	46,141	0.69	1,566,999	2,007,500	0.78
LA	102,633	143,660	0.71	1,127,131	1,532,538	0.74
MA	46,410	55,956	0.83	1,548,109	1,829,285	0.85
MD	55,585	70,863	0.78	714,396	889,514	0.80
ME	22,963	30,440	0.75	125,334	152,514	0.82
MI	50,497	60,429	0.84	413,267	467,879	0.88
MN	97,008	139,648	0.69	487,197	706,331	0.69
MS	43,436	60,029	0.72	2,174,849	3,245,938	0.67
MT	16,276	21,668	0.75	38,620	49,212	0.78
ND	15,143	21,382	0.71	88,901	111,529	0.80
NH	16,182	19,339	0.84	46,597	54,358	0.86
NV	34,066	48,647	0.70	176,762	234,456	0.75
SC	72,530	94,902	0.76	1,830,162	2,309,601	0.79
TX	182,585	244,400	0.75	5,024,640	6,450,631	0.78
VT	19,920	27,788	0.72	116,330	148,650	0.78
WA	71,621	88,586	0.81	772,934	918,179	0.84
WI	82,162	114,323	0.72	407,507	507,692	0.80
WV	51,330	66,405	0.77	1,450,444	1,764,987	0.82
WY	8,977	13,236	0.68	22,005	30,707	0.72
Total	*1,431,816*	*1,970,527*	*0.73*	*32,837,584*	*42,299,960*	*0.78*

Table A.3 – Share of State Employees Matched to N Voters Among state employees matched to at least one voter, shows the share of state employees who were matched to 1, 2, 5, and 10 voters. Values rounded to the hundredth decimal place.

	Share of State Employees Matched to:			
State	*1 Voter*	*2 Voters*	*5 Voters*	*10 Voters*
AK	0.96	0.03	0	0
AR	0.8	0.08	0.01	0
CO	0.88	0.07	0.01	0
FL	0.52	0.1	0.03	0.01
IA	0.92	0.06	0	0
ID	0.87	0.07	0.01	0
LA	0.85	0.09	0.01	0
MA	0.75	0.13	0.01	0
MD	0.86	0.09	0.01	0
ME	0.83	0.09	0.01	0
MI	0.79	0.15	0.01	0
MN	0.86	0.08	0	0
MS	0.9	0.07	0	0
MT	0.97	0.03	0	0
ND	0.81	0.09	0.01	0
NH	0.81	0.09	0.01	0
NV	0.85	0.07	0.01	0
SC	0.95	0.04	0	0
TX	0.62	0.11	0.02	0.01
VT	0.85	0.08	0.01	0
WA	0.88	0.08	0	0
WI	0.87	0.08	0	0
WV	0.74	0.11	0.02	0
WY	0.84	0.11	0.01	0

Table A.4 – Share of State Employees Matched to N Partisan Affiliations Among state employees matched to at least one voter, shows the share of state employees who were matched to 1, 2, and 3 different partisan affiliations. Values rounded to the hundredth decimal place.

	Share of State Employees Matched to:		
State	*1 Partisan Affiliation*	*2 Partisan Affiliations*	*3 Partisan Affiliations*
AK	0.97	0.02	0
AR	0.84	0.1	0.05
CO	0.93	0.05	0.02
FL	0.6	0.15	0.16
IA	0.96	0.03	0.01
ID	0.9	0.07	0.03
LA	0.91	0.07	0.02
MA	0.85	0.1	0.04
MD	0.94	0.04	0.01
ME	0.86	0.09	0.04
MI	0.94	0.05	0.02
MN	0.93	0.05	0.03
MS	0.96	0.04	0
MT	0.98	0.01	0
ND	0.85	0.1	0.05
NH	0.85	0.11	0.04
NV	0.88	0.07	0.03
SC	0.99	0.01	0
TX	0.76	0.12	0.12
VT	0.88	0.08	0.03
WA	0.94	0.04	0.02
WI	0.93	0.05	0.02
WV	0.79	0.13	0.07
WY	0.92	0.06	0.02

Table A.5 – Voter Registration and Partisan Modeling Describes how voter-level partisanship is calculated for each state in the L2 data. Unless otherwise noted, partisanship is modeled using "a great many public and private data sources including demographics available through the voter file, exit polling from presidential elections, commercial lifestyle indicators, census data, self-reported party preferences from private polling and more."

State	*Description*
AK	Registered partisanship
AR	Registered partisanship
CO	Registered partisanship
FL	Registered partisanship
IA	Registered partisanship
ID	Registered partisanship
LA	Registered partisanship
MA	Registered partisanship
MD	Registered partisanship
ME	Registered partisanship
MI	Most recent even-year partisan primary participation. If not available, most recent odd-year partisan primary participation. Additional imputation using modeled race and campaign finance data.
MN	Modeled
MS	Most recent even-year partisan primary participation. If not available, most recent odd-year partisan primary participation. Additional imputation using self-reported race and campaign finance data.
MT	Modeled
ND	Modeled
NH	Registered partisanship
NV	Registered partisanship
SC	Most recent even-year partisan primary participation. If not available, most recent odd-year partisan primary participation. Additional imputations using demographic and campaign finance data.
TX	Most recent even-year partisan primary participation. If not available, most recent odd-year partisan primary participation. Additional imputations using demographic and campaign finance data.
VT	Modeled
WA	Most recent presidential primary participation. If a voter did not participate in a presidential primary, their partisanship is modeled using demographic and campaign finance data
WI	Modeled
WV	Registered partisanship
WY	Registered partisanship

Table A.6 – Mississippi Personnel and Voter File Dates Shows the intervals used to bin the MS personnel file into three groups and the dates of the state voter files matched to the corresponding group.

	State Voter Files:				
Personnel File	*MS*	*AL*	*LA*	*TN*	*AR*
1-1-10 to 12-31-14	3-17-14	3-18-14	3-20-14	3-18-14	4-11-14
1-1-15 to 12-31-19	3-7-17	3-7-17	2-14-17	2-17-17	3-29-17
1-1-20 to 6-30-22	3-23-21	2-4-21	1-22-21	3-29-21	3-16-21

A.2 Validating "Spigot" Definition

This section provides additional information about how I filter the personnel dataset to influential, senior employees (i.e., "spigots"). Table A.7 shows, for each state, the ten job titles that are most common, after filtering out employees who are not in the top salary quartile for the state and period as well as common strings in titles of jobs that are not involved in regulatory, budgetary, or policy work. Table A.8 shows the most common job titles for exempted agencies and the rest of the workforce in the last pre-treatment period. Figure A.1 shows the share of states' full workforces and spigots that are employed in the capital and adjacent counties. The increased share of spigots in the capital metropolitan area suggests that my definition of who is influential in states' bureaucracies is picking up on real differences in employee influence.

Table A.7 – Most Common Job Titles Among Top-Quartile, by State Shows, for each state, the ten most frequent job titles among the employees with the top-quartile of salaries after removing high-paid non-regulatory positions like nurses, doctors, and engineers.

State	Ten Most Frequent Job Titles
AK	attorney iv; attorney v; division director - px; attorney iii; division operations manager; fish & game coordinator; attorney 4; program coordinator ii; accountant iv; protective services specialist iv

AR tax auditor ii; attorney specialist; public school program advisor; ddssa claims adjudicator iii; dhs program administrator; family service worker supervisor; software support analyst; dhs program manager; adc/dcc captain; dcc parole/probation asst area mgr

CO program management ii; program management i; management; program management iii; administrator v; environ protect spec ii; administrator iv; asst attorney general ii; senior executive service; state patrol supervisor

FL senior attorney; government operations consultant ii; operations & mgmt consultant mgr - ses; government analyst ii; senior management analyst ii - ses; operations review specialist; senior management analyst supv - ses; operations & mgmt consultant ii - ses; environmental specialist iii; correctional probation senior officer

IA public service manager 1; exec off 2; public service manager 2; asst attorney general 3; program planner 3; exec off 3; public service executive; exec off 1; social work supervisor; slip retiree

ID deputy attorney general; program manager; administrative; isp specialist; analyst 4; project manager 1; trans operations team leader; coordinator-supt off; programs bur chf-h&w; it manager ii

LA state police master troop; rn 3; med cert specialist 2; asst attorney gen; director; attorney 3; instructor; prog mgr 1-a-dhh; it management consult 1; ed program consultant 3

MA program coordinator iii; counsel ii; administrator viii; administrator vi; program manager vii; administrator vii; correction officer iii; program manager v; program manager vi; administrator ix

MD administrator iii; asst attorney general vi; prgm mgr iii; prgm mgr ii; social work supv fam svcs; prgm mgr iv; administrator ii; prgm mgr senior ii; administrator iv; parole & prob agent sr

ME public service manager ii; asst attorney general; asst district attorney; senior technician; game warden; public service coordinator i; environmental specialist iv; public service manager i; human services caseworker supv; public service manager iii

MI state administrative manager-1; services program mgr-3; departmental specialist-2; state division administrator; environmental quality alt-a; departmental manager-3; auditor-a; state assistant administrator; departmental specialist-3; state office administrator

MN state prog admin coordinator; state prog admin prin; state prog admin manager sr; state prog admin director; planner principal state; educ specialist 2; systems analysis unit supv; management analyst 4; state prog admin manager; transp specialist

MS division director ii; bureau director ii; staff officer ii; office director ii; attorney general-special assistant; staff officer iii; bureau director, deputy; business systems analyst ii; branch director ii; dhs-area social work supv

MT lawyer; program manager; lawyer2; operations manager; computer systems analyst; bureau chief; project management specialist; section supervisor; resource conservation mgr; lawyer 2

ND other-not cls-prof; health/human svc prgm admin iv; transportation srvcs supv ii; appointed–not classified; asst atty gen-not classfd; auditor iv; other-not cls-ofcl/admin; health/human svc prgm admin v; transportation proj mgr; systems administrator ii

NH administrator iii; administrator ii; administrator iv; environmentalist iv; program specialist iv; supervisor iv; supervisor vi; probation-parole off ii; business systems analyst i; business systems analyst ii

NV sr deputy atty general (ea); management analyst 3; dep atty general (ea); education programs professionl; admin services officer 3; correctional case work spec 2; environmental scientist 3; developmental specialist 4; social services program spec 3; admin services officer 2

SC program manager i; program manager ii; education associate; program coordinator ii; program manager iii; attorney iii; accounting/fiscal manager i; it manager i; attorney iv; dpty/div director-exec comp

TX mgr iv; mgr v; program specialist v; program specialist vi; director ii; child protective svcs spec iv; mgr ii; director iii; systems analyst v; mgr iii

VT staff attorney iv; staff attorney iii; deputy state's attorney; deputy commissioner; correctnl facility shift super; commissioner; community corr program supvsr; systems developer iii; aot technician vi; social services supervisor

WA wms band 2; wms band 3; asst atty gen; wms band 1; it system admin - journey; it app development - journey; management analyst 5; social service specialist 5; it business analyst - journey; it app development - sr/spec

WI supervising officer 2; attorney; assistant district attorney; program and policy analyst-adv; supervising officer 1; conservation warden; education consultant; asst st pub defndr atty; is systms devmnt svcs spec; is systms devmnt services spec

WV health human resources program manager 1; administrative services manager 1; asst attorney general; environmental resources specialist 3; administrative services manager 3; administrative services manager 2; coordinator ma+45; attorney 3; environmental inspector; coordinator ma, webmaster

WY	natural resources program principal; executive management 2; executive management 3; executive management 1; education program consultant; practicing attorney 4; natural resources program manager; practicing attorney 2; natural resources program supervisor; wy business council special classified

Figure A.1 – **Share of Matched Employees in State Capital Area** Shows the share of, respectively, all state employees and spigots who are employed in the capital containing the state capital city and adjacent counties.

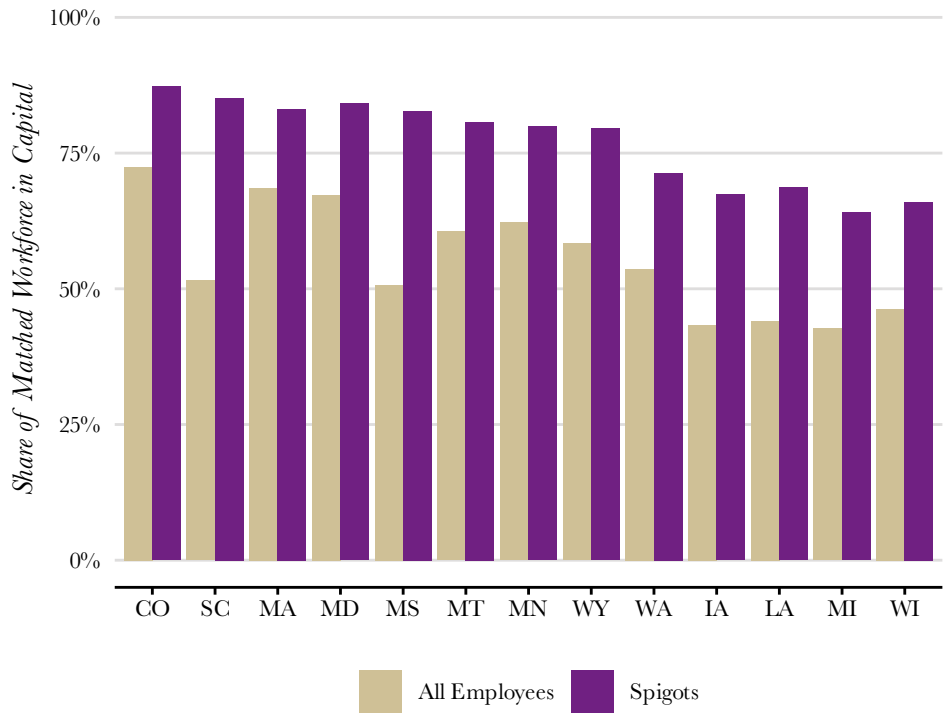


Table A.8 – Most Common Job Titles for Spigots in Exempted Agencies Shows, for the Departments of Corrections, Human Services, and Education, the ten most frequent job titles in the last pre-treatment period, as well as the ten most frequent positions in same period across the rest of the state workforce used as a control. In order to avoid post treatment bias or introducing addtional departures into the data, I classify someone as a spigot if they earned in the top quartile or did not have a spigot-related string in their job title at any time before the onset of treatment. For spigots in control agencies, I deem this to begin with the onset of the first exemption in 2014.

Exempted Agency	10 Most Frequent Job Titles
Corrections	
Control	branch director ii; bureau director, deputy; division director ii; dot-manager; bureau director i; bureau director ii; dor-tax auditor/accountant iii; staff officer ii; business systems analyst ii; dot-administrator i
Treatment	corr-correctional supervisor; corr-correctional commander; branch director i; corr-comm corrections, assoc dir; branch director ii; projects officer iii,special; corr-asst dir offender serv; correctional officer iv (sgt); op/mgmt analyst principal; personnel officer ii; personnel officer iii; personnel officer iv; projects officer iv,special
Education	
Control	branch director ii; bureau director, deputy; division director ii; bureau director i; dot-manager; bureau director ii; dor-tax auditor/accountant iii; staff officer ii; business systems analyst ii; staff officer i
Treatment	division director ii; v/h impt tchr ii(dual end)-pr; branch director ii; educ-spec education prog coord; educ-specialist, senior; op/mgmt analyst principal; regional service officer; v/h impt tchr iii(dual end)-pr; accountant/auditor iii; accountant/auditor iv, professional; accounting specialist sr; accounting/auditing bureau dir; business systems analyst i; business systems analyst ii; division director i; educ-budget officer senior; lead business systems analyst; personnel officer v; school facilities supervisor; school safety administator; school safety specialist; senior business systems analyst; senior communications analyst; systems manager i; v/h impt education spec sr; v/h impt voc tch i(dual end)pr; v/h impt voc tch i(sng end)
Human Services	
Control	bureau director ii; branch director ii; dot-manager; bureau director, deputy; dot-administrator i; division director ii; business systems analyst ii; dor-tax auditor/accountant iii; staff officer ii; bureau director i; staff officer i
Treatment	dhs-area social work supv; dhs-county director ii; projects officer iv,special; dhs-supervisor iii; dhs-county director i; dhs-county director iii; dhs-supervisor ii; dhs-program manager; accountant/auditor iii; dhs-child support reg dir; dhs-program admor sr

A.3 Additional Descriptive Results

This section includes additional descriptive results about the partisanship of state employees. Figure A.2 compares the partisanship of states' bureaucracies to their voting populations. Figure A.3 shows the share of partisan spigots in each state over time. Finally, Tables A.9 and A.10 show raw counts and shares of partisan bureaucrats in states' bureaucracies. Data from these tables are used to create Figure 2.1.

Table A.9 – The Partisanship of State Bureaucracies, by State and Affiliation
Shows the number and share of matched bureaucrats by partisan affiliation. Temporary and part-time employees (where available), as well as employees working for state boards, the national guard, and higher education institutions, are excluded. The first two columns show results for employees in the top salary quartile for the state, removing street-level bureaucrats; the next two columns show data for all employees who earn in the top salary quartile; and the final two columns show results for all state employees regardless of earnings.

		Top Quartile, Subsetted		All	
State	Partisanship	N	Share	N	Share
AK	Democratic	336	0.16	2159	0.15
	Non-Partisan	394	0.19	2246	0.16
	Other	862	0.42	6418	0.45
	Republican	404	0.20	3048	0.21
	Prob. < Threshold	70	0.03	402	0.03
AR	Democratic	1561	0.42	6548	0.36
	Non-Partisan	547	0.15	4881	0.27
	Other	1	0.00	6	0.00
	Republican	1059	0.29	4371	0.24
	Prob. < Threshold	521	0.14	2530	0.14
CO	Democratic	1727	0.38	6869	0.31
	Non-Partisan	1692	0.37	8409	0.38
	Other	26	0.01	261	0.01
	Republican	831	0.18	5396	0.24
	Prob. < Threshold	276	0.06	1367	0.06

FL	Democratic	3696	0.30	21509	0.33
	Non-Partisan	1420	0.11	7966	0.12
	Other	73	0.01	465	0.01
	Republican	2519	0.20	11787	0.18
	Prob. < Threshold	4717	0.38	24047	0.37
IA	Democratic	1415	0.43	6374	0.36
	Non-Partisan	913	0.27	5566	0.31
	Other	11	0.00	114	0.01
	Republican	858	0.26	5214	0.29
	Prob. < Threshold	124	0.04	610	0.03
ID	Democratic	307	0.15	1563	0.15
	Non-Partisan	701	0.34	3298	0.32
	Other	7	0.00	138	0.01
	Republican	878	0.42	4281	0.42
	Prob. < Threshold	175	0.08	944	0.09
LA	Democratic	1522	0.36	9877	0.42
	Non-Partisan	907	0.22	4956	0.21
	Other	17	0.00	128	0.01
	Republican	1210	0.29	5590	0.24
	Prob. < Threshold	531	0.13	2921	0.12
MA	Democratic	1575	0.32	10409	0.30
	Non-Partisan	2306	0.46	16137	0.47
	Other	14	0.00	302	0.01
	Republican	324	0.07	2733	0.08
	Prob. < Threshold	764	0.15	5054	0.15

MD	Democratic	3612	0.56	18515	0.56
	Non-Partisan	938	0.14	4427	0.13
	Other	56	0.01	330	0.01
	Republican	1512	0.23	7675	0.23
	Prob. < Threshold	353	0.05	1902	0.06
ME	Democratic	775	0.37	3113	0.30
	Non-Partisan	493	0.24	2680	0.26
	Other	58	0.03	400	0.04
	Republican	491	0.24	2693	0.26
	Prob. < Threshold	253	0.12	1324	0.13
MI	Democratic	3080	0.56	16524	0.56
	Non-Partisan	714	0.13	4462	0.15
	Republican	1368	0.25	6466	0.22
	Prob. < Threshold	360	0.07	1975	0.07
MN	Democratic	1214	0.30	7191	0.28
	Non-Partisan	910	0.22	8011	0.32
	Republican	1633	0.40	8049	0.32
	Prob. < Threshold	343	0.08	2105	0.08
MS	Democratic	686	0.36	4329	0.43
	Non-Partisan	312	0.16	2261	0.22
	Other	1	0.00	1	0.00
	Republican	842	0.44	3094	0.31
	Prob. < Threshold	71	0.04	419	0.04

MT	Democratic	728	0.28	3117	0.27
	Non-Partisan	744	0.29	4184	0.36
	Other	1	0.00	3	0.00
	Republican	1044	0.41	4275	0.36
	Prob. < Threshold	48	0.02	176	0.01
ND	Democratic	212	0.21	901	0.17
	Non-Partisan	149	0.14	1342	0.25
	Other	1	0.00	2	0.00
	Republican	518	0.50	2366	0.44
	Prob. < Threshold	153	0.15	809	0.15
NH	Democratic	511	0.33	2475	0.27
	Non-Partisan	496	0.32	3160	0.35
	Republican	325	0.21	2152	0.24
	Prob. < Threshold	218	0.14	1348	0.15
NV	Democratic	535	0.31	4742	0.31
	Non-Partisan	309	0.18	3039	0.20
	Other	104	0.06	894	0.06
	Republican	596	0.35	4927	0.32
	Prob. < Threshold	176	0.10	1723	0.11
SC	Democratic	1346	0.47	15884	0.58
	Non-Partisan	112	0.04	1567	0.06
	Republican	1392	0.49	10065	0.36
	Prob. < Threshold	5	0.00	67	0.00

TX	Democratic	8229	0.43	45823	0.43
	Non-Partisan	1299	0.07	10490	0.10
	Republican	5491	0.29	26534	0.25
	Prob. < Threshold	4224	0.22	23519	0.22
VT	Democratic	898	0.54	3521	0.49
	Non-Partisan	213	0.13	1449	0.20
	Other	2	0.00	19	0.00
	Republican	378	0.23	1409	0.20
	Prob. < Threshold	170	0.10	816	0.11
WA	Democratic	5576	0.59	25073	0.52
	Non-Partisan	1364	0.14	8604	0.18
	Other	3	0.00	41	0.00
	Republican	2036	0.21	11802	0.24
	Prob. < Threshold	545	0.06	2855	0.06
WI	Democratic	2281	0.43	11942	0.42
	Non-Partisan	876	0.17	6098	0.21
	Other	1	0.00	1	0.00
	Republican	1793	0.34	8730	0.31
	Prob. < Threshold	335	0.06	1603	0.06
WV	Democratic	925	0.34	4645	0.30
	Non-Partisan	358	0.13	2395	0.15
	Other	70	0.03	459	0.03
	Republican	766	0.28	4607	0.29
	Prob. < Threshold	590	0.22	3545	0.23

WY	Democratic	207	0.17	956	0.15
	Non-Partisan	122	0.10	757	0.12
	Other	7	0.01	69	0.01
	Republican	793	0.64	4001	0.63
	Prob. < Threshold	108	0.09	544	0.09

Table A.10 – The Partisanship of State Bureaucracies, by State, Affiliation, and Classification Shows the number and share of matched bureaucrats by partisan affiliation and classification. Temporary and part-time employees (where available), as well as employees working for state boards, the national guard, and higher education institutions, are excluded. The columns show results for, respectively, classified and unclassified employees in the top salary quartile for the state, removing street-level bureaucrats.

		Classified		Unclassified	
State	Partisanship	N	Share	N	Share
CO	Democratic	1054	0.35	673	0.44
	Non-Partisan	1131	0.37	561	0.37
	Other	18	0.01	8	0.01
	Republican	654	0.22	177	0.12
	Prob. < Threshold	164	0.05	112	0.07
FL	Democratic	1684	0.32	1965	0.28
	Non-Partisan	634	0.12	763	0.11
	Other	32	0.01	38	0.01
	Republican	985	0.18	1487	0.22
	Prob. < Threshold	1996	0.37	2653	0.38
ID	Democratic	217	0.16	90	0.13
	Non-Partisan	469	0.34	232	0.33
	Other	3	0.00	4	0.01
	Republican	557	0.41	321	0.46
	Prob. < Threshold	128	0.09	47	0.07

LA	Democratic	1315	0.37	207	0.33
	Non-Partisan	778	0.22	129	0.21
	Other	15	0.00	2	0.00
	Republican	1007	0.28	203	0.32
	Prob. < Threshold	443	0.12	88	0.14
MA	Democratic	606	0.28	969	0.35
	Non-Partisan	1101	0.50	1205	0.43
	Other	7	0.00	7	0.00
	Republican	170	0.08	154	0.06
	Prob. < Threshold	318	0.14	446	0.16
MN	Democratic	1028	0.28	186	0.43
	Non-Partisan	824	0.22	86	0.20
	Republican	1504	0.41	129	0.30
	Prob. < Threshold	311	0.08	32	0.07
MS	Democratic	464	0.38	222	0.32
	Non-Partisan	213	0.18	99	0.14
	Other	1	0.00	n/a	n/a
	Republican	493	0.41	349	0.50
	Prob. < Threshold	43	0.04	28	0.04
ND	Democratic	172	0.20	40	0.22
	Non-Partisan	121	0.14	28	0.16
	Other	1	0.00	n/a	n/a
	Republican	443	0.52	75	0.42
	Prob. < Threshold	118	0.14	35	0.20

NV	Democratic	387	0.30	148	0.35
	Non-Partisan	231	0.18	78	0.19
	Other	82	0.06	22	0.05
	Republican	468	0.36	128	0.31
	Prob. < Threshold	135	0.10	41	0.10
SC	Democratic	1257	0.47	89	0.45
	Non-Partisan	106	0.04	6	0.03
	Republican	1289	0.49	103	0.52
	Prob. < Threshold	5	0.00	n/a	n/a
VT	Democratic	725	0.54	173	0.56
	Non-Partisan	182	0.13	31	0.10
	Other	2	0.00	n/a	n/a
	Republican	316	0.23	62	0.20
	Prob. < Threshold	127	0.09	43	0.14
WA	Democratic	4379	0.56	1197	0.68
	Non-Partisan	1161	0.15	203	0.12
	Other	3	0.00	n/a	n/a
	Republican	1781	0.23	255	0.15
	Prob. < Threshold	445	0.06	100	0.06
WI	Democratic	2066	0.44	215	0.40
	Non-Partisan	774	0.16	102	0.19
	Other	1	0.00	n/a	n/a
	Republican	1605	0.34	188	0.35
	Prob. < Threshold	301	0.06	34	0.06

Figure A.2 – Partisanship of Senior Democratic Employees vs Voters The top panel shows the share of senior state bureaucrats who are registered Democrats relative to the share of the state population that are registered Democrats. The bottom panel is the same except it subsets the voter data to only include those voters whose household income is estimated to be greater than $100,000 by L2. Data is a snapshot from early 2021 and only includes employees matched to at least one voter. An employee is deemed to be a registered Democrat if their probability of being a Democrat exceeds 0.9. Data excludes national guard, state board, higher education, part-time (where available), and temporary employees (where available). The labels are minimally jittered to eliminate overplotting.

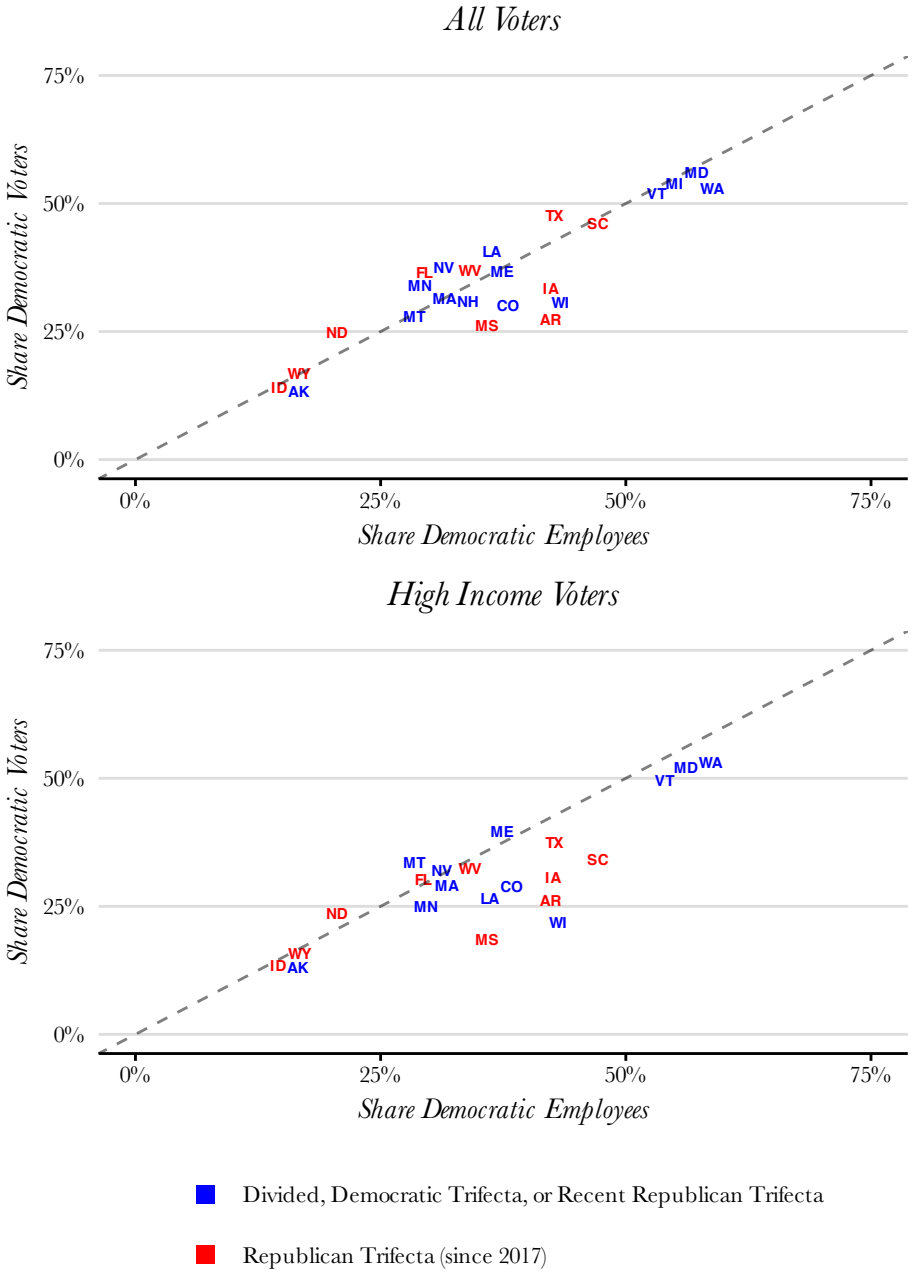
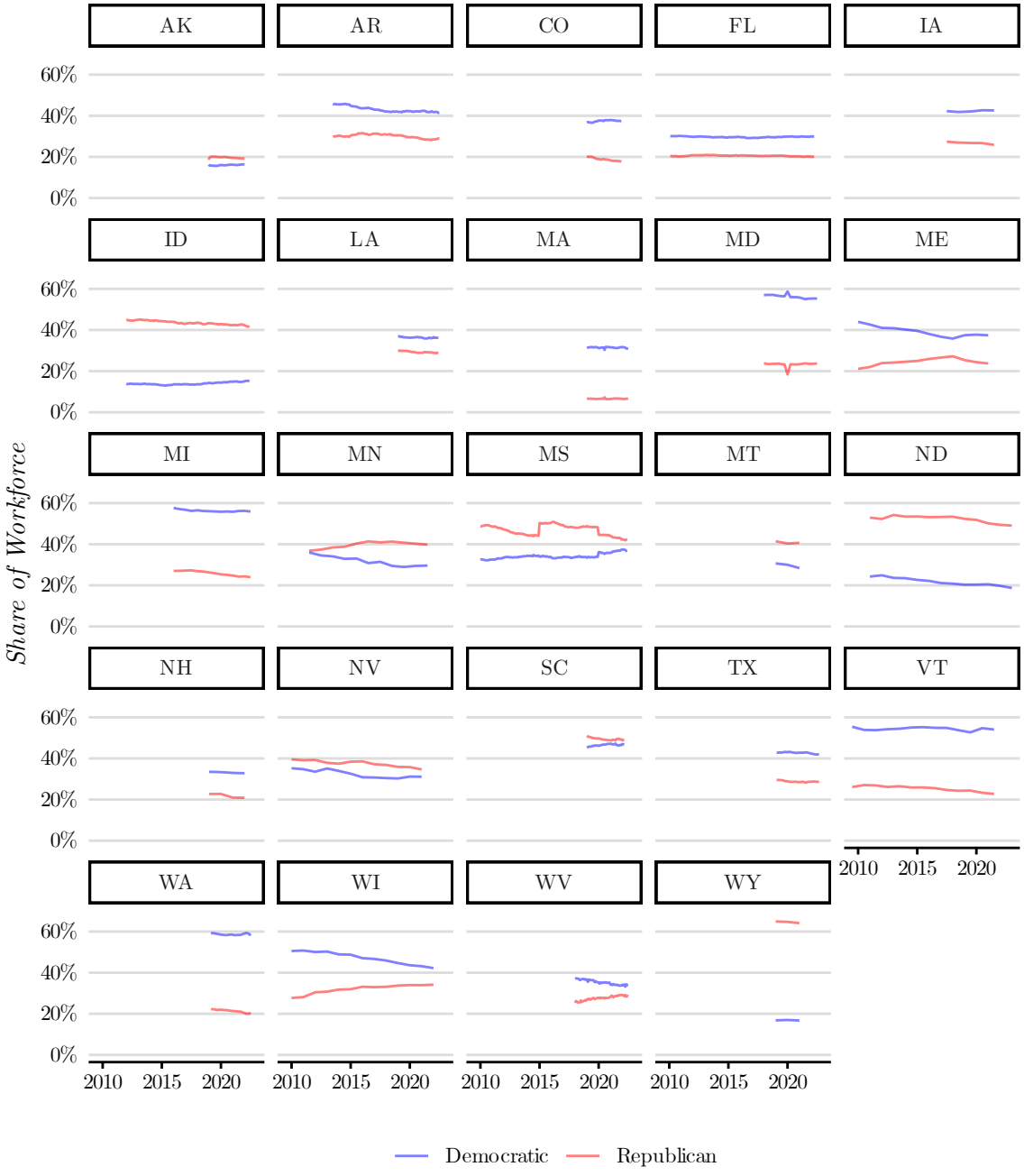


Figure A.3 – Partisanship of Senior Employees Over Time Shows the share of spigots in each state that are Democrats and Republicans. An employee is deemed to be a registered Democrat (Republican) if their probability of being a Democrat (Republican) exceeds 0.9. Data excludes national guard, state board, higher education, part-time (where available), and temporary employees (where available).



A.4 Synthetic Control Diagnostics and Robustness Checks

This section includes diagnostic information on the synthetic control models shown in Figure 2.3 as well as alternative models examining the effect of reclassification on resignations and retirements. Figures A.4 and A.5 compare the number of resignations, retirements, and involuntary dismissals in an agency-month against the number of departures, as calculated from the individual-level personnel and voter registration data. They show that the two different datasets closely map one another, except in the cases of the Departments of Mental Health and Corrections. It is unknown why these two agencies have discrepancies. Next, Figures A.6 and A.7 show the variables and agencies (and associated weights) used to construct the synthetic controls of the agencies that experienced reclassification. Finally, Figure A.8 follows a similar design as Figure 2.3, except the outcome variable is the share of retirements and resignations, rather than the share of involuntary dismissals. This plot shows that the effect of reclassification is isolated to involuntary rather than voluntary departures.

Figure A.4 – Comparison of Dependent Variables – All Agencies Compares the number of departures from Mississippi state agencies using the aggregated number of dismissals, resignations, and retirements, and the aggregated individual-level measure of departures from the personnel data. The counts exclude the Departments of Corrections and Mental Health. Both agencies are large and their dismissal data is highly uncorrelated with the departure data for unknown reasons. The measures include unclassified and part-time state employees.

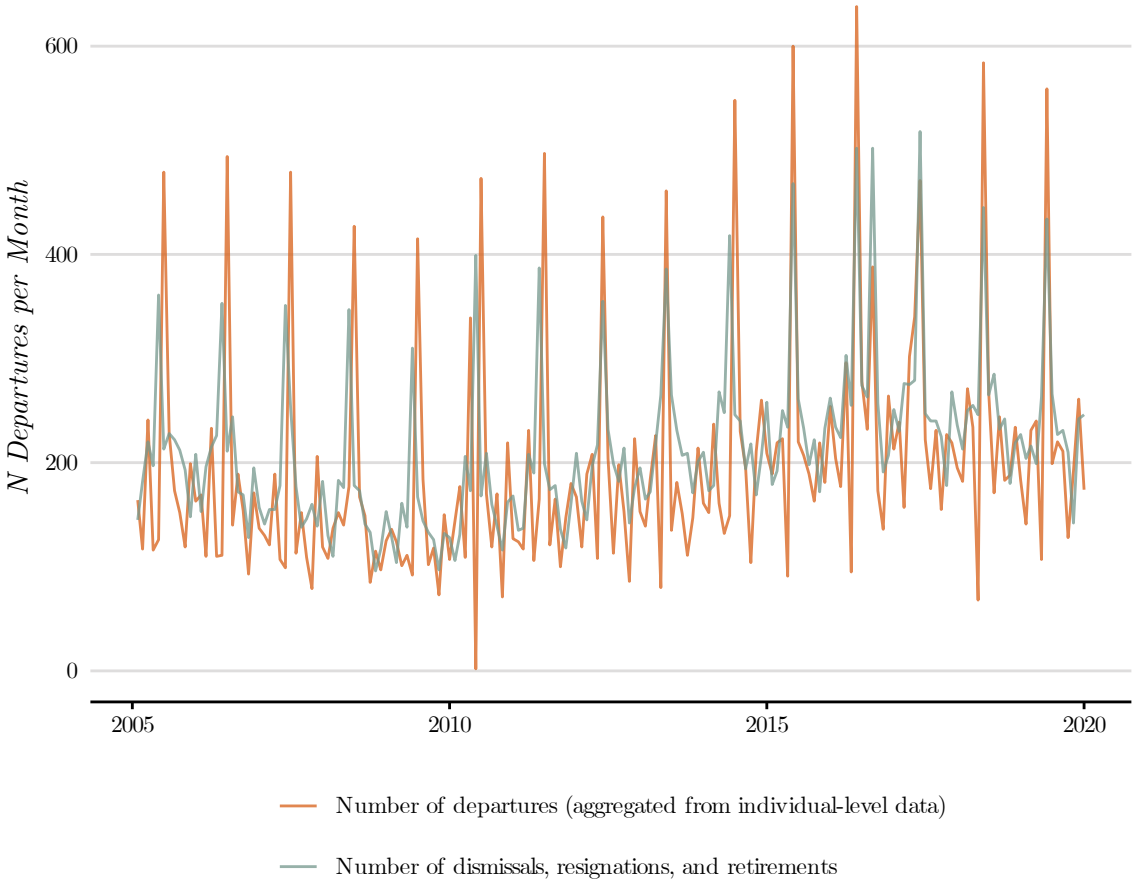


Figure A.5 – Comparison of Dependent Variables – Reclassified Agencies Compares the number of departures from the Departments of Corrections, Education, Human Services, and Marine Resources using the aggregated number of dismissals, resignations, and retirements, and the aggregated individual-level measure of departures from the personnel data. The measures include unclassified and part-time state employees.

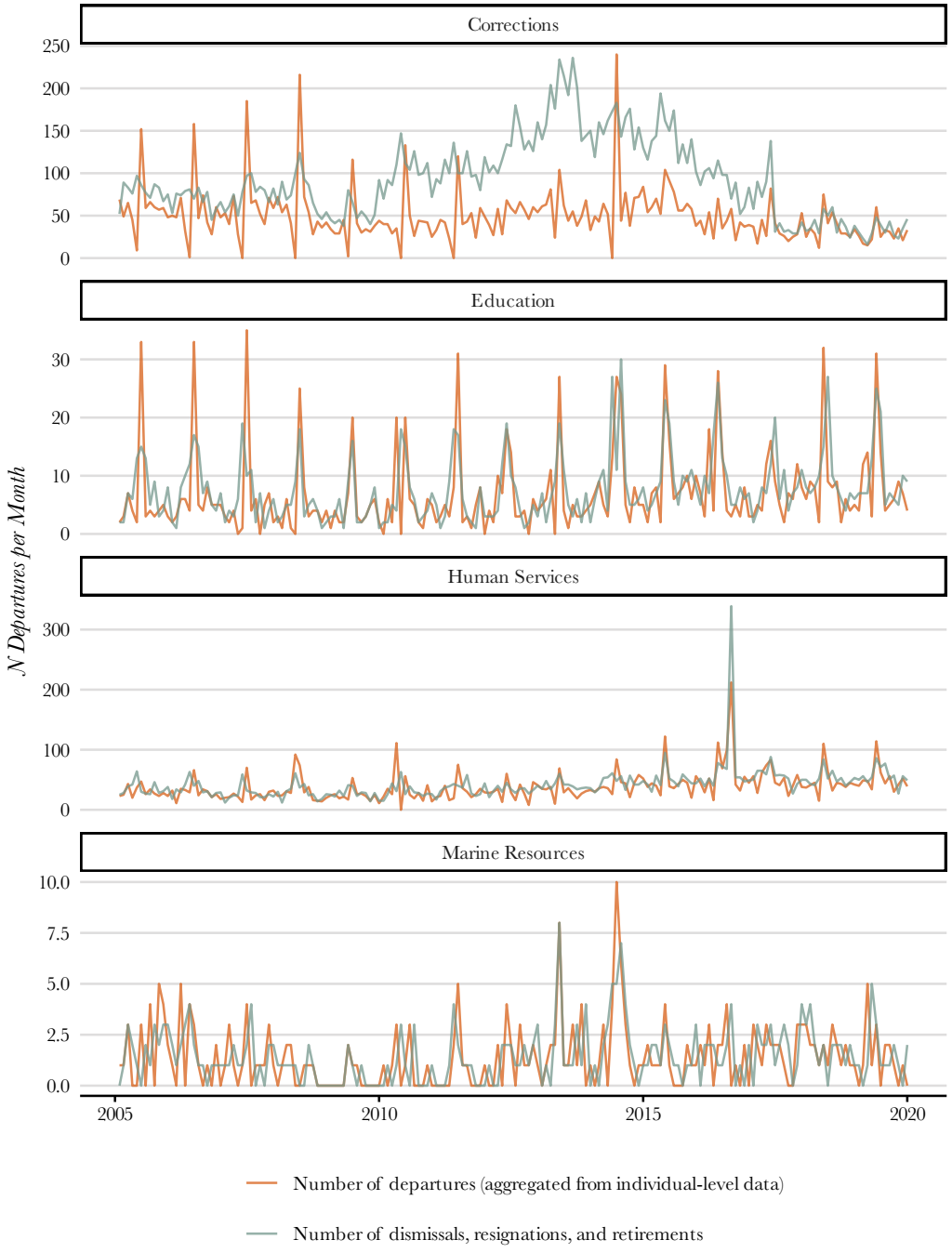


Figure A.6 – Agency Weights for Involuntary Dismissal Models in Figure 2.3 Shows the weights of the untreated units used to create the respective synthetic controls for the models testing the effect of reclassification on involuntary dismissals in the Departments of Education, Human Services, and Marine Resources. The agencies are ordered from right to left by number of employees. The variables used to generate the weights are shown in Figure A.7.

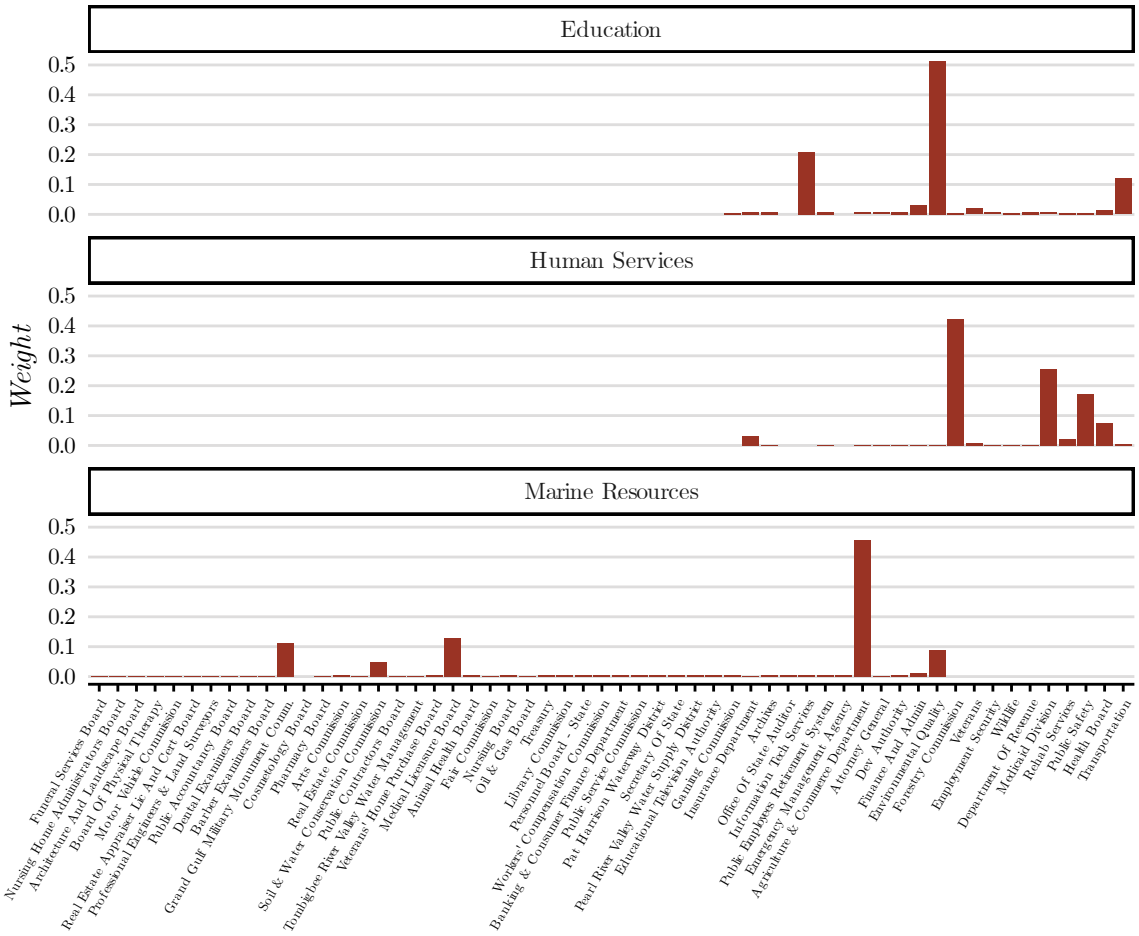


Figure A.7 – Variable Weights for Involuntary Dismissal Models in Figure 2.3
Shows the pre-treatment outcome variables and covariates used to generate the respective synthetic control models testing the effect of reclassification on involuntary dismissals in the Departments of Education, Human Services, and Marine Resources.

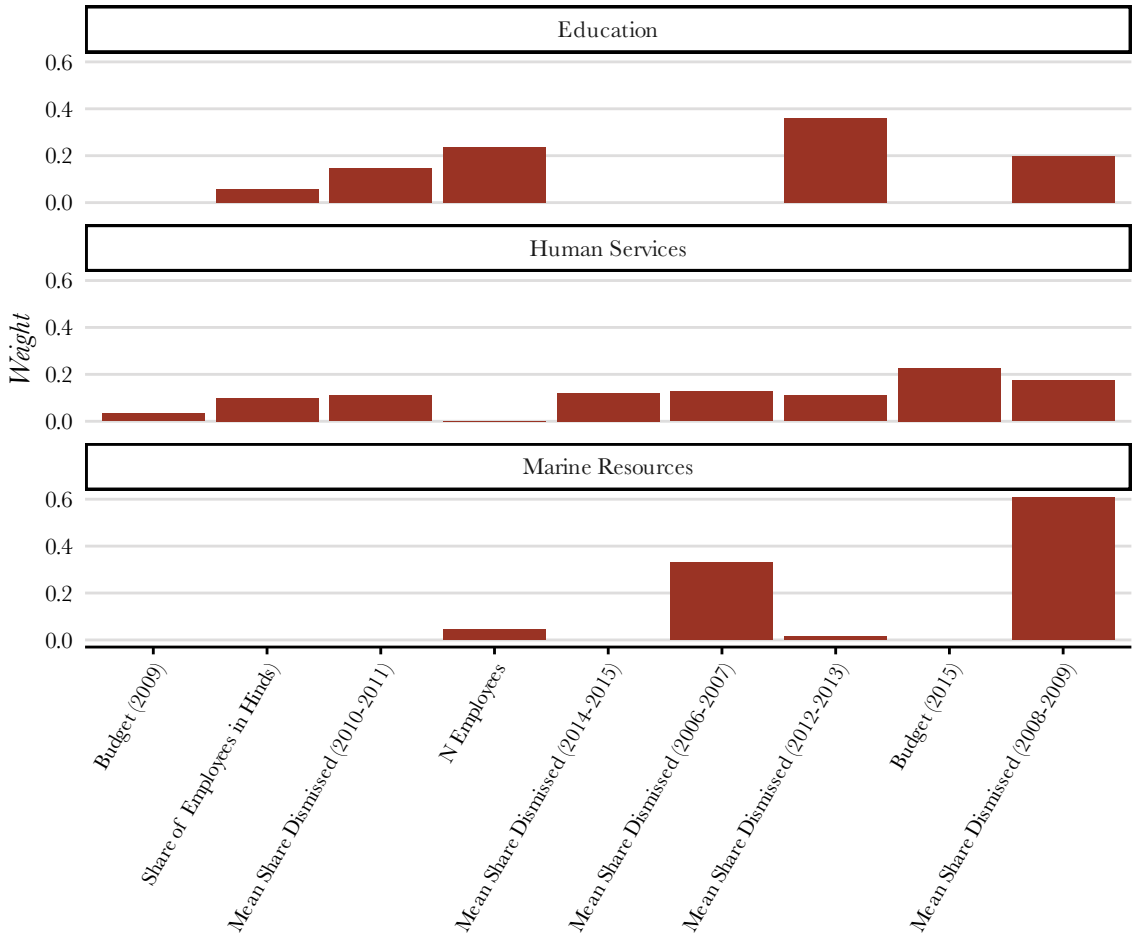
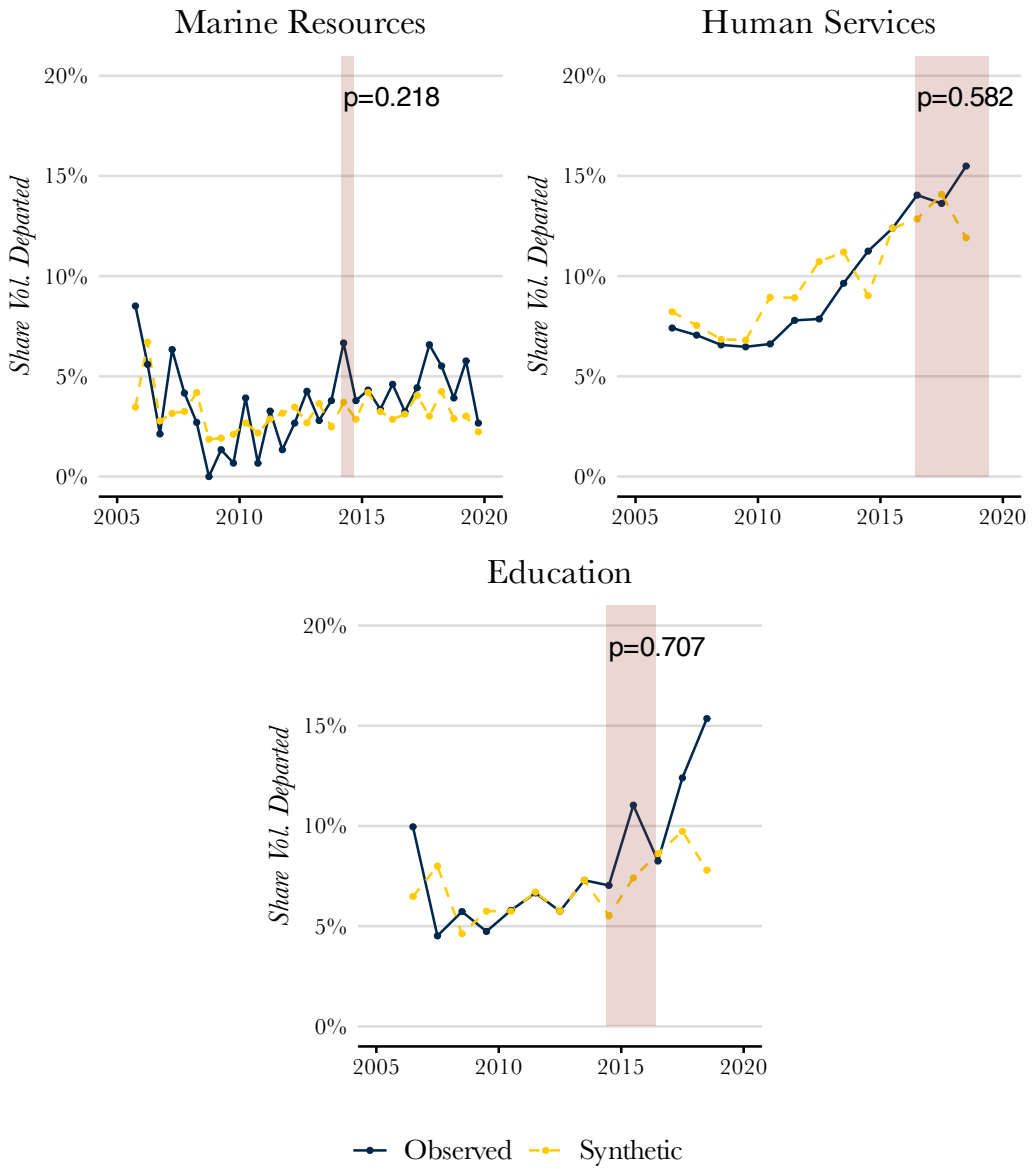


Figure A.8 – Effect of Reclassification on Resignations and Retirements Shows three separate synthetic control models comparing the share of employees in the given agency that resigned or retired from state employment in the given period (blue) against a statistically generated control (yellow). The unit of analysis for the Human Services and Education models is the agency-year. For the Marine Resources model, the unit of analysis is the agency-semiannual period. In each plot, a point represents the number of employees who retired or resigned over the forthcoming 12 or 6 months divided by the total number of employees in the agency at the start of the period. The shaded area in each of the plots represents periods where the given agency was not covered by the MSPB. The p value (rounded to the hundredth) represents the probability of observing a treatment effect as extreme via a series of placebo exercises where treatment is randomly assigned to an agency in the control set.



A.5 PanelMatch Diagnostics and Robustness Checks

This section provides diagnostic information and robustness checks for the individual-level analysis examining whether Democrats were more likely to depart following reclassification than Republicans. Figures A.9 and A.10 show the size of the control sets and the covariate balance, respectively, for the four `PanelMatch` models in Figure 2.4. Figure A.11 shows differences between mean covariate values for treated and control groups in the `Panel Match` model moderated by tenure length. Figure A.12 shows an alternative version of the model moderated by tenure length with additional values for the years of experience moderator.

Figure A.9 – Histogram of Number of Matched Control Units Shows, for the `PanelMatch` model using only spigots in Figure 2.4, the frequency of sets of matched control employees of various sizes. Overall, the histograms show that most treated employees were able to be matched to control employees.

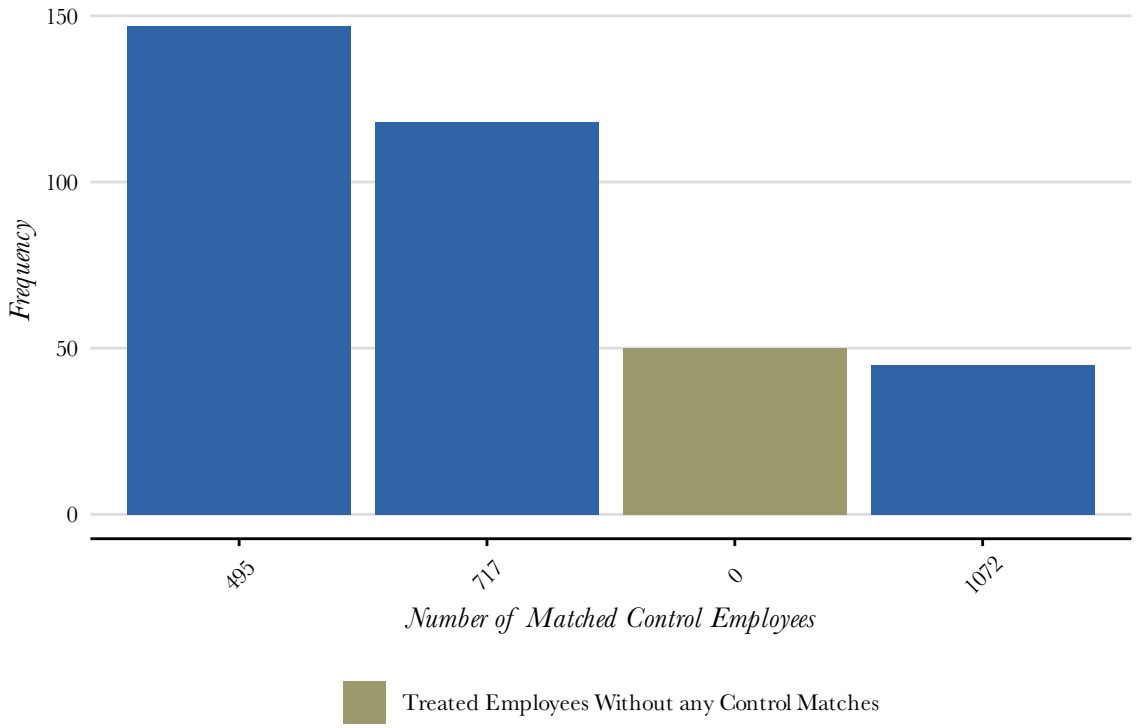


Figure A.10 – Covariate Balance across Treatment and Control Groups Shows, for the `PanelMatch` model using only spigots in Figure 2.4, the covariate balance in pre-treatment periods between treated and control employees. Covariate balancing is conducted using Covariate Balance Propensity Score matching.

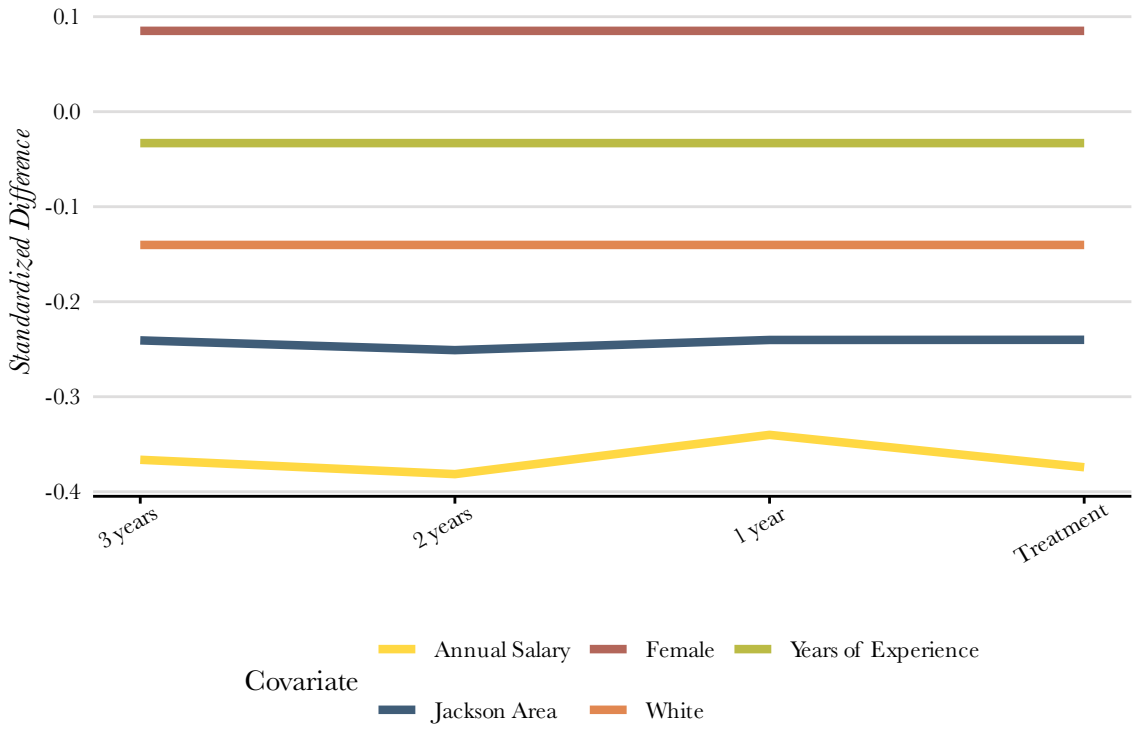


Figure A.11 – Covariate Balance Across Treatment and Control Groups for Tenure Length Model Shows, for the model in Figure 2.5, the covariate balance in pre-treatment periods between treated and control employees. Covariate balancing is conducted using Covariate Balance Propensity Score matching.

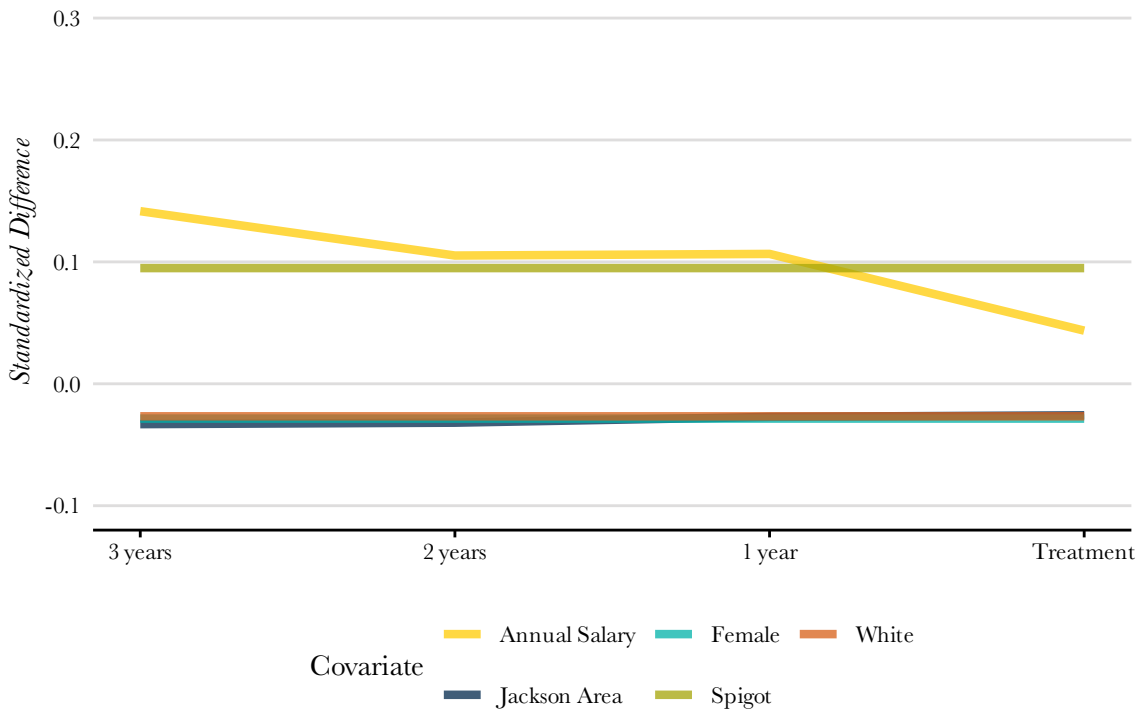
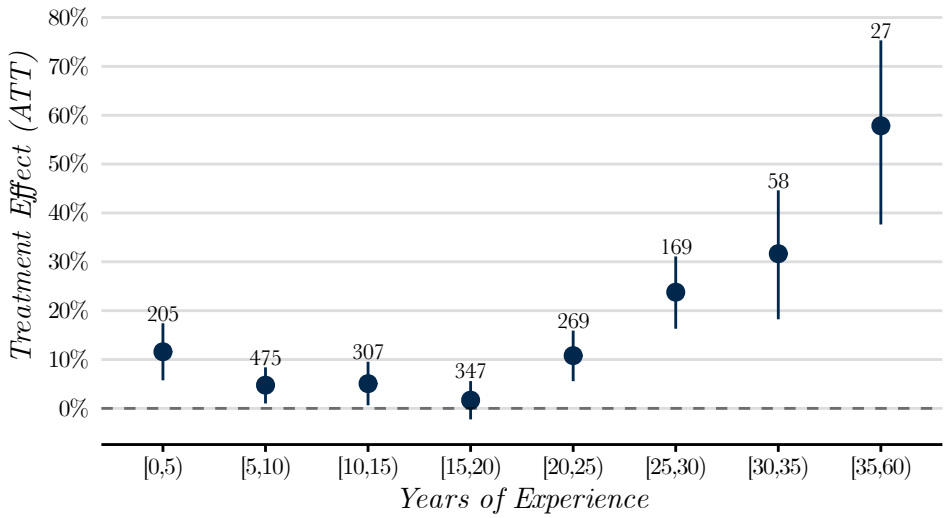


Figure A.12 – Treatment Effect Estimates for All Employees, Moderated by Years of Experience Shows point estimates and 95% confidence intervals from one `PanelMatch` model moderated by employees' years of experience. The model is the same as in Figure 2.5 except there are additional categorical values for the years of experience variable. The model includes all employees, regardless of whether they were matched to a voter, their seniority, or salary.



APPENDIX B

Bureaucratic Departures After Civil Service Rollbacks

Table B.1 – Calculated vs. Reported Number of Employees, by Civil Service Status Shows the number of employees, by civil service status as reported in Florida's annual workforce reports (as of December 31st) and the number calculated in the personnel file as of January 1st of the following year (i.e., one day difference).

Civil Service Status	Date	Annual Report	Calculated
Career Service	Jan-2000	110,952	104,283
Career Service	Jan-2001	109,389	106,102
Career Service	Jan-2002	90,519	85,865
Career Service	Jan-2003	88,681	86,933
Career Service	Jan-2004	87,466	85,672
SES	Jan-2000	3,440	2,841
SES	Jan-2001	3,696	3,000
SES	Jan-2002	19,454	20,175
SES	Jan-2003	19,478	18,138
SES	Jan-2004	18,925	17,739

Table B.2 – Coefficients of Control Variables Shows the coefficients on the control variables used in the logit model to produce the predicted probabilities shown in Figure 3.2

	Model 1
White	0.02^{*}
	(0.01)
Female	0.18^{***}
	(0.01)
Annual Salary ($10k)	-0.10^{***}
	(0.01)
Capital	-0.23^{***}
	(0.01)
Years of Experience	-0.12^{***}
	(0.00)
Years of Experience^2	0.00^{***}
	(0.00)
Quarter FEs	✓
AIC	400061.42
BIC	400498.67
Log Likelihood	−199994.71
Deviance	399989.42
Num. obs.	1391524

$^{***}p < 0.001$; $^{**}p < 0.01$; $^{*}p < 0.05$

Table B.3 – Influential Employees in Politically Distal or Fiscally-Constrained Agencies No More Likely to Depart
Shows the results of logit models with standard errors clustered at the employee level. The "SF" variable includes quarters in the 1 year following Service First. All models include individual-level controls for race, sex, salary, location, years of experience, and years of experience squared. Observed duration is modeled using a cubic trend.

	All SES			Higher-earning SES		
	(1)	(2)	(3)	(4)	(5)	(6)
SF	1.69	2.05*	1.64	2.97	2.37*	2.90
	[0.90; 3.17]	[1.67; 2.51]	[0.88; 3.07]	[0.81; 10.86]	[1.58; 3.56]	[0.80; 10.47]
Positions	0.96*	0.95*	0.95*	0.95*	0.94*	0.94*
	[0.95; 0.97]	[0.92; 0.98]	[0.92; 0.98]	[0.92; 0.98]	[0.89; 0.99]	[0.89; 0.99]
ln(Dems)	4.12*	4.26*	4.19*	2.75*	2.76*	2.80*
	[2.62; 6.47]	[2.72; 6.68]	[2.66; 6.58]	[1.08; 7.01]	[1.09; 6.97]	[1.10; 7.17]
ln(Employees)	0.21*	0.21*	0.21*	0.32*	0.32*	0.32*
	[0.13; 0.34]	[0.13; 0.33]	[0.13; 0.33]	[0.13; 0.84]	[0.12; 0.83]	[0.12; 0.83]
SF * ln(Dems)	1.02		1.03	0.97		0.97
	[0.95; 1.10]		[0.95; 1.11]	[0.83; 1.13]		[0.84; 1.13]
SF * Positions		1.01	1.01		1.01	1.01
		[0.98; 1.05]	[0.98; 1.05]		[0.95; 1.08]	[0.95; 1.08]
Cubic Trend	✓	✓	✓	✓	✓	✓
Ind. Controls	✓	✓	✓	✓	✓	✓
N	99,117	99,117	99,117	24,874	24,874	24,874

* Null hypothesis value outside the confidence interval.

Table B.4 – Influential Employees in Politically Distal or Fiscally-Constrained Agencies No More Likely to Depart
Shows the results of logit models with standard errors clustered at the employee level. The "SF" variable includes quarters in the 2 years following Service First. All models include individual-level controls for race, sex, salary, location, years of experience, and years of experience squared. Observed duration is modeled using a cubic trend.

	All SES			Higher-earning SES		
	(1)	(2)	(3)	(4)	(5)	(6)
SF	1.00	1.47*	0.93	1.24	1.69*	1.09
	[0.56; 1.81]	[1.21; 1.77]	[0.52; 1.66]	[0.36; 4.32]	[1.16; 2.45]	[0.33; 3.63]
Positions	0.97*	0.95*	0.95*	0.98*	0.94*	0.94*
	[0.97; 0.98]	[0.92; 0.98]	[0.92; 0.98]	[0.96; 0.99]	[0.88; 1.00]	[0.88; 0.99]
ln(Dems)	1.78*	1.90*	1.83*	2.46*	2.73*	2.63*
	[1.25; 2.54]	[1.34; 2.71]	[1.28; 2.61]	[1.12; 5.39]	[1.26; 5.92]	[1.20; 5.77]
ln(Employees)	0.51*	0.49*	0.49*	0.37*	0.34*	0.34*
	[0.35; 0.74]	[0.34; 0.72]	[0.34; 0.71]	[0.17; 0.83]	[0.15; 0.77]	[0.15; 0.76]
SF * ln(Dems)	1.05		1.06	1.04		1.06
	[0.98; 1.12]		[0.99; 1.13]	[0.89; 1.20]		[0.92; 1.22]
SF * Positions		1.02	1.03		1.05	1.05
		[0.99; 1.06]	[0.99; 1.06]		[0.98; 1.11]	[0.99; 1.11]
Cubic Trend	✓	✓	✓	✓	✓	✓
Ind. Controls	✓	✓	✓	✓	✓	✓
N	151,413	151,413	151,413	37,989	37,989	37,989

* Null hypothesis value outside the confidence interval.

Figure B.1 – Employees Switched to SES No More Likely to Depart Immediately Following Service First (Alternative Definition of Treatment Group) Shows the predicted probability of departing for employees switched to the SES and control employees who remained in the Career Service. Unlike in Figure 3.2, the treated "Switchers" includes all employees who were in the "Supervisors" or "Managerial/Confidential" CBU units before July 2001 and/or in the SES after July 2001. This more expansive definition includes employees who were in the SES before and after Service First and employees who remained in the Career Service in the "Supervisors" or "Managerial/Confidential" CBU units after Service First.

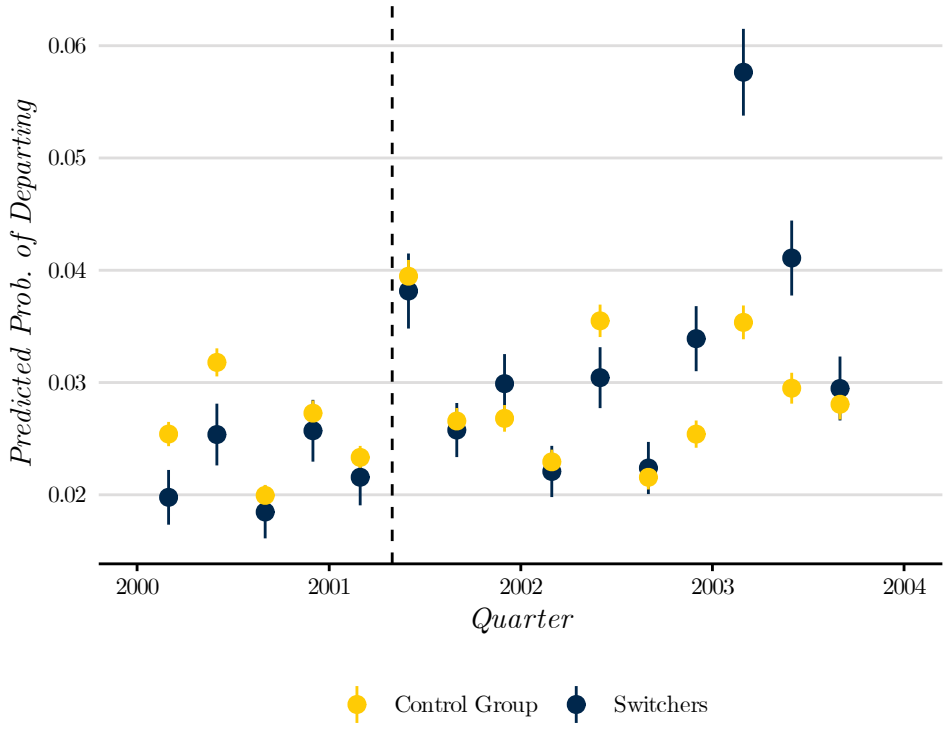


Figure B.2 – Reclassification Into SES More Likely For Higher Earners Working In/Around Tallahassee Shows the predicted probability of an employee being reclassified from the Career Service into the SES by annual salary and location. Predicted probabilities calculated from a logit model with race and gender covariates and years of experience fixed effects. The predicted probabilities shown here are calculated for a white female employee who has worked for the state for 11 years.

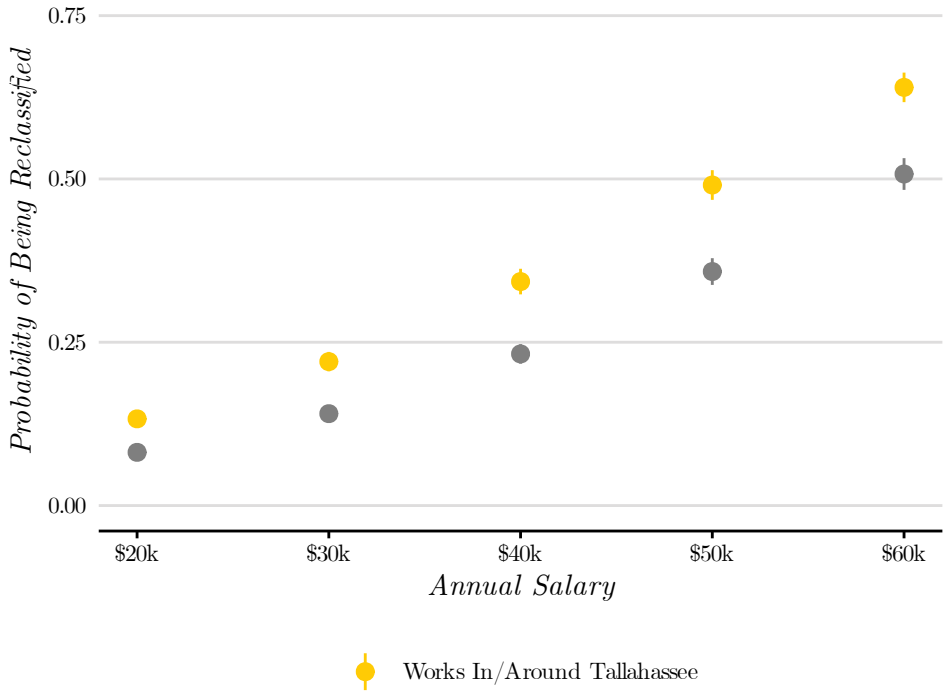


Figure B.3 – Reclassification Into SES More Likely For More Experienced Employees Working In/Around Tallahassee Shows the predicted probability of an employee being reclassified from the Career Service into the SES by years of experience and location. Predicted probabilities calculated from a logit model with years of experience fixed effects and race, gender, and salary covariates. The predicted probabilities shown here are calculated for a white female employee with an annual salary of $30,000.

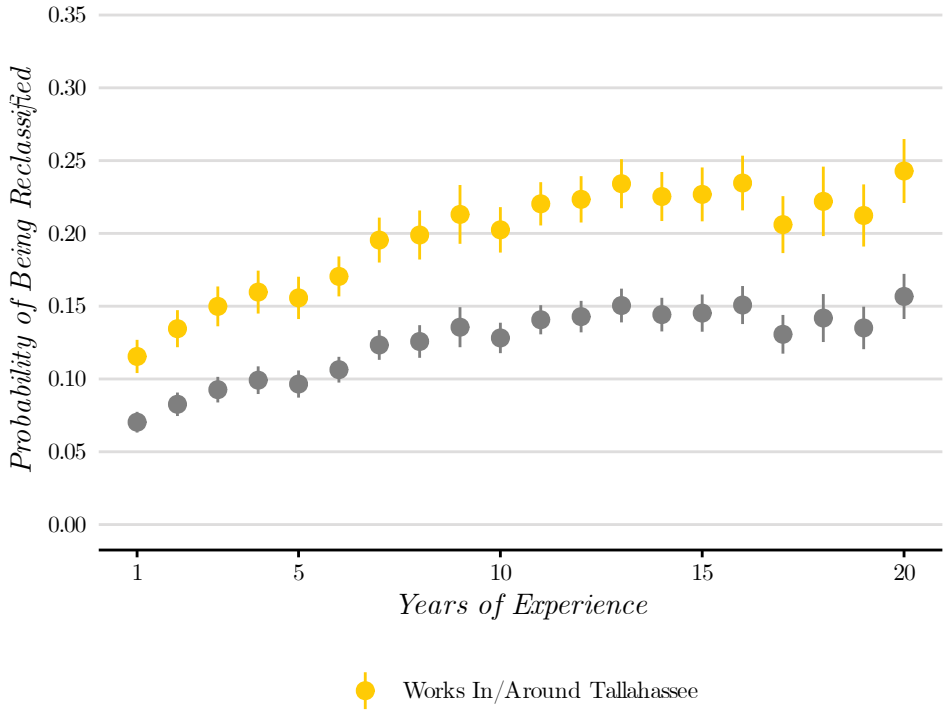


Figure B.4 – Share of Matched Employees That are Registered Democrats Shows the share of matched Florida employees that are registered Democrats by agency. The size of the dots are binned into tertiles and correspond to the number of (matched) employees in the agency.

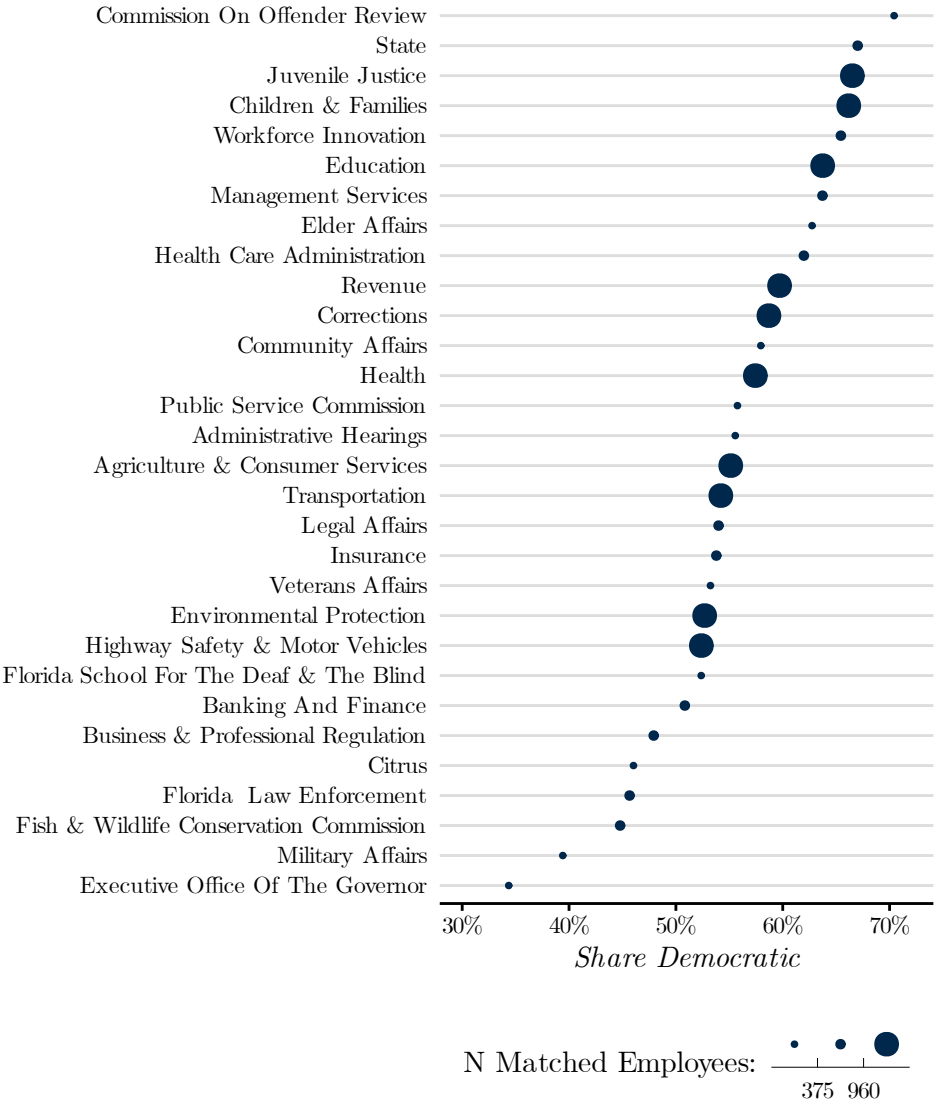


Figure B.5 – Size of "Switchers" Treatment Group and Control Group Over Time Shows, per quarter, the number of employees imputed as having lost their civil service protections due to Service First (Switchers) and the control group of employees who remained protected.

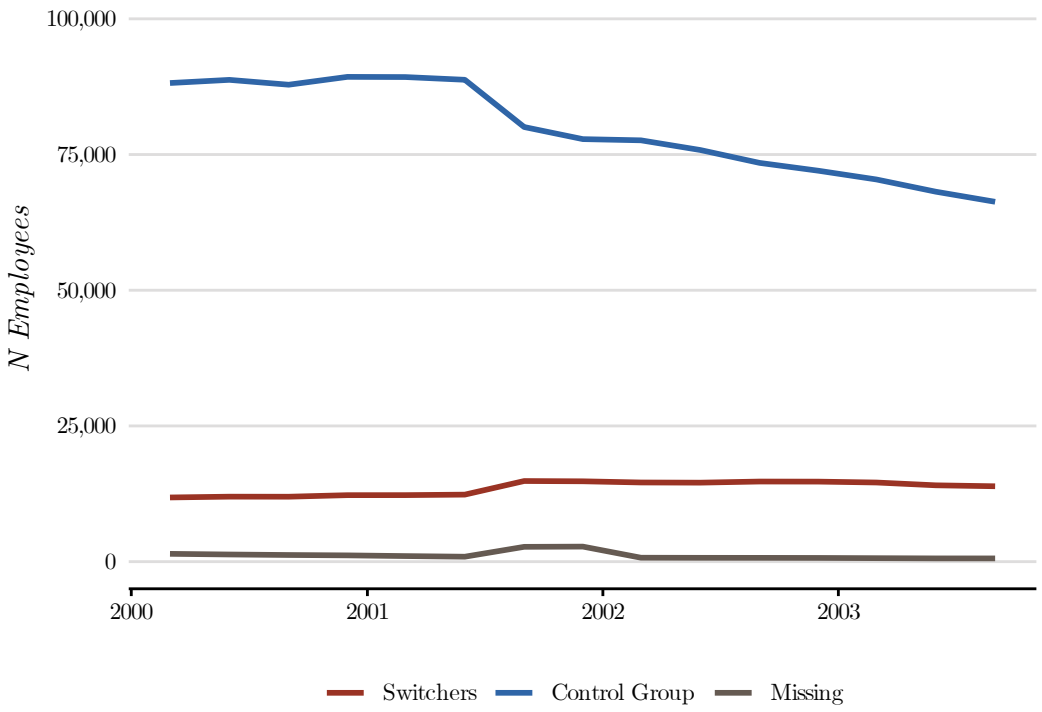
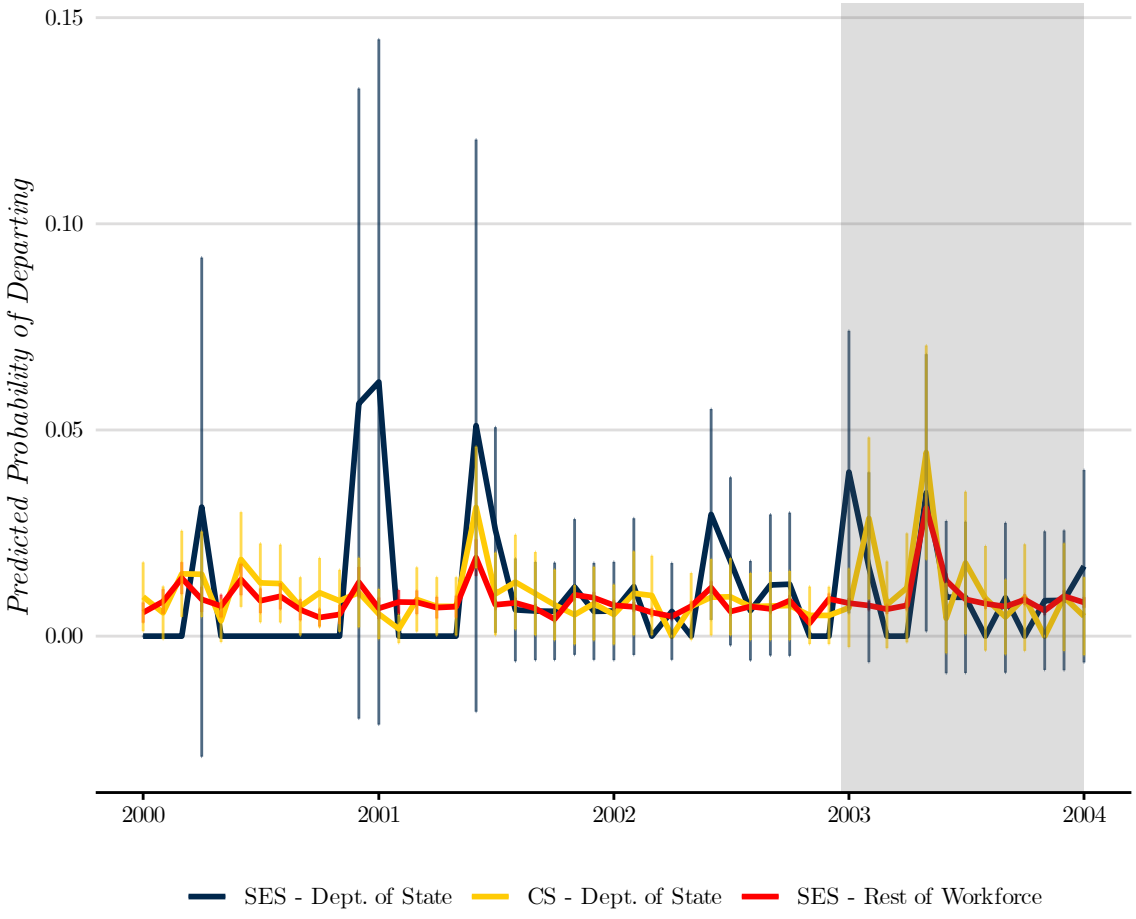


Figure B.6 – Unprotected Employees in Department of State No More Likely to Depart During Reorganization Shows the predicted probabilities and associated 95% confidence intervals for SES and Career Service employees, respectively, in the Department of Education (top panel) and SES employees in the Department of Education and rest of service, respectively (bottom panel). Predicted probabilities are calculated for a white female employee working in or around the state capital with mean earnings, years of experience, and squared years of experience. Shading indicates the onset of the cabinet reorganization that gave the governor greater control of the agency.



APPENDIX C

Excessive Heat and Correctional Officer Departures: Evidence from Texas

C.1 Heat in Texas

Figure C.1 – Mean Monthly Temperature of Counties with Prisons, by AC Status Shows the mean monthly temperature of counties containing prisons that have full and no air conditioning, respectively.

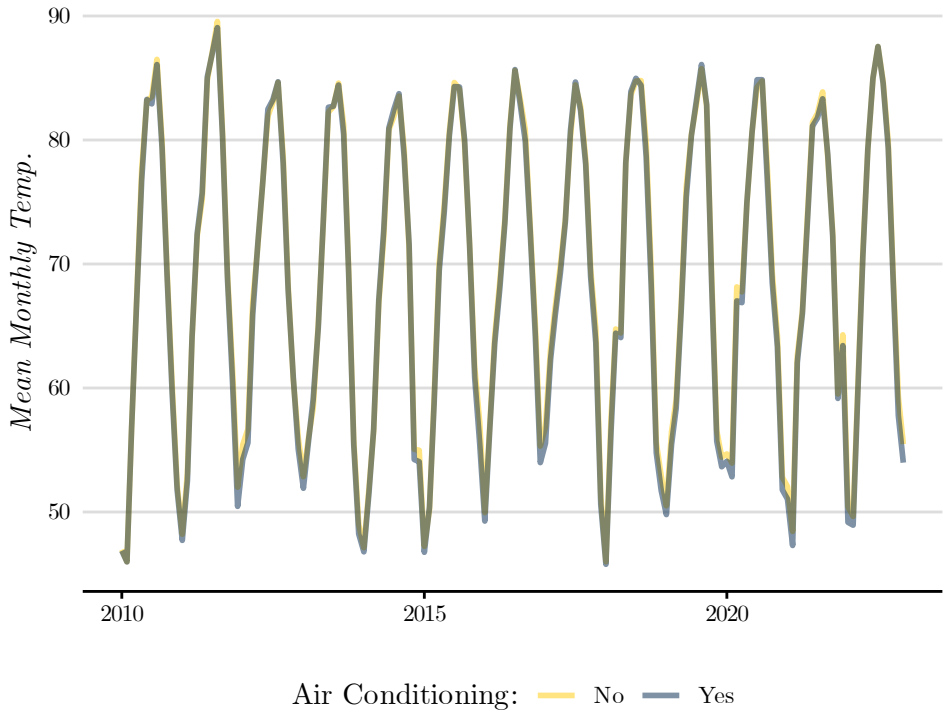
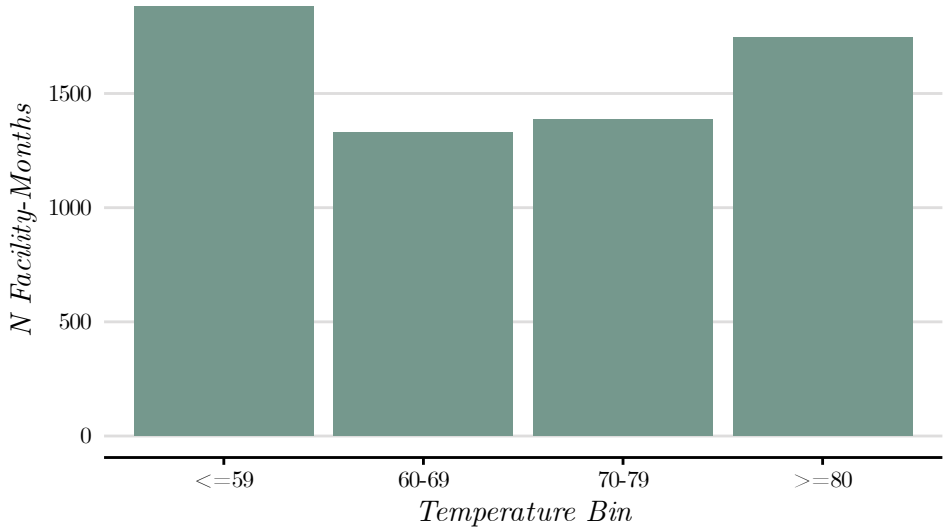


Figure C.2 – Distribution of Facility-Months by Temperature Bin Shows the number of facility-months that fall in each of the temperature bins.



C.2 Additional Results

Table C.1 – Supervisors in Prisons Without AC No More Likely to Depart
Replicates tests in Table 4.1 using supervisors rather than frontline correctional officers.

	Pre-COVID	COVID
No AC	1.05	0.90
	[0.92; 1.19]	[0.71; 1.13]
60-69F	1.04	1.50*
	[0.81; 1.34]	[1.01; 2.22]
70-79F	1.05	2.59*
	[0.73; 1.50]	[1.47; 4.56]
>=80F	1.03	3.86*
	[0.65; 1.62]	[1.89; 7.90]
Unemployment Rate	1.03	1.01
	[0.99; 1.07]	[0.95; 1.07]
White	1.14*	1.28*
	[1.05; 1.25]	[1.11; 1.48]
Monthly Salary ($1k)	0.79*	0.92
	[0.72; 0.87]	[0.81; 1.06]
Age	0.86*	0.90*
	[0.84; 0.89]	[0.85; 0.94]
Age^2	1.00*	1.00*
	[1.00; 1.00]	[1.00; 1.00]
Male	0.84*	0.85*
	[0.77; 0.92]	[0.73; 0.98]
Pct staffing change	1.01*	0.99
	[1.00; 1.02]	[0.98; 1.00]
Year built	1.00	1.00
	[1.00; 1.00]	[1.00; 1.00]
N incarcerated (100)	1.00	1.01
	[1.00; 1.01]	[1.00; 1.02]
Tenure FE	✓	✓
Month FE	✓	✓

* Null hypothesis value outside the confidence interval.

Table C.2 – Correctional Officers More Likely to Depart from Prisons Without AC, 2010 - 2023 Replicates main results in Table 4.1 using the full dataset from 2010 to 2023.

	(1)
No AC	1.09*
	[1.05; 1.14]
60-69F	1.03
	[0.96; 1.10]
70-79F	1.10
	[0.99; 1.21]
>=80F	1.13
	[0.99; 1.28]
Unemployment Rate	1.00
	[0.99; 1.01]
White	1.27*
	[1.23; 1.30]
Monthly Salary ($1k)	0.74*
	[0.72; 0.77]
Age	0.91*
	[0.90; 0.91]
Age^2	1.00*
	[1.00; 1.00]
Male	0.87*
	[0.84; 0.89]
Pct staffing change	1.00*
	[0.99; 1.00]
Year built	1.00
	[1.00; 1.00]
N incarcerated (100)	1.01*
	[1.01; 1.01]
Tenure FE	✓
Month FE	✓

* 1 outside the confidence interval.

Figure C.3 – Predicted Probability of Departing, by Month of Year Shows the average marginal effect of working in a prison without air conditioning by month of the year. Data is from before March 2020. Each facet includes a subset of data: frontline correctional officers with 0-2, 3-5, and more than 5 years of experience, and all supervisors regardless of experience level. The model excludes temperature and monthly fixed effects. Time is modeled using an annual fixed effect. Results calculated using `marginaleffects` R package using control variables set to their observed values.

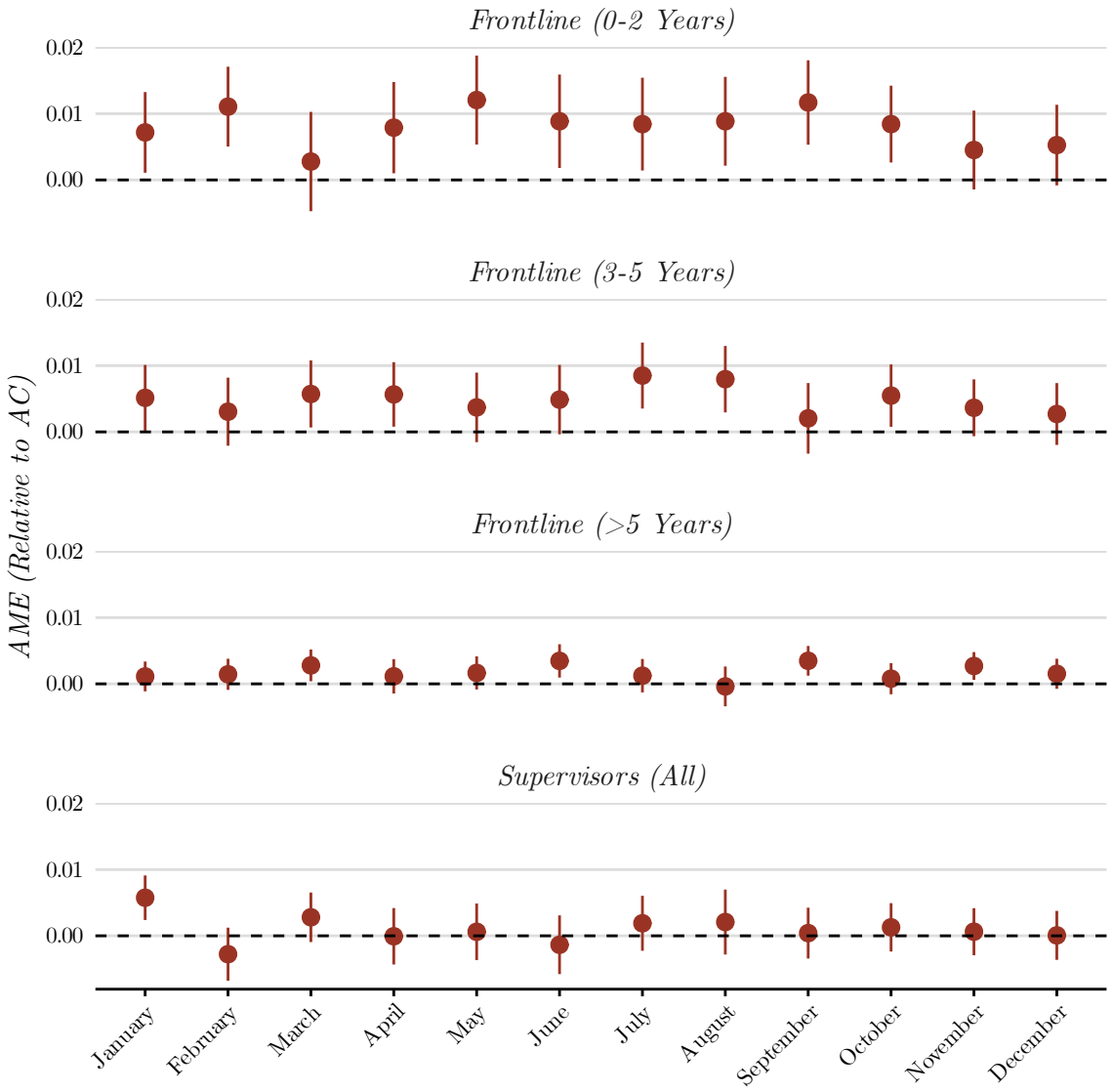


Figure C.4 – Departures More Likely in Hotter Months Shows the average marginal effect of the average monthly temperature being in the 60s, 70s, and over 80 (relative to the 50s or lower) by air conditioning status. The facets indicate employees' years of experience. Results calculated using `marginaleffects R` package using control variables set to their observed values. Data is from before the pandemic. Figure C.6 shows results from during the pandemic.

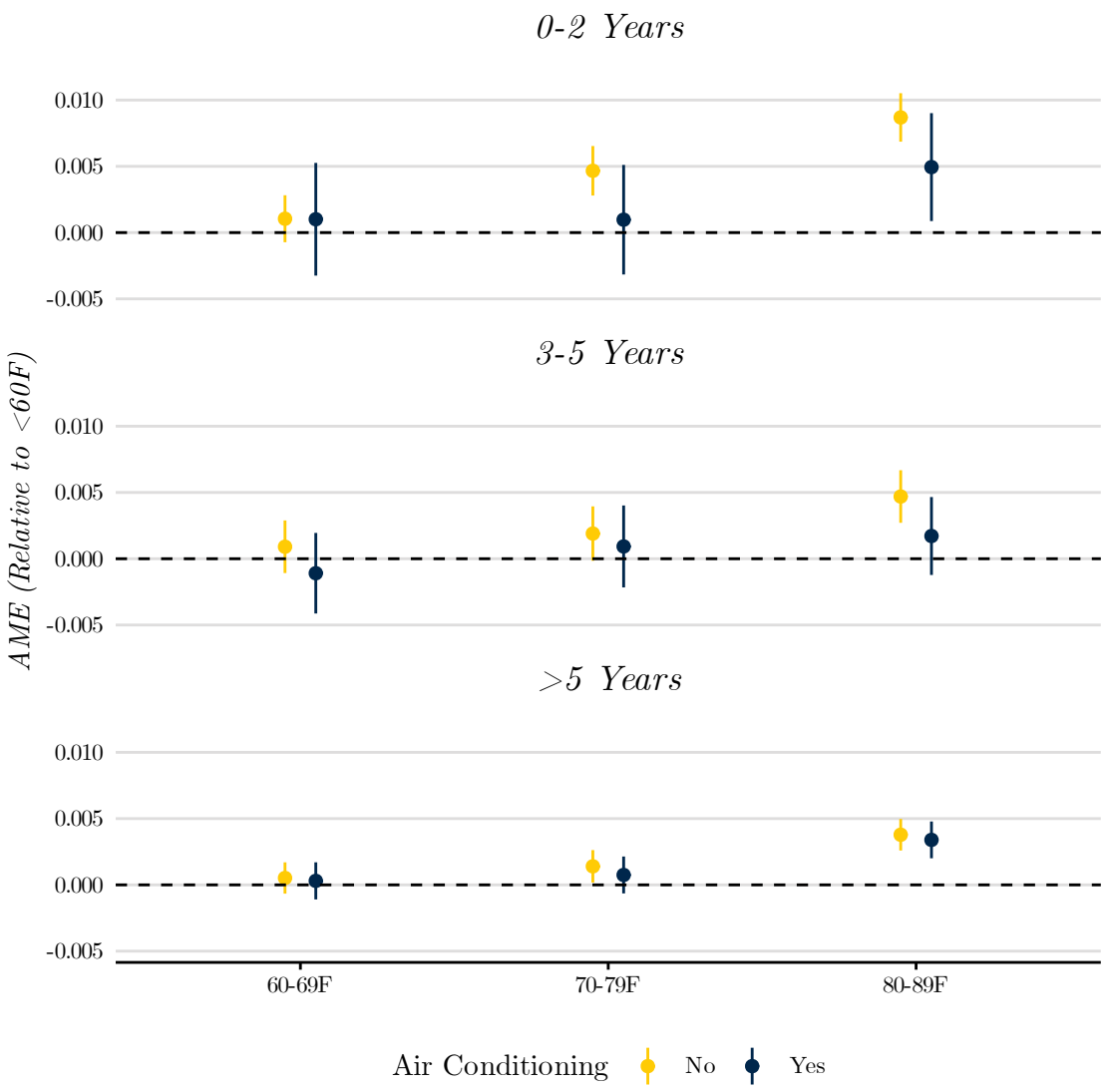


Figure C.5 – Departures More Likely in Hotter Months, but Little Difference Across Air Conditioning Types (COVID-19) Shows the average marginal effect of the average monthly temperature being in the 60s, 70s, and over 80 (relative to the 50s or lower) by air conditioning status. The facets indicate employees' years of experience. Results calculated using `marginaleffects R` package using control variables set to their observed values. Data is from after March 2020.

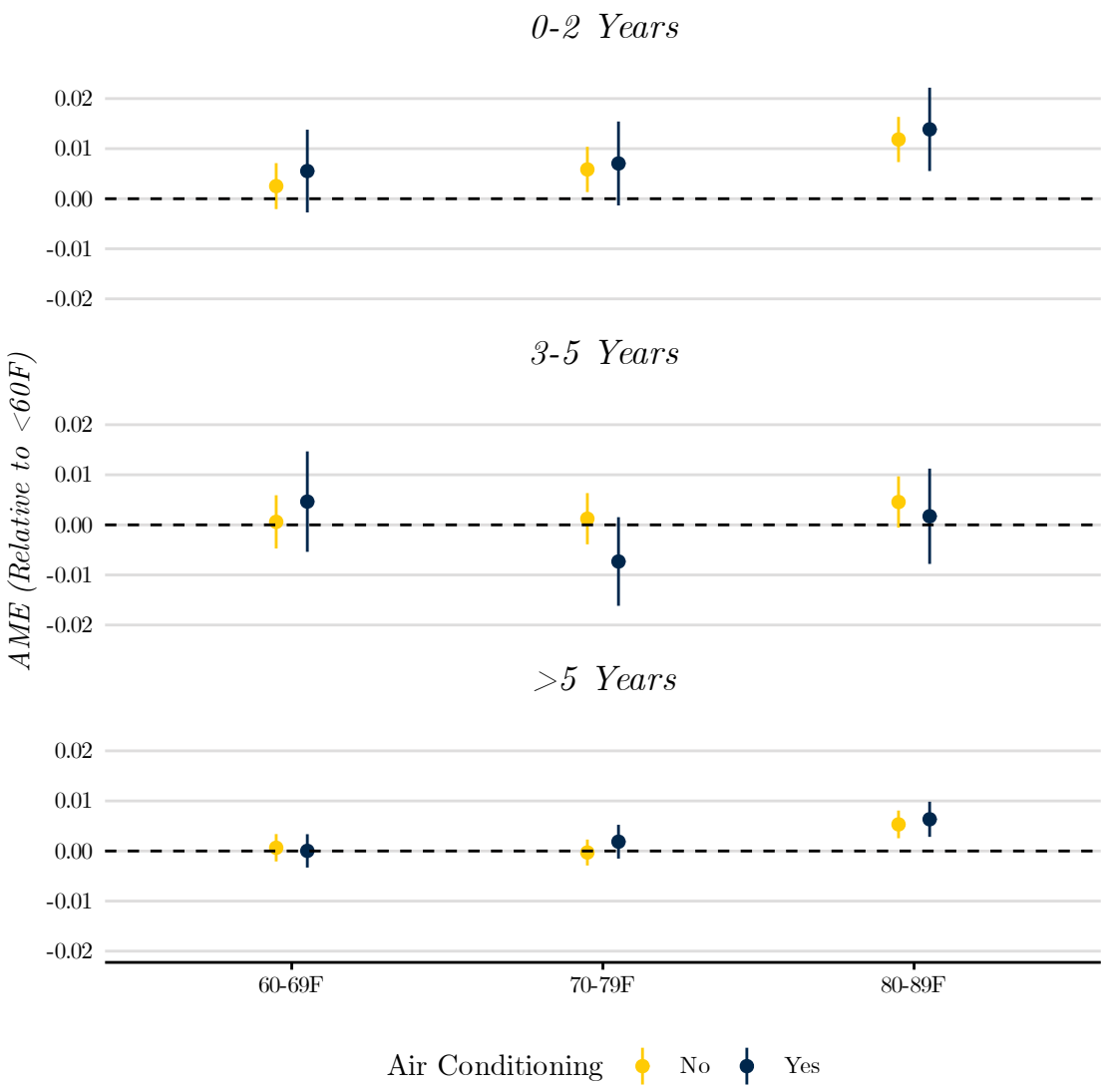


Figure C.6 – No Difference in Departures as Temperatures Increase Following Onset of COVID-19 Replicates Figure 4.5 using data from March 2020 through January 2023. Results calculated using `marginaleffects R` package using control variables set to their observed values.

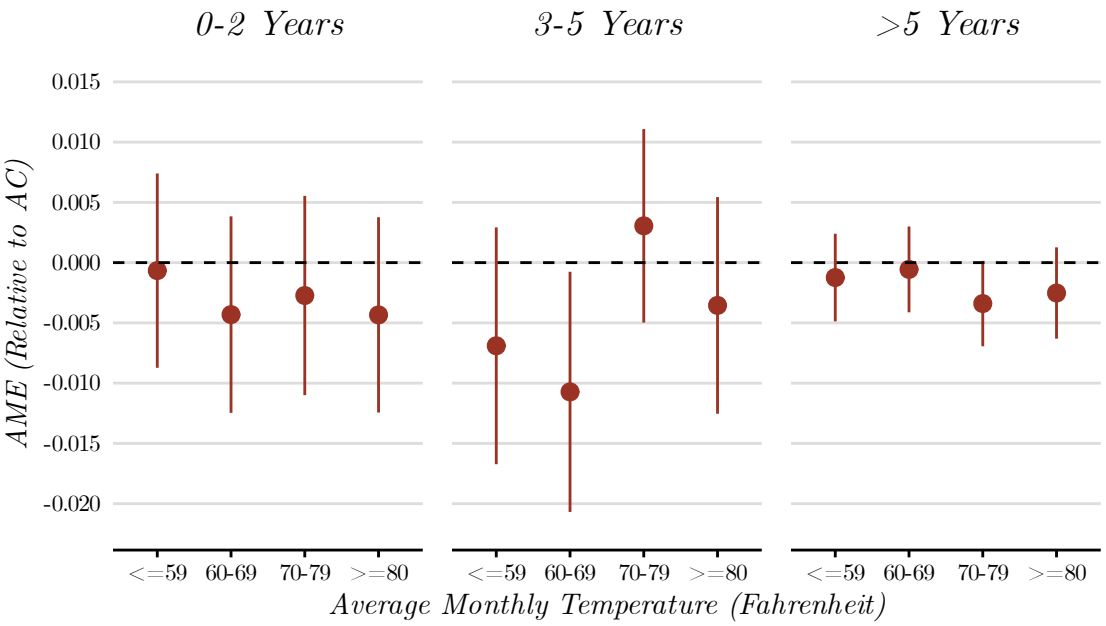
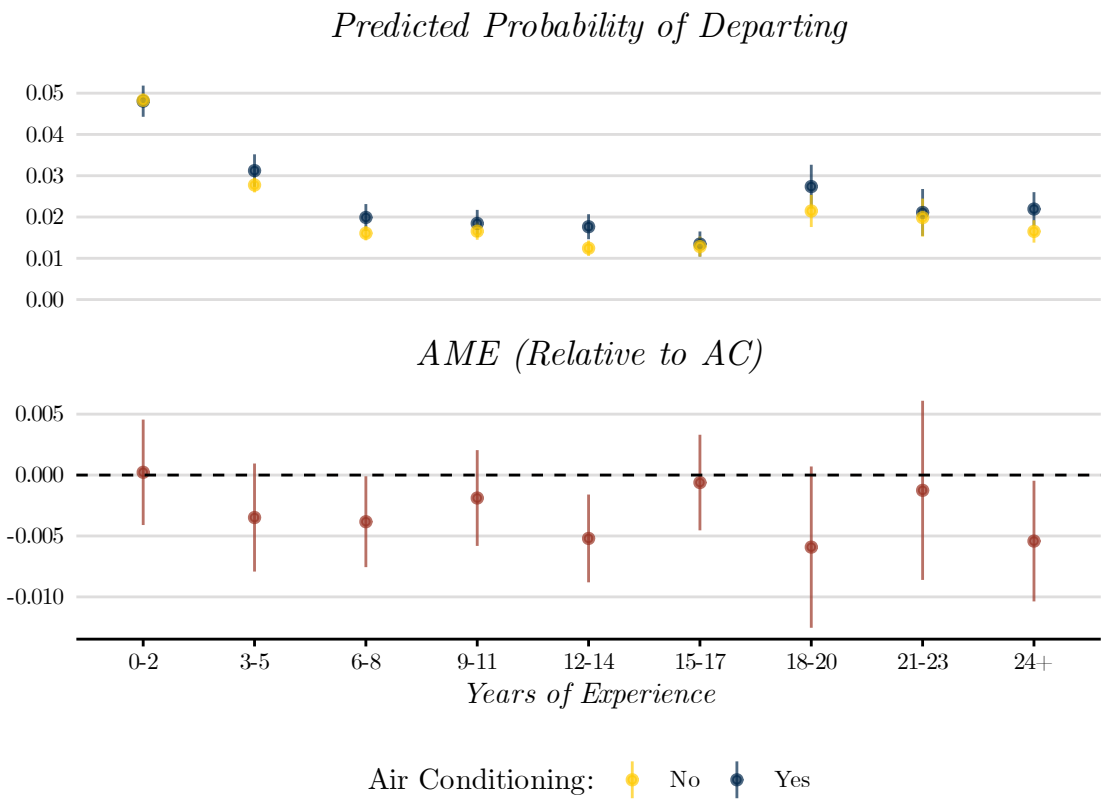


Figure C.7 – Air Conditioning Does not Lead to More Departures Among Newly Employed Following COVID-19. Replicates Figure 4.4 using data from March 2020 through January 2023. Results calculated using `marginaleffects R` package using control variables set to their observed values.



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