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ELECTIONS, IDEOLOGY, AND TURNOVER IN THE U.S. FEDERAL GOVERNMENT

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ABSTRACT

A defining feature of public sector employment is the regular change in elected leadership. Yet, we know little about how elections influence careers. We describe how elections can alter policy outputs and disrupt civil servants' influence over agency decisions, potentially shaping their career choices. We use new data on federal career records between 1988 and 2011 to evaluate how elections influence turnover decisions. We find large levels of stability in the civil service but also pockets of employees that are responsive to presidential transitions. Senior career employees in agencies with views divergent from the president's appear most affected. In the first three years of an administration, political factors such as elections, policy priorities, and political ideological differences, are estimated to increase turnover in the senior civil service by 30.9% in some agencies. We also find suggestive evidence that vacancies in high-level positions after elections may induce lower-level executives to stay longer in hopes of advancing.

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During President Trump's first year, numerous media outlets relayed stories about senior civil servants departing government (e.g., Friedman et al. 2017; Rein and Ba Tran 2017). According to accounts, the departures were particularly pronounced in agencies such as the Department of State and the Department of the Interior whose policies were perceived as out of step with the new administration. The entire senior management team at the State Department resigned rather than work for the new president (Buncombe 2017). A number of civil servants in Interior quit in frustration after Secretary Ryan Zinke noted that his department had "30% of the crew that's not loyal to the flag" and reassigned scores of the agency's most experienced executives to less desirable positions (Rein and Ba Tran 2017; Halper 2018).

The visibility of departures during the Trump transition raises the important question of how elections influence career decisions in the civil service and whether these stories are part of a more general phenomenon. One of the defining features of public sector employment is the regular change in executive leadership that coincides with the electoral cycle. Elections can bring dramatic changes to the work environments of federal employees, from refocusing the mission of organizations to the basics of personnel policy (e.g., hiring freezes, new civil service rules). Do elections create high levels of turnover among career civil servants?

The consequences of electoral politics are potentially important since departures can diminish expertise in administrative agencies and damage their ability to carry out key

functions.[1] Substantial turnover in any organization can delay long term planning and disrupt team production. The consequences of failure in government, however, are often more dramatic and widely felt for people outside the organization. Veterans do not get good health care and retirees wait months for benefits. Dangerous problems with infrastructure fester and foreign hot spots simmer as the people that once worked on solving these problems depart.

Congress created the civil service to minimize the disruptions associated with elections, specifically the rotation in office associated with the spoils system (Van Riper 1958). Today, the federal government loses close to 3,000 of its top managers every time a new president takes office as virtually all political appointees from the previous administration depart prior to inauguration (Pfiffner 2010). Against this backdrop, career civil servants serving as deputies to these top appointed officials provide the long term stability for the federal government. They serve as a buffer between elections and the need for continuous operations of government. If these deputies depart along with the appointees, the stability and performance of the entire government is potentially affected.

Unfortunately, we know little about the effect of elections on turnover outside of appointees. This is surprising since the feature of public sector employment that arguably distinguishes it most from work in other sectors is the regular presence of politics and elections in determining the leadership and direction of the organization. While important work has examined the influence of different factors on turnover in the civil service (e.g., work-life balance, communication, engagement), scholars have paid less attention to the influence of

[1] There is a large literature on this relationship in the private, not-for-profit, and public sectors (see, e.g., Bolton, Potter, and Thrower 2016; Boylan 2004; Hancock et al. 2013; Hausknecht and Trevor 2011; Heavy et al. 2013; O'Toole and Meier 2003; Park and Shaw 2013; Shaw 2011).

politics on turnover among public sector employees in the United States (see, however, Bertelli and Lewis 2013; Chen and Johnson 2015; Doherty et al 2016).[2] Fewer still have examined how elections and transitions in particular influence the career choices of federal employees.[3]

We take up these questions in this paper. We use two new Office of Personnel Management datasets on the careers of federal employees between 1973 and 2014 to evaluate these effects. The results demonstrate that presidential transitions increase the departure rates of some senior federal employees but have little effect on agency workforces as a whole. We also show that turnover is somewhat higher in liberal agencies under Republican presidents and conservative agencies under Democratic presidents. The estimated effects are largest for the most senior employees in the government and at the start of new presidential administrations.

These empirical findings provide insights into the role that elections can play in the career decisions of some government employees. While we find large levels of stability in the civil service in the face of electoral turnover, transitions do appear to affect career decision-making at least in part for high level career employees, particularly in agencies that are ideologically-distant from the new president. Overall, the results have important implications for

[2] For works exploring civil service turnover after government changes in other contexts see Akhtari et al. n.d.; Boyne et al. 2010; Christensen et al. 2014, Ennser-Jedenastik 2014a.

[3] While there is widespread acceptance of the role of elections in the careers of political appointees (see, e.g., Dickinson and Tenpas 2003; O'Connell 2009; Wood and Marchbanks 2008) and an important literature examining the relationships between appointees and career civil servants (Aberbach and Rockman 1976; Michaels 1997; Golden 2000; Heclo 1977; Resh 2015), little work examines how these career events shape the choices of civil servants.

our understanding of presidential politics, bureaucratic effectiveness, public policy, and expertise in the federal government.

Political Dynamics and Employee Turnover

Given the importance of turnover for agency capacity and the successful implementation of public policy, scholars have carefully studied its causes and consequences. In particular, past research has focused on a number of organizational factors, features of employee job contexts, and individual characteristics that predict turnover. The organizational factors include characteristics of agencies themselves such as agency prestige, structure, management practices, and culture (Gailmard and Patty 2007; Kellough and Osuna 1995; Pitts et al. 2011; Wilson 1994).

Looking inside organizations, scholars have examined features of the employee's job and work environment—e.g., training, diversity of the workforce, engagement, clarity of goals, accountability—that influence departure choices (Bertelli 2007; Kim and Fernandez N.d.; Moynihan and Pandey 2007). Perhaps most visibly, they have examined how the presence of outside options and wage differentials influence departure choices. Turnover choices are influenced by the expected stream of compensation inside and outside the agency. The gap between expected public and private sector wages is determined partly by whether employees' expertise is valued differentially in the public or private sector (e.g. Borjas 1982; Boylan 2004; Grissom et al. 2015; Ippolito 1987, Cameron et al 2016). Relatedly, the structure of the labor contract (e.g., pay for performance; Bertelli 2007), unionization (Chen and Johnson 2014), and employee-agency fit in the larger labor market influence career choices (Bertelli and Lewis 2013; Cameron et al. 2015). Non-monetary forms of compensation controlled by the agency,

such as group affinity or work-life balance, can also influence job satisfaction and the choice to stay or leave (e.g. Grissom et al. 2015; Saltzstein et al. 2001).

The propensity to stay or leave also varies by individual and is correlated with characteristics of employees themselves. Researchers have explored the influence of age or experience (e.g., retirement eligibility, pension vesting), gender, and race on turnover (Ippolito 1987; Lewis 1991; Lewis and Park 1989; Moynihan and Landuyt 2008; Pitts et al. 2011). Scholars have also evaluated the impact of different individuals' public service motivation on factors related to turnover and turnover directly (see, e.g., Bright 2008; Caillier 2011; Gamassou 2015). Collectively, these works provide a rich and complex picture of the different factors that influence turnover decisions across agencies, work groups, and individuals.

Despite the salience of politics for public sector work, fewer studies explore how politics itself influences turnover. Some research examines how political intervention into administration and policy disagreement between career employees and the administration influences turnover (e.g. Brehm and Gates 1997; Cameron et al. 2015; Gailmard and Patty 2007; Golden 2000; Richardson 2016; Wilson 1994). In this paper, we extend this work to examine how changes in the political environment brought about by elections and transitions of power influence the turnover decisions of career bureaucrats in a systematic manner. Examining the influence of elections on turnover has been difficult because existing survey data on employee careers and turnover intention is cross-sectional and observational data on individual employee careers has been limited (see, however, Chen and Johnson 2015; Doherty et al. 2016). In this paper, we make use of unique new observational data on all civilian employees working in non-defense agencies over 24 years to examine this question systematically.

Do Elections Influence Turnover Decisions?

The advent of a new presidential administration can lead to significant policy changes and alterations in employee influence within agencies. Major party candidates run on platforms promising policy changes. Candidates bolster their case with promises of governing with teams that will take power away from unelected bureaucrats. Almost all candidates promise to improve economy and efficiency in government, cutting expenses and improving performance. The actions that follow these promises may have predictable effects on the stay or leave choices of federal employees. We delineate how elections may or may not influence these choices below and more formally in a decision theory framework in Appendix A.

What Civil Servants Want

Understanding the turnover decisions of career employees first requires a set of assumptions about the utility they derive from government service. We assume that bureaucratic utility depends upon three primary factors: the degree to which employees are able to influence policy, the policy outputs of the agency relative to the employee's ideal policy, and pecuniary rewards (i.e., wages and benefits). Specifically, we assume:

$$u_{ij} = \lambda_i \omega_{ij} - (1 - \lambda_i)(\hat{x}_a - x_i)^2$$

where bureaucrat i's utility in period j, is dependent upon their wages and benefits (ω_{ij}), the squared ideological distance between the policy implemented by the agency and the bureaucrat's ideal point, $\hat{x}_a$ and x_i respectively, and the degree to which individuals value wages and benefits over policy outcomes, which is increasing in $\lambda \in [0, 1]$. In the public sector, particularly at the higher levels, individuals have influence over the policy choices of their agency. As such, the agency's ultimate policy,

$\hat{x}_a$, is a function of a base agency ideal point (e.g., one chosen by the president) and the ideal point of the bureaucrat, weighted by the policy influence of the bureaucrat (which is increasing in $\alpha \in [0, 1]$), so that $\hat{x}_a = \alpha_{ij} x_i + (1 - \alpha_{ij}) x_a$.

Within this formulation it is notable that, in addition to wages and benefits, we assume that federal employees value the ability to influence their workplace and its choices (α), particularly since agency actions involve the exercise of public authority (Perry and Wise 1990). The choices of federal employees become increasingly influential in their organizations as they advance in their careers (e.g. Brehm and Gates 1997; Downs 1967; Gailmard and Patty 2007). However, the degree of delegated authority and policy input that career employees enjoy may be curtailed even for high level employees if administrations distrust careerists and cut them out of substantive processes (Heclo 1977; Resh 2015).

Federal employees also care about public policy outcomes. Working in government gives policy issues a salience rarely shared by other voters, particularly about issues in employees' own agencies. Further, federal employees often self-select into agencies on the basis of their own support for an agency's mission (e.g. Clinton et al. 2012; Kaufman 1960, 1981). This influences the composition of the workforce and the views of agency employees and engenders support for agency mission over any change a new administration might bring (Aberbach and Rockman 1976; Golden 2000; Kaufman 1960, 1981). For example, environmentalists are more likely to seek employment in the Environmental Protection Agency than the Office of Surface Mining. It is important to many employees in these agencies that the leadership makes choices that help the organization fulfill its mission (Hult and Maranto 2010). The policy choices of the agency overall can have a significant influence on the attractiveness of public sector employment relative to other options.

Of course, civil servants care about wages and benefits like workers outside the public sector (ω_{ij}). Many start and stay in government because of attractive wages and benefits, both monetized and non-monetized (e.g., prestige, flexibility, security). A public sector employee's stay or leave decision will be determined by how her utility for public sector work compares to life outside government. The basic structure of the utility outside government is the same except that the wages and benefits will be different and the bureaucrat will presumably have no influence over agency policy from outside of government. Significant shocks to the utility bureaucrats get from working in the public sector—whether influence, policy, or compensation—may influence departure rates in predictable ways. However, whether these shocks are enough to impel employees to leave their jobs – a major life decision that entails substantial costs in its own right – is less clear.

Elections and Changes in Employee Utility

Presidential elections and transitions lead to disruptions in the allocation of influence within agencies and policy changes. New presidents quickly assert control of the executive establishment through agency review teams established during the transition and by bringing new decision makers into government (Jones 1998; Pfiffner 1996, 2010). These individuals, whether White House staff or political appointees, decide whether to delegate important authority to continuing professional personnel.

Administrations may be reticent to delegate, particularly when career professionals worked closely with a previous administration. Many presidents enter office wary that career bureaucrats are, as President Nixon evocatively described, "…dug-in establishmentarians fighting for the status quo…" In response, some presidential appointees shut careerists out of key policy decisions or pushing them away from the locus of decision-making (e.g. Light 1995;

Nathan 1975; Pfiffner 1987; Resh 2015). This behavior, broadly characterized by the tools of the administrative presidency, diminishes the policy control and influence of career employees.

Career professionals on the receiving end of suspicion or marginalization by a new administration may experience a dramatic change in their work life. Career executives accustomed to deference and empowered with authority are suddenly bypassed and excluded. For some agencies, the new administration will take these actions to stop existing policies and initiate new ones more congruent with the administration's preferences. This loss of policy control corresponds to a decreasing α in the equation above, making the overall utility for the bureaucrat increasingly negative. Holding the value of private sector work constant, we would expect that the effects of a new administration on both policy and influence will increase departures after elections on the margin.

However, the effect of a new administration will not be felt equally across the executive establishment. The impacts of transitions are most perceptible in agencies where the new administration wants to dramatically alter policy. There is significant variation across the government in the ideological orientations of agencies and their employees (e.g. Bertelli and Grose 2011; Chen and Johnson 2015; Clinton et al. 2012). The election of a new liberal or conservative president will influence the policy choices of agencies differently depending upon the policy orientation of the agency, its employees, and its mission. For example, a new Republican president may instruct the Environmental Protection Agency to reduce regulatory burdens and rely on voluntary programs to reduce emissions or the release of pollutants. For other agencies, a new president may simply emphasize some agency priorities over others. A new Democratic president, for example, might instruct U.S. attorneys to be more attentive to election law violations that keep voters from the polls rather than violations that suggest

fraudulent access to the polls. Given that career employees have policy preferences and often select into agencies with missions in line with those preferences, ideological divergence between the new president and the general ideological orientation of the agency will lower the relative utility of government work. For instance, in the equation above as the distance between $\hat{x}_a$ and x_i increases, the policy utility the bureaucrat gets is increasingly negative, reducing the relative attractiveness of government work.

In addition to impacting the utility of the bureaucrat directly through policy, the effects of ideological mismatch are likely also indirectly felt through their impact on policy control. In particular, a well-known result of principal-agent models is the "ally principle," which suggests that as preference divergence between principals and agents increases, principals delegate less often to agents and decrease agent discretion when doing so (see Bendor and Meirowitz 2004 for an overview). These theoretical results have been supported empirically in the study of the administrative presidency. For instance, Lewis (2008) demonstrates that politicization increases in ideologically divergent agencies. This suggests a further reason to expect a link between turnover and ideological mismatch.

If new administrations decrease the policy influence of career professionals or dramatically change policies in ways civil servants do not prefer, this should increase departures. Of course, the vast majority of bureaucrats have little influence over the policy choices of their agency. Further, most federal employees do not regularly interface with political appointees or other members of the administration. Because of this, the effects of an administration change will be most felt by bureaucrats with the greatest influence over and proximity to policy making (Aberbach and Rockman 2001; Golden 2000; Hult and Maranto 2010). Employees fitting this description will tend to be those that are nearest to the top of the managerial hierarchy in the

agency, such as members of the career Senior Executive Service. This is not to say that the political dynamics we describe could not diffuse throughout an entire organization (e.g., Resh 2015). However, the effects of presidential transitions and new administrations will be *most* perceptible to more senior individuals given their positions in the agency as well as the nature of their jobs.

Thus, to summarize, if elections and transitions are an important factor in shaping turnover behavior, we would expect to find that transition periods will be associated with high levels of turnover, turnover would increase in agencies with missions that are ideologically divergent from the new president, and that these effects would be most concentrated among high-level employees that had policy influence in the previous administration.

However, there are strong reasons in favor of the null hypothesis as well, i.e. elections and transitions would have no impact on turnover. First, bureaucrats may take alternative actions when dealing with a new administration. While we focus on turnover in this paper, other work suggests that employees may alter their behavior in different ways. Golden (2000) finds that in the Reagan-era bureaucracy many federal employees did not leave but rather remained in agencies, either speaking out and resisting changes or loyally (or passively) implementing the president's policies. This may be due to institutional loyalty, perceptions of the role of civil servants as politically neutral, or public spiritedness (e.g. Dilulio 1994; Rom 1996). In these cases, employees may seek to remain in government in the face of presidential opposition to their work to affect policy outcomes "from the inside" by either shaping their development or resisting their implementation. If these alternative behaviors predominate, then we should not see regular patterns following transitions.

Second, it is possible that transitions in administrations, while having perceptible effects on federal employees, may nonetheless be insufficient for providing the motivation for them to exit the government. Leaving a job is a major life decision that leads employees to incur substantial transaction costs, as they search for a new job, potentially relocate, navigate a new work place, and so on. Elections, while perhaps lowering utility for some sets of employees, may not be a strong enough stimulus for employees to actually depart. If that is the case, then we should expect to see broad patterns of stability and relatively small effects of elections. We now turn to examining these questions empirically.

Data, Measurement, and Modeling

To evaluate the effects of elections and politics on employee turnover, we use data from the Office of Personnel Management's Central Personnel Data File (CPDF) and Enterprise Human Resources Integration system (EHRI) from 1988-2011.[4] This dataset includes the personnel records from 3,511,824 employees that served in the federal government during the period of our study.[5] The comprehensiveness of the data allows for the estimation of effects within relatively small segments of the government with confidence. The dataset includes important demographic indicators (including race, gender, and age) as well as human capital information. Information about an individual's a work, including their occupation, salary,

[4] In the appendix, we also replicate our models on a related dataset that covers the time period 1973-2014 but lacks a number of the control variables we use in the main text (Table B11).

[5] This dataset does not include the Department of Defense, Navy, Army, and Air Force. Additionally, individuals that work in classified roles, sensitive agencies, and sensitive occupations (as defined by OPM) are excluded.

supervisory status, and their organization, is also in the dataset. Further, the records are longitudinal, allowing us to characterize an individual's career dynamics, and importantly, when they exit the federal government. The unit of analysis in our study is the employee-year, which reflects the structure of this dataset. We exclude all political appointees from the analyses in this paper.

The key dependent variable we examine in this analysis is turnover. We define an employee as turning over in a given year if it is the last one in which they appear in the CPDF-EHRI data. We have conducted sensitivity tests on this measure of departure and find it to be robust in the data.[6]

[6] In the vast majority of cases, this corresponds to employee exit from the federal government. One caveat, however, is that if an employee transitions into a sensitive occupation or to an agency that is not included in our dataset (e.g. the Central Intelligence Agency or the Postal Service), they may be mistakenly coded as turning over. There is no way for us to distinguish these cases. However, there is no clear reason to believe this type of career transition is correlated with the variables we examine in this analysis or is a widespread phenomenon.

One may also be interested in the degree to which individuals may be moving in and out of government and how they are affecting the results of the analysis. While the dataset cannot tell us anything about why certain individuals leave the government for short periods and come back, we are able to identify individuals with discontinuous service. When we estimate models excluding individuals with discontinuous service, the results are unchanged.

Another form of exit that might be of interest would be transfers among agencies. Unfortunately, transfers are often ambiguous in the dataset and sometimes indistinguishable from reorganizations of employees. Further, we note that previous studies of top level officials in the

To examine average turnover rates in response to transitions, we create a dummy variable that takes the value "1" in the first year of a presidential administration (i.e. 1989, 1993, 2001, and 2009) and is coded as "0" otherwise. One might also think that administration changes may vary in terms of their impacts on employees. In particular, changes in the party of the administration may be more likely to have the effects discussed above if appointees from a new party are more suspicious of careerists that were in government during the previous administration. Because of this, we also examine these partisan transitions (that is, 1993, 2001, and 2009) in an alternative analysis (Table B1).

We use agency ideology scores developed by Clinton and Lewis (2008) to evaluate whether turnover responds to divergence between the ideological orientation of an agency's mission and presidential ideology. They are derived from surveys of experts on the federal bureaucracy who were asked to rate the ideology of a wide range of federal agencies as liberal, conservative, or neither during the period 1988-2005, which overlaps substantially with the period of our study. These ratings were then used in a multirater item response model to create ideology scores for each agency on a unidimensional scale. Following other work using these scores, we segment agencies into three groups – conservative (where the entire 95% credible interval of the ideology estimate is greater than zero), moderate (where the 95% credible interval includes zero), and liberal (where the 95% credible interval is wholly less than zero). Agencies are coded as being "ideologically mismatched" if they are conservative during a Democratic presidency or if they are liberal during a Republican presidency.

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government have found low transfer rates. For instance, a report by the Partnership for Public Service (2009) found that only between 1.8% and 2.3% of SES employees had left their jobs for another agency during their careers.

We believe that these are the best ideal points for this application for a number of reasons. They capture the general ideological orientation of an agency and its mission, which is a key attribute of agencies described in the theoretical discussion. They are also designed to capture a long time period that substantially overlaps with our dataset. Ideal points based directly on the preferences of individuals within agencies (e.g. Bonica, Chen, and Johnson 2015; Chen and Johnson 2015; Clinton et al. 2012) are endogenous to behavior about whether employees stay within or leave government, which would potentially confound the results of the analyses below. Second, other ideal points (such as Clinton et al. 2012 and Bertelli and Grose 2011) do not have nearly the coverage in terms of time or agencies.

If elections and transitions are truly shaping the incentives of bureaucrats, the relationship between mismatch and turnover should be the largest in the initial years of a new administration. New presidential administrations are generally suspicious of the bureaucracy in the early years of power when presidents seek to move their agendas with the greatest vigor. To examine the possibility that the effects of ideological mismatch may be greater at the start of an administration, we estimate an additional set of models where we interact the mismatch variable with year of term indicators to allow the effect of mismatch to vary by year. Support for this hypothesis would provide further evidence on the specific role of presidential transitions in influencing these dynamics.

Examining whether employees at different levels of the administrative hierarchy are differentially responsive to elections requires us to separate out employees by levels of policy influence. We consider four groups of employees in all of the analyses below: the career Senior

Executive Service (SES), individuals in supervisory roles,[7] General Schedule (GS) employees in grades 13-15, and all employees.[8] We expect the career SES to have the most policy influence and work in closest proximity to political appointees and members of the president's administration. GS 13-15 employees as well as those in supervisory roles are less likely to have policy influence relative to the career SES, but they still may be involved in policy decisions and sometimes interface with administration officials. We expect that the final group, all employees, to have the least level of policy influence and be the least directly affected by transitions.

In addition to the key independent variables discussed above, we also include a number of control variables in our analyses that could also impact the propensity of employees to leave the government and confound the relationships between turnover and our key theoretical variables. First, to measure outside options[9] we use seasonally adjusted September

[7] The supervisor category is fairly broad and definitions have changed over time. We code individuals that are designated as "supervisor or manager," "supervisor (CSRA)," "management official (CSRA)," "leader," or "team leader" in the OPM dataset as supervisors in our analyses.

[8] An alternative method would be to interact the Year 1 and Mismatch variables with indicators for each group, resulting in a specification with six interaction terms (and two omitted ones). We opt for this setup described above to ease interpretation, which would be made more difficult by the fact that these groups are not mutually exclusive. It also has the added benefit of allowing other coefficients to vary by group as well, lending greater flexibility to the analysis and relaxing equal coefficient assumptions across groups. The results of models with interactions, however, do corroborate those presented below.

[9] One possible concern is that the labor market itself may be endogenous to elections. For instance, electoral transitions may increase the value of public sector experience and thus the

unemployment rate in the states where employees work (only 15% of employees work in the Washington, DC metro area).[10] We use unemployment as a proxy for labor demand in the area where an employee works. We expect that turnover is decreasing in this variable (i.e., high unemployment corresponds to fewer outside options). We also include fixed effects for 803 different occupations. These fixed effects account for time invariant occupation characteristics that may impact turnover, such as private-public wage differentials for given occupations or the premium placed on government experience in a given occupation.[11]

We account for differences in presidential priorities using data from president's State of the Union (SOTU) address. The Policy Agendas Project matches each statement in the president's address to a particular policy area. Each year in our dataset there are between 37 and

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wage premium firms are willing to pay to high level career employees. If true, we would expect that these effects are likely most salient in the Washington, DC/Virginia/Maryland areas where the influence industry is based. To test this, we first included fixed effects for the location of an employee's office but find that this does not alter the results reported here. Second, we interacted an indicator for working in the DC/VA/MD area with the key independent variables. Though the results are inconsistent, we find that, if anything, employees in these areas may be somewhat less sensitive to transitions (see Table B10 and B11 in the appendix).

[10] We collected unemployment data from the Bureau of Labor Statistics' Local Area Unemployment Statistics Reports for 1988-2011.http://www.bls.gov/lau/.

[11] We have also estimated models including fixed effects for combinations of more than 800 occupation codes with geographic locations (e.g., lawyers in Tennessee; see Tables B3-B4 in Appendix B) as a reasonable way of controlling for the labor market for these employees. The results in these specifications are similar to what is reported in the main text.

396 coded policy statements, depending upon how long the speech is. We coded each agency's primary policy area and computed the number of statements made by the president pertaining to that policy area in a given year as a proportion of all statements. We use the natural logarithm of this measure plus one because it is right-skewed. For instance, the FDA is coded under the "health" major topic. In 2010, there were 303 coded policy statements in the SOTU, 27 of which were about health. This amounts to 8.91% of the statements. So the FDA in 2010's priority variable takes the value Ln(1 + 8.91). In general, the modal number of policy statements in an agency's area is zero (hence the need to add one before taking the logarithm), the mean is 6.84%, the median is 4.26%, and the maximum is 57.1%.

We control for demographic factors that have been shown or hypothesized to increase public sector turnover rates (e.g. Moynihan and Landuyt 2008). In all of the regression models reported below, we include the employee's age and its square. Additionally, all models include a dummy variable for whether or not an employee is a woman to capture any potential gender-based differences in turnover. We also include indicators for four racial groups identified by the Office of Personnel Management over time: American Indian/Alaska Native (abbreviated A.I./A.N. in the tables below); Asian; Black; and Hispanic. The omitted category is White.

We also control for educational attainment. The original OPM CPDF-EHRI data divides education level into twenty-two different categories. In the analyses reported below we create a single, continuous measure of educational attainment that corresponds to the number of years past 12th grade completed by employees. This simplifies interpretations, but we also note that including these 22 categories as indicator variables or in a somewhat more aggregated form (e.g. high school, B.A., M.A., etc.) does not substantively alter the results that we report below.

Finally, all of the models incorporate fixed effects for 416 agencies. These fixed effects account for time invariant agency characteristics that may impact turnover, such as agency structure or prestige.

We estimate a series of linear probability models, where the outcome variable is whether or not an employee chooses to leave in a given year.[12] To account for duration dependence, we include a set of dummy variables for the number of years that an individual has been in government (i.e., tenure fixed effects). The estimates for these effects are akin to a baseline hazard rate in a survival model. To capture any global time trends in departure rates, we include a cubic polynomial in time in all model specifications.[13] Finally, to account for the correlated error structure and dependence that exists when observing the same employees in many different years, we cluster all standard errors at the employee level. Additional results, with clustering at the level of agencies and agency-year, are available in Appendix Tables B5 and B6. The results are substantively similar to those reported here, though less precisely estimated for some

[12] We focus on the results of linear probability models primarily because of computational difficulties with Cox proportional hazards models and logistic regressions when using such a large dataset and large numbers of fixed effects for, in some cases, relatively small groups. These factors make the convergence of maximum likelihood estimators difficult and require substantial computing power for estimation. We do provide estimates from probit regressions with the same specification as those reported here as well as somewhat pared down Cox survival models in Tables B6 and B7, with results substantively similar to those reported here.

[13] The results we report are robust to other functional forms for the time trend, including a linear trend or quadratic trend. The results are also not affected by excluding the time trend variable.

coefficients, particularly for the "all employees" and "supervisors" sample frames. We now turn to describing the results of these analyses.

Results

Table 1, below, includes the results of the turnover models described above. All of the results are separated into four groups of employees – all employees, GS 13-15, supervisors, and career SES employees. We include coefficient estimates and *t*-values for all variables. Understanding the results requires a proper sense of scale. The average annual unconditional departure rates for federal employees are low, as they are for employees in most large organizations. The unconditional average departure rates across groups are 6.2%, 4.4%, 5.5%, and 8.0% for all employees, GS13-15, supervisors, and members of the Senior Executive Service, respectively. We focus our attention mostly on departures among senior executives since those departures appear to have the largest effect on policy and performance but include other groups as a useful reference. The results show some evidence of the influence of elections on departures, albeit with some interesting nuance that we describe below. Interestingly, for high level career administrators, the substantive effect of political factors is comparable to factors normally included in studies of exit. For the other groups, however, we see far more stability in the face of transitions and changing ideological patterns.

[Insert Table 1 about here.]

At a general level, models of turnover reveal familiar patterns. As expected, wages and compensation are a significant driver of career choices. When local unemployment is high, federal employees are less likely to leave government, with the exception of GS13-15 employees who seem unaffected by the local economy. A one percentage point increase in local unemployment is estimated to decrease the probability of departure in a given year by anywhere

from 0.1% to 0.3% (depending upon the group of employees examined). In the data, unemployment varies from about 2.2% (Connecticut, September 2000) to 14.0% (Michigan, September 2009) in the data. A 5 percentage point difference in unemployment, either over time or across duty stations is estimated to change departure rates by 0.5% to 1.5%, depending upon the group of employees examined.

The controls reveal a number of other interesting correlates of departure. First, employees working in agencies whose policies are mentioned by the president are less likely to leave government. An increase from the modal value of 0.0% to the mean of 6.84% in the percentage of statements that involve policies carried out by an agency is estimated to decrease the departure rate of federal employees by 1-2% in a year. Employees in agencies on the president's agenda are less likely to depart.[14] Employees in these agencies may stay longer because they have an unusual opportunity to influence new policymaking in the agency, either to set an agenda moving forward or protect gains made in the last administration. Indeed, presidential attention in the State of the Union is often associated with budget increases.

Among the demographic characteristics, there were no consistent effects for gender but in virtually all models, non-whites departed government at lower rates than whites. Not surprisingly, age has a non-monotonic relationship with departure probabilities. Age is initially correlated with lower departures but ultimately increasing departures as employees become more

[14] This effect is not diminished when the employee works in a mismatch agency. In models interacting these terms, the interaction term is not estimated precisely but it is negative, suggesting that employees in mismatch agencies are more likely to stay when their agency's policies are on the president's agenda (see Table B8 in the appendix).

likely to retire. The estimates also reveal that the higher educated are less likely to depart government.

Elections and Turnover

We find a moderately-sized, predictable increase in departures among the most senior civil servants after a presidential election but not at lower levels of organization. We have long observed how elections induce departures among political appointees but the results here reveal an underappreciated level of departures among at least some civil servants as well. Notably, we also estimate somewhat higher departure rates in "mismatched" agencies, though the magnitude of this effect is variable across groups. The career choices of civil servants at the highest levels appear most responsive to changes in policy and influence stemming from elections. Civil servants at lower levels are more insulated from changes brought by elections as expected. In fact, some changes may work to their benefit if the departure of their superiors opens up new job opportunities for them.

We begin with the results of our analyses relevant to estimating the general transition effect. The estimated coefficients for the Year 1 variable are key in this regard. Among two groups of employees – individuals in supervisory roles as well as career SES employees – we see increased turnover. Career SES employees seem to be most sensitive to a new president with an average increase of 1.6 percentage points in the first year of a new administration relative to other years (an increase of 21.1% over non-transition years). The number is eight times smaller for supervisory employees – a 0.2 percentage point increase in the probability of turning over in

transition years.[15] At least for the career SES, these effects are similar in magnitude to factors such as unemployment rates, gender, and education.

To put this in perspective, this means the departure of an additional 110 members of Senior Executive Service (SES) in the first year of a new administration. The estimated departure rate in the SES non-transition years is about 7.7% per year, corresponding to about 539 annual departures out of the corps of 7,000 top career managers. This increases to 9.3% in the first year of a new administration, or about 651 people.

This is obviously not a wholescale hollowing out of the career executive corps. However, it raises concerns that some experienced executives are departing when they are most needed, i.e. when political leadership spots are filled with newcomers or are vacant. To illustrate, consider the dilemma of the Trump administration. At precisely the time the administration was trying to use sanctions to accomplish foreign policy goals in North Korea and Iran, the top sanctions experts in the diplomatic service were departing (Lynch et al. 2018). The analog of the sanctions experts in other agencies is top counterintelligence professionals in the Department of Homeland Security and emergency response executives in the Federal Emergency Management Agency. These executives manage the 2.85 million civilian employees day-to-day across administrations and through transitions.

[15] In other specifications, we examined whether the first year of the administration was associated with the highest turnover rates relative to other years (rather than just higher on average). In the case of career Senior Executives, all other years of administrations (i.e. 2-8) had significantly lower turnover rates. For supervisors, the second year of the administration actually was associated with the highest turnover rate, though the first year had a higher turnover rate than the average year (which corresponds to the reported effects).

Below this level, we see far more stability in the face of transitions, and indeed, results in the opposite direction during the first year. Turnover propensity decreases by 0.1 percentage points for all employees, and by 0.4 percentage points for employees in GS grades 13-15. The effect for all employees is extremely small. The Year 1 effect for GS 13-15 employees is substantively larger (9% decrease relative to the unconditional average departure rate). This effect would be consistent with the idea that high levels of churn in the career SES during the beginning of a new administration, opens new opportunities for promotion for individuals directly below the Senior Executive Service level, leading GS 13-15 employees to stay in the government to vie for these new openings. In this sense, transitions may have the opposite effects on turnover for these mid-level managers.

If the promotion story explains this behavior, we would expect that a significant portion of career SES employees had previously been at the level of GS 13-15. Further, we would expect that employees at the GS-15 level would be particularly likely to stay in government during the first year of an administration. Overall, we found that between 1988 and 2011, 38% of career SES employees had served in a GS 13-15 position at some point. Further, in line with these expectations, we found that GS-15 employees had particularly large, negative estimated effects for the first year when we estimated models separately for that group relative to the 13-15 group as a whole (-0.011 vs. -0.004, respectively). This implies that the GS-15 employees, those most likely to move up into the newly vacated positions, are the most likely wait out the transition.

Now, we examine whether departures vary based on ideology – another way in which transitions may impact employees' choices. Across all four groups, there is a positive and statistically significant estimated coefficient for the ideological mismatch variable. However, its substantive significance is relatively small outside of the career SES and all employee groups. In

particular, estimated turnover increases 6.4% relative to the unconditional baseline for all employees (0.4 percentage points); 2.3% for GS 13-15 employees (0.1 percentage points); 5.5% for supervisors (0.3 percentage points); and 6.3% for the career SES (0.5 percentage points) in any given year of ideological mismatch relative to employees in agencies where there is no such mismatch.

While the results in Table 1 give a sense of the mismatch effect averaged over the course of a president's term, they do not necessarily capture the temporal aspects of the mismatch effect that we would expect in the case that elections are playing a central role in structuring employee decisions about turnover. In particular, the mismatch effect might be most prominent in beginning years of a new administration and lessen over the course of a president's term. To assess this auxiliary hypothesis, we interacted the mismatch variable with indicator variables for the year of president's term --i.e., 1 through 8--and the estimates are included in Table 2.

[Insert Table 2 about here.]

[Insert Figure 1 about here.]

Figure 1 plots the estimated effect of mismatch in a given year of a presidential administration based on the interaction models. As can be seen, the effect is concentrated at the beginning of presidential administrations. In particular, we observe the positive mismatch effect for all four groups being the greatest during the first three years of a president's administration, indicating that the temporal dynamics surrounding elections and transitions are driving behavior. Furthermore, these effect sizes are significantly larger in some cases than the average effect estimated in Table 1. For example, in the third year of a presidential administration, there is a 22% increase (1.70 percentage points) in the probability a career SES employee will leave the federal government if they are in a mismatched agency relative to one who is not.

After the first three years of an administration, however, the mismatch effect tends toward zero for all groups of employees that we examine. For two groups of employees, supervisors and career SES employees, the mismatch effect actually reverses somewhat substantially at least in some years during the second term. This pattern could suggest 1) career employees are more empowered by political appointees the longer they remain with an administration or 2) that the career employees that left have been replaced by careerists better able to work with the new administration (and who, by ideological compatibility, are less likely to leave). As before, career SES employees appear to be the most responsive to ideological mismatch, with the other three groups showing less pronounced effects, though still in the expected positive direction.

Finally, as the foregoing discussion indicated implicitly, we do find evidence of hierarchy effects in our analysis of the turnover decision. Career SES employees are most responsive to both ideological mismatches between their agency and the administration as well as to changes in administrations. Career SES employees tend to serve at the upper echelons of the agency hierarchy and are the career employees that are most likely to interact with political appointees in terms of the substance of their work on a regular basis (see, for example, Resh 2015).

[Insert Figure 2 about here.]

Figure 2 illustrates the total effects of political factors on career SES departures in the first three years of an administration (taking account of the heterogeneous mismatch effects estimated in Table 2). The baseline three-year expected turnover rate for career SESers in non-mismatched agencies that are high (90th percentile) presidential priorities in non-transition years is 19.75%. If one of those three years is a transition year, the estimated three-year departure rate increases 7% to 21.16%. The additional effect of being a mismatched agency leads to an

estimated departure rate of 23.98%, which is 21.4% above the baseline. Finally, if the agency is a low presidential priority (10th percentile), then the estimated departure rate for the career SES is 25.85%, a 30.9% increase over the baseline rate (elasticity = 0.31).

The effects are far less pronounced when examining the other three groups. In particular, employees in grades 13-15 of the GS show the least sensitivity to ideological mismatches and are more likely to stay in government in the first year of a new administration. We see much broader patterns of stability among these groups. This may suggest that the political effects we explore in this paper are less perceptible to these employees and/or there are other career concerns at play that cause employees to act differently than career SES employees in order to obtain promotions. This suggests that elections and transitions do have some effects, but they are relatively isolated among the upper echelons of the career civil service. Among the career SES, the size of these effects is neither negligible nor overwhelming. It is clear that other factors – whether that individuals find alternative outlets for expressing dissent or the transaction costs associated with leaving a job – may mute the effects of politics.

In Appendix B, we include the results from a number of robustness checks and alternative model specifications that account for partisan dynamics in administration changes (Table B1); more flexible accounting for age using age fixed effects (Table B2); and different ways of capturing the effects of local labor markets on turnover propensity (Tables B3 and B4). Across all of these alternative models, we find results that are substantively similar to those reported in Table 1.

Discussion and Conclusion

Elections and partisan transitions are a central feature of American administration. They can bring about new policy directions and cast aside old ideas, lending dynamism and

uncertainty to public policy. While presidents and their appointees cycle in and out of leadership, career officials play stabilizing role, supporting new leaders and providing continuity in governance. This, in theory, allows for organizational effectiveness even in the face of changing policy priorities, giving new leaders the opportunity to implement their programs.

We find varying degrees of stability in the career civil service after elections. The coming and going of appointees with new administrations is mirrored (though to a substantially lesser degree) by departures in the top levels of the civil service. The first years of an administration are associated with higher levels of turnover for career SES and supervisory employees across the executive establishment. This is in consistent with the theoretical notion that civil servants from a previous administration are often viewed with suspicion by new political appointees and thus cut out of the policy process. These effects are substantively similar to the effects of other factors in previous work that have been shown to condition turnover, including outside options, unionization, and demographics.

We also find that ideological mismatches between presidents and the missions of agencies can impact turnover, again, primarily for high level careerists. By inducing elevated levels of turnover, particularly at the top of the administrative hierarchy, presidential transitions may lead to periods of diminished administrative capacity in some cases. These agencies which have divergent missions from the incoming president's agenda encounter a double disadvantage: they lose both funding and expertise making it even more difficult for the government to carry out its mission in these policy areas.

At the same time, we find that deeper in the civil service (among all employees, GS 13-15, and supervisors), there is substantially less responsiveness to presidential transitions. Here, we find broad patterns of stability. It should be noted that even among career SES employees, the

effects we observe are by no means universal or approach turnover among political appointees. As we discuss above, other factors, such as the ability to channel dissent and the costs of changing jobs, may deter turnover even among those most impacted by politics.

Overall, this paper makes a number of contributions to our understanding of politics and administration in the United States. First, it brings elections and ideology to the fore, demonstrating that they can influence employee career concerns to some degree. Second, we demonstrate that employees situated throughout the agency hierarchy may be differentially responsive to these political factors, with high level career employees being most responsive to transitions while they barely move other groups at all. Finally, our analyses use administrative records to systematically study actual turnover, an improvement over work that has been forced to rely on turnover intention in surveys or small groups of employees due to data limitations.

These contributions also have implications beyond better understanding the political economy of federal careers. The results for the career SES in particular suggest that presidential transitions may be times of losses in human capital and institutional memory both at the career and political leadership levels. This implies important political and temporal dynamics for bureaucratic capacity in the U.S. federal government. At the time in which presidents are most eager to exploit their political capital and shift policy, they may find the administrative apparatus that they need to do this diminished in capacity. In this way we observe one possible mechanism through which the control-competence trade-off manifests. As presidents seek to exert control over agencies, it may induce turnover in key career positions and ultimately negatively impact agency performance.

Several additional implications from our results raise a number of questions that could be profitably pursued in future work. First, the results for GS 13-15 employees raise a number of

interesting issues surrounding hierarchy and the potentially different incentives that this group of workers faces. A more general theory of overall organizational dynamics and career concerns would be required to illuminate this possibility and would be a fruitful avenue of research.

Another area of potential interest concerns how elected officials and appointees might respond to negative reactions by careerists in order to stem personnel losses. If turnover, particularly at top levels of an organization, negatively impacts performance (at least in the short-term) then actors may employ some management strategies to mitigate the utility losses associated with turnover. Exploring how employee behavior affects administration incentives and how appointees respond in this context would be an important contribution to our understanding of the administrative presidency and public management.

Table 1: OLS Models of Turnover for Four Groups of Employees

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	-0.002 (-10.10)	-0.001 (-4.89)	0.002 (7.01)	0.016 (7.23)
Ideological Mismatch	0.004 (25.20)	0.001 (3.53)	0.003 (9.06)	0.005 (2.45)
Unemployment Rate	-0.001 (-21.66)	4.65×10^{-5} (0.49)	-0.001 (-10.58)	-0.003 (-4.49)
Priority	-0.002 (-28.51)	-0.001 (-4.89)	-0.002 (-8.53)	-0.003 (-2.24)
Female	-0.003 (-24.19)	0.001 (3.44)	0.001 (2.86)	-3.84×10^{-4} (-0.20)
A.I./A.N.	-0.007 (-14.70)	-0.005 (-3.60)	-0.008 (-6.38)	0.006 (0.50)
Asian	-0.010 (-31.57)	-0.009 (-17.26)	-0.009 (-10.80)	-0.012 (-2.03)
Black	-0.006 (-39.08)	-0.011 (-28.19)	-0.009 (-21.90)	-0.017 (-6.01)
Hispanic	-0.004 (-17.32)	-0.003 (-4.32)	-0.004 (-6.73)	-0.007 (-1.38)
Age	-0.016 (-280.65)	-0.014 (-87.23)	-0.015 (-77.85)	-0.012 (-7.23)
Age^2	2.00×10^{-5} (305.11)	1.70×10^{-4} (94.01)	1.93×10^{-4} (-18.14)	1.47×10^{-4} (9.22)
Education	-4.20×10^{-4} (-12.25)	-1.15×10^{-4} (-1.62)	-0.001 (-18.14)	-0.002 (-3.31)
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Agency FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,543	2,618,289	2,788,868	103,346

This table includes the estimated coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust standard errors clustered by employee are reported in parentheses.

Table 2: Conditional Mismatch Effects

Variable	Model 1	Model 2	Model 3	Model 4
Ideological Mismatch	0.005 (15.77)	2.00×10^{-4} (0.32)	0.004 (5.42)	0.013 (3.00)
Mismatch x Year 2	0.006 (13.37)	0.002 (2.44)	0.009 (9.12)	-0.002 (-0.38)
Mismatch x Year 3	0.004 (7.73)	0.005 (5.33)	0.004 (3.96)	0.004 (0.58)
Mismatch x Year 4	-0.003 (-5.68)	2.45×10^{-4} (0.23)	-0.004 (-3.92)	-0.010 (-1.56)
Mismatch x Year 5	-0.007 (-12.96)	-2.23×10^{-4} (-0.20)	-0.011 (-8.54)	-0.034 (-4.46)
Mismatch x Year 6	-0.008 (-15.29)	-0.002 (-1.44)	-0.008 (-5.96)	-0.022 (-2.81)
Mismatch x Year 7	-0.007 (-12.58)	-3.49×10^{-4} (-0.33)	-0.008 (-5.97)	-0.018 (-2.40)
Mismatch x Year 8	-0.002 (-4.35)	0.001 (0.72)	-0.002 (-1.78)	-0.013 (-2.00)
All Controls	Yes	Yes	Yes	Yes
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Agency FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,543	2,618,289	2,788,868	103,346

This table includes the estimated coefficients from the interaction between the mismatch variable and the indicators for the year of term for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. All other variables that are used in Table 1 are also included in these specifications. T-ratios based on robust standard errors clustered by employee are reported in parentheses.

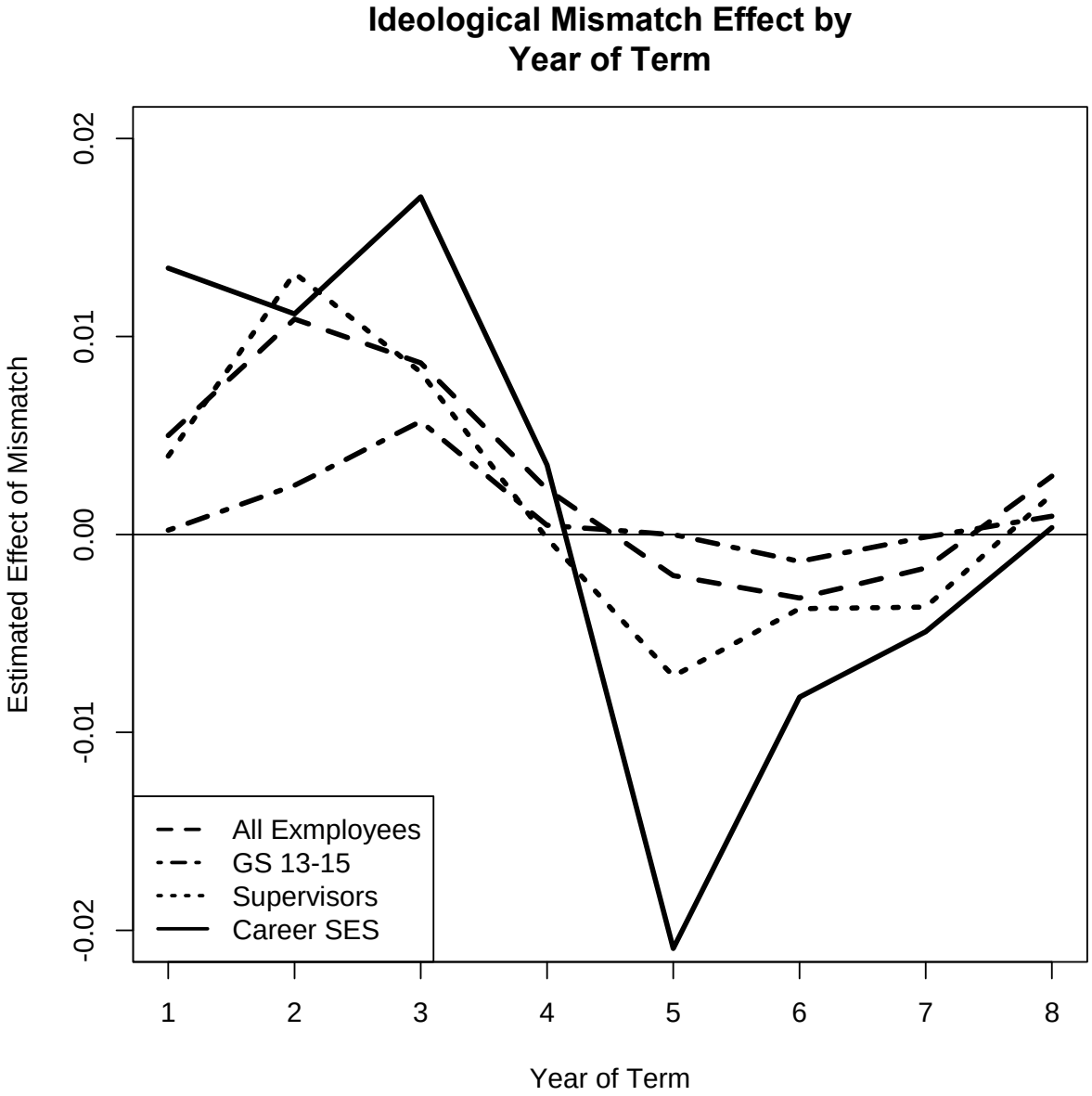

Figure 1. Ideological Mismatch Effect by Year of Term. This figure plots the interaction effects that we estimate in Table 2. The mismatch effect appears to be concentrated in the beginning of new administrations. In particular, the mismatch effect appears to be concentrated mostly in the first three years of a new administration, further demonstrating the role that elections and transitions have on employee turnover decisions.

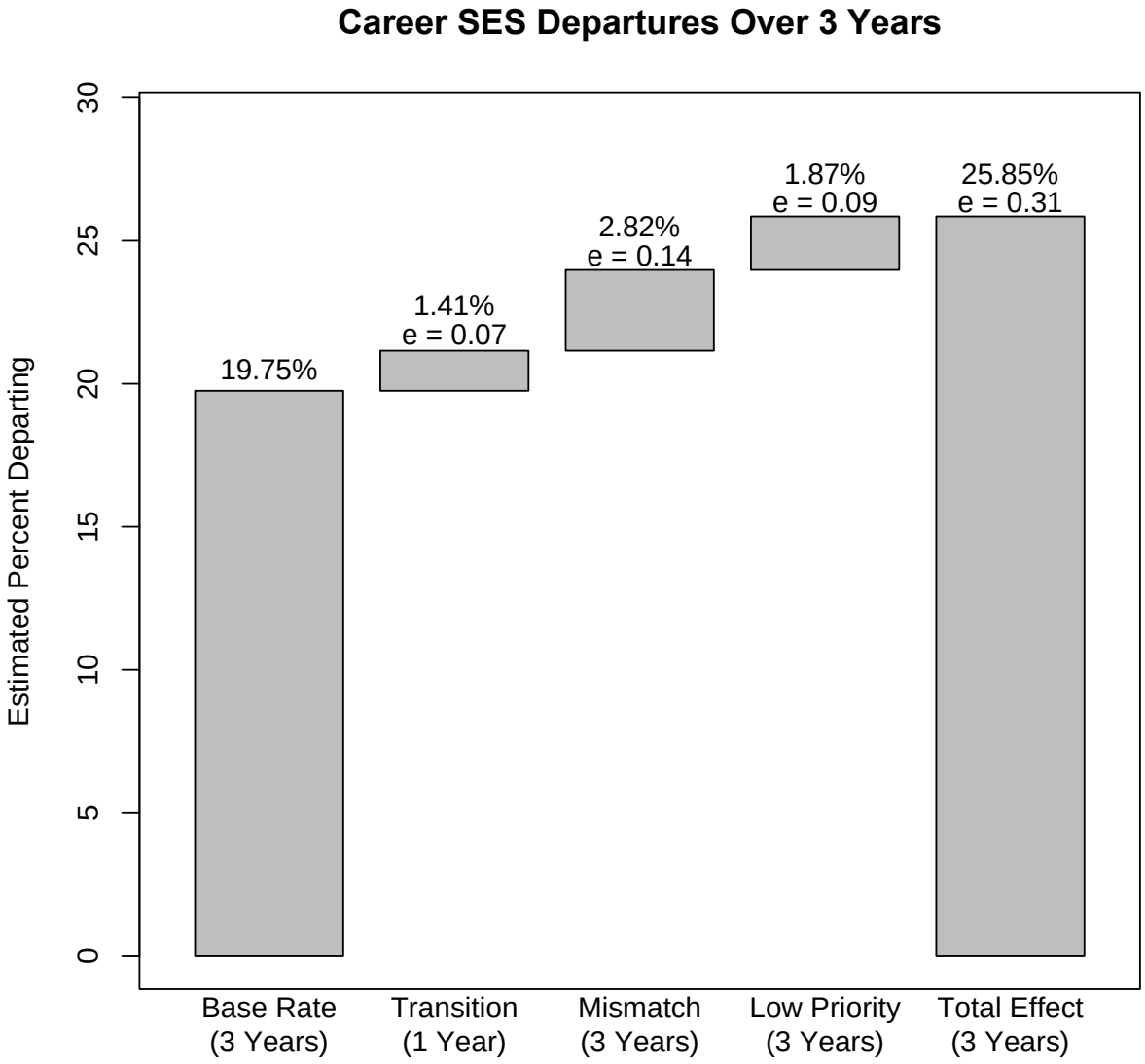

Figure 2. This figure plots the three-year estimated departure rate for career SES employees under a variety of political conditions. Each increment represents the effect of each political effect separately (as well as elasticities, e, computed from the base rate of turnover). The maximum estimated effect (i.e. three-year window includes a transition, the career SESers are in a mismatched agency, and the agency is a low presidential priority) is a 30.8% increase over baseline turnover.

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Appendix A. Formal Representation of Departure Decision

In this Appendix, we outline a slightly more formal approach that underlies the theory found in the paper. We begin by assuming that individuals value wages and policy outcomes so that the utility of an individual is given by:

$$u_{ij} = \lambda_i \omega_{ij} - (1-\lambda_i)(\hat{x}_a - x_i)^2 \qquad (1)$$

where u_{ij} is the utility of individual *i* in her job *j* where $j \in \{b, p\}$ where *b* is a job as a bureaucrat and *p* is a job in the private sector, λ_i is the weight an individual places on wages (vs. policy outcomes) such that $0 \leq \lambda_i \leq 1$, ω_{ij} is the wage of individual *i* in job *j*, $\hat{x}_a$ is the (induced) ideal point of the agency, and x_i is the individual's ideal policy where $\hat{x}_a, x_i \in \Re$. Individuals have single peaked and quadratic preferences over policy outcomes in a unidimensional policy space. The first term of Equation 1 is the utility the individual receives from wages. The second term is the utility she receives from policy outcomes—the closer the agency's policy outcome is to her ideal point, the better off she is. If the individual only values wages, $\lambda_i = 1$, then the utility she receives is derived from just the wage; if the individual only values policy ($\lambda_i = 0$), then the utility function depends only upon the difference in the (induced) ideal points of the individual and the agency.

Individuals may have influence over agency induced ideal points. In particular, the induced ideal point of the agency is:

$$\hat{x}_a = \alpha_{ij} x_i + (1-\alpha_{ij}) x_a \qquad (2)$$

where $\hat{x}_a$ is the induced ideal point of the agency as before, x_i is the ideal point of the individual as before, and x_a is the agency ideal point of agency presidential appointee or administration,

$x_a \in \Re$. An individual's *i* influence in job *j* over agency policymaking is characterized by α_{ij}, which we will characterize further momentarily.

For notational simplicity going forward, let $(x_a - x_i) = X$. Substituting equation 2 into equation 1 and simplifying, we generate the general utility function:

$$u_{ij} = \lambda_i \omega_{ij} - (1-\lambda_i)(1-\alpha_{ij})^2 (X^2) \quad (3)$$

We can now consider two cases. In the first case, consider the individual choosing to work in government as a bureaucrat (*j* = *b*). In this case, the utility function of a bureaucrat can be characterized very similar to equation 3 as:

$$u_{ib} = \lambda_i \omega_{ib} - (1-\lambda_i)(1-\alpha_{ib})^2 (X^2) \quad (4)$$

The bureaucrat receives weighted utility from the government wage ω_{ib} (first term) and from her preference relative to the induced agency preference (second term). The influence a bureaucrat exerts over policy, α_{ib}, is assumed to be inversely related to the distance between the ideal points of the presidential appointee and the bureaucrat. There are a number of ways to model such a relationship. We choose here an example that mirrors how careerist influence works in practice, namely that the influence of the bureaucrat reaches a maximum when the ideal points are very close, and then the influence stays at that same level as the ideal points of the bureaucrat and political appointee continue to converge zero (i.e., bureaucrats are always at least weakly more influential as their ideal points converge to those of appointees). To characterize such an effect we let the influence $\alpha_{ij} = 1/X^4$ if $X^2 \geq \left(\frac{2}{3-\sqrt{5}}\right)^{1/2} \approx 1.618,$, and $\alpha_{ij} = 1$ otherwise. We call this constraint C1. This means for all permissible values of x_i and x_a, it will be the case that $0 < \alpha_{ib} \leq 1$ and the bureaucrat will have some influence over agency induced ideal points. As a

general matter, it is important to choose from a class of functional forms that constrain the influence of the individual over policy to decline faster than the individual's utility of the policy (in this case a quadratic utility function) in X. Intuitively, we need to assume that a careerist's influence decreases as the ideological distance between the careerist and the appointee/administration increases. That is, a careerist is increasingly marginalized as their views diverge from the administration.

The second case is if the individual instead chooses to go to the private sector. In that case the utility function is:

$$u_{ip} = \lambda_i \omega_{ip} - (1-\lambda_i)(1-\alpha_{ip})^2 (X^2) \qquad (5)$$

where the *p* subscript is for a private sector job. Note, however, that by choosing a private sector job, the individual obtains the private sector wage, but loses her ability to influence the agency's ideal point. Said differently, private sector workers have $\alpha_{ip} = 0$.[1] This then reduces the private sector utility function to:

$$u_{ip} = \lambda_i \omega_{ip} - (1-\lambda_i)(X^2) \qquad (6)$$

An individual will choose to work for the government iff $u_{ib} \geq u_{ip}$.

We can now conduct comparative statics. It may be useful at this point to note that the difference in utility of an individual working in the government and the private sector, using equations 4 and 6, can be written as:

$$u_{ib} - u_{ip} = \lambda_i (\omega_{ib} - \omega_{ip}) + [1-(1-\alpha_{ib})^2](1-\lambda_i)(X^2) \qquad (7a)$$

simplifying we obtain:

[1] We assume that in the absence of this individual, the induced policy outcome will be x_a. One way to interpret this result is that when a senior person leaves the government, the political appointee has no one to rely on for expertise and just chooses a policy close to his ideal point. Another way to interpret this is that the second term of the utility of the function is the utility that the bureaucrat obtains from actually making policy $\hat{x}_a$.

$$u_{ib} - u_{ip} = \lambda_i(\omega_{ib} - \omega_{ip}) + (1-\lambda_i)(2\alpha_{ib}^{\frac{1}{2}} - \alpha_{ib}^{\frac{3}{2}}) \quad (7b)$$

For notational simplicity, we suppress the *i* subscript where not needed and substitute for substituting α_{ib} as noted earlier. The first comparative static (first and third hypotheses in the paper) is to examine how changes in the ability of a bureaucrat to influence the agency's induced ideal point affects the bureaucrat's utility. In particular:

$$\partial(u_b - u_p) \Big/ \partial\alpha_b = (1-\lambda)\left(\frac{2X^4 - 3}{2X^2}\right) \quad (8)$$

Equation 8 is weakly positive across all ranges of the function with the constraint C1. Said differently, as a bureaucrat's influence over policy outcomes increases, her utility rises and reaches a peak, where her influence stays. This means a bureaucrat in induced to (weakly) stay in her government job (reducing departure rates) as the bureaucrat's influence increases.

The second comparative static (second hypothesis in the paper) considers changes in the distance between the ideal points of the administration and the individuals. We can examine this by taking the derivative of the utility difference with respect to the squared-distance between the ideal points of the actors.[2] Using the chain rule and implicit function theorem, we can show:

$$\partial(u_b - u_p) \Big/ \partial(X^2) = (1-\lambda)\left(\frac{3 - 2X^4}{X^8}\right) \quad (9)$$

The derivative in equation 9 is weakly negative for all values of X^2 with the constraint C1. This means as x_i and x_a move apart, that is the distance between the individual's ideal point and the administration's ideal point rises, bureaucrats receive weakly less utility from the policy component of their utility function and are more likely to leave the government.

[2] We use X^2 instead of X as a distance measure to ensure the distance measure is always positive.

A final comparative static examines how changes in private sector wages affect the willingness of the bureaucrat to stay in the government. To analyze this we take:

$$\partial(u_b - u_p) \Big/ \partial\omega_p = -\lambda < 0 \qquad (10)$$

Equation 10 shows as private sector wages rise, the utility to staying in the government declines and bureaucrats will tend to leave government and move into the private sector. This final result is a theoretically heartening check of the model, consistent with the basic tenets of labor economics.

Appendix B. Additional Empirical Results and Robustness Checks

In this appendix, we provide additional empirical results that employ alternative measurements of some variables of interest as well as alternative model specifications that are referenced throughout the paper. A description of each of the additional analyses is provided below, and the tables are included in the pages following:

In Table B1, we examine an alternative way to measure administration change. In particular, the most salient type of administration change for career decisions may be those where the new administration is of a different party. This was the case in 1993, 2001, and 2009. In order to assess whether there are differences in the Year 1 result when examining party changes, in this table, we include an indicator for party change in administration rather than the general administration change variable used in the main text. As can be seen in Table B1, the results are substantively the same as those reported in Table 1. The results for supervisors and career SES employees follow the empirical hypotheses derived from the theory (higher departure rates during administration changes), while the results for all employees and GS 13-15 employees are in the opposite direction. In the main text, we offer one plausible explanation for these divergent results grounded in the idea that career SES departures open up opportunities for advancement for other employees lower in the managerial hierarchy in an agency.

Table B2 offers the results of analyses where we include fixed effects for each observed age in the dataset instead of the quadratic polynomial in age that is included in the results reported in the main text. While in our main specifications we followed the previous literature by including both age and its square, in Table B2, we relax any assumptions about functional forms of the relationship between age and turnover. This, for instance, should alleviate any concerns about ages where there may be non-monotonicities or big spikes or declines in turnover (e.g. massive increase in turnover at age 65). As can be seen, the substance of the results reported in

the main text are unaffected by this alternative method of accounting for an employee's age in a given year. The magnitudes and precision of the estimates are nearly identical to those reported in Table 1.

Tables B3 and B4 take different approaches to modeling how the local labor market might impact the turnover decisions of bureaucrats. In the main text, we use the unemployment rate in an individual's location to proxy for the relative labor demand in the area, which has an impact on decisions about leaving the government for the private sector.

First, Table B3 includes occupation category-state fixed effects. There are six occupational categories (administrative, blue collar, clerical, professional, other white collar, and technical) and 51 "states" (including Washington, DC), which leads to 306 total additional categories. Including this additional set of fixed effects allows us to estimate the effect of unemployment within these categories given that changes in labor demand may be differentially felt by individuals in different types of occupations. Even after including these additional fixed effects, the results from the main analyses hold and are similar again in terms of both magnitude and precision. Across all groups of employees, ideological mismatches between the administration and the agency are associated with greater turnover propensities. The first year of a new administration is associated with higher turnover for career SES employees and supervisors but not for the other two groups that we examine, consistent with the results reported in the main text.

In a similar vein, Table B4 includes the estimated coefficients from models in which we include occupation-specific effects of unemployment in the local area. These effects are created by including interaction terms between the unemployment variable and each of the 803 specific occupation codes in our dataset. This allows us to estimate separate effects of unemployment for

every occupation type given that some occupations may be more or less sensitive to changes in labor demand overall in the economy. The results of these analyses do not appear to change any of the substantive conclusions that we reach in the paper.

Table B5 includes estimates of standard errors that are clustered by agency, rather than by individual, as reported in the main text. The results reported here are largely similar, though standard errors increase in size in all cases. In particular, the Year 1 results become statistically insignificant at conventional levels for the group of all employees and for supervisors as well. The mismatch effect is significant at the 10% level for GS 13-15 employees and supervisory employees. All key results for career Senior Executive Service employees remain significant at conventional levels. This group continues to appear most responsive to the political dynamics discussed in the paper. Table B6 clusters standard errors by agency-year. The results there are similar to those reported in the main text of the paper.

Tables B7 and B8 present two alternative types of models beyond the linear probability model that are feasible to run with the size of the dataset here and the number of fixed effects needed in our specifications. Table B7 presents hazard ratios estimated from a Cox regression model with an extremely pared down specification. Here, we stratify by agency and instead of including hundreds of occupational fixed effects, we group to six occupational categories determined by OPM: administrative, blue collar, clerical, other white collar, professional, and technical. The results for career SES and supervisory employees are unchanged substantively, though slightly larger in effect size relative to what we estimate in the main text. One key difference that we see in this table is that we find support for the new administration hypothesis across all four groups, whereas we only find support for supervisors and career SES in the main text. The mismatch effect is robust for GS 13-15, supervisors, and SES but the coefficient is very

imprecisely estimated in the models including all federal employees. Finally, Table B8 includes the results from probit models that correspond to the same specifications as those in the linear probability models. These estimated effects correspond substantively to what we estimate in the paper. Together these two supplemental analyses give us confidence that the results of the linear probability models are not misleading.

Table B9 considers the possibility of interaction effects between the mismatch and priority variables used in the main specifications. One might imagine that the priority variable moderates the effects of mismatch. For instance, the Department of Education and its subcomponents are coded as mismatched during the George W. Bush administration. However, the passage of the No Child Left Behind Act made the department a place where significant policy change was happening that career officials might be able to influence. If these dynamics are at play, we would expect to find that the mismatch effect is diminished as the agency's work becomes a priority to the administration. To test this idea, we interacted the two variables with one another. We find some suggestive evidence of this moderation effect, particularly for the GS 13-15 and career SES populations. There does not appear to be any appreciable interaction effect for the other two groups of employees.

Another concern that we address in Table B10 and Table B11 is whether elections impact not only the degree to which employees can impact policy but also outside options available to them. For instance, a transition might lead to demand among lobbying or other firms for expertise developed in the executive branch. In Table B11, we include duty-station fixed effects (i.e. the state in which an employee works) in order to control for this possibility, with the idea being that the relationship between outside options and transitions are going to be geographically-based (particularly in the DC, Maryland, and Virginia areas where government

affairs expertise is perhaps most valuable given the concentration of groups and firms in those areas centered around that industry). The results do not appear to be substantively affected by the inclusion of these fixed effects. Further, along these lines, in Table B11 we interact the transition year and mismatch effects with an indicator for whether or not the employee works in DC, MD, or VA. We find inconsistent effects across these interactions. If anything, it appears that the main effects in the text are somewhat diminished for employees in these areas, though the estimated interaction coefficients are imprecisely estimated in many specifications.

Finally, in Table B12, we use an alternative dataset released by OPM to the Buzzfeed news organization that extends the CPDF data back through 1973. This allows us to increase the number of transitions that we are able to observe.[3] Unfortunately, the Buzzfeed data contains less information on employees than in our dataset. In particular, it is missing key demographic variables, such as race and gender, as well as indicators for the supervisory status of employees, which makes it impossible for us to run the analysis on this group of individuals. Nonetheless, we use the available data to replicate our analyses for the all, GS 13-15, and career SES groups. The results of these analyses conform well to the results reported in the main text. This suggests that the results in the main text are robust to increasing the number of transitions that we examine.

Overall these results lend additional credence to those presented in the main text. Across a number of alternative ways of operationalizing key variables, alternative specifications, and different strategies for accounting for local economies, the results remain consistent with those reported in Table 1.

[3] Note that we only add one new transition for the career SES since it did not exist for the entire time period.

Table B1: Party Change Models

Variable	Model 1	Model 2	Model 3	Model 4
Party Change	-0.003 (-19.75)	-0.006 (-15.13)	0.002 (4.45)	0.019 (6.99)
Ideological Mismatch	0.004 (25.22)	0.001 (3.49)	0.003 (9.12)	0.005 (2.55)
Unemployment Rate	-0.001 (-18.56)	1.69×10^{-4} (1.78)	-0.001 (-10.54)	-0.004 (-5.13)
Priority	-0.003 (-30.23)	-0.001 (-5.57)	-0.002 (-8.20)	-0.002 (-1.56)
Female	-0.003 (-24.17)	0.001 (3.44)	0.001 (2.86)	-3.49×10^{-4} (-0.18)
A.I./A.N.	-0.007 (-14.69)	-0.005 (-3.59)	-0.008 (-6.38)	0.006 (0.48)
Asian	-0.010 (-31.69)	-0.009 (-17.29)	-0.009 (-10.80)	-0.012 (-2.02)
Black	-0.006 (-39.23)	-0.011 (-28.22)	-0.009 (-21.90)	-0.017 (-6.00)
Hispanic	-0.004 (-17.43)	-0.003 (-4.33)	-0.004 (-6.72)	-0.007 (-1.38)
Age	-0.016 (-280.63)	-0.014 (-87.23)	-0.015 (-77.85)	-0.012 (-7.22)
Age^2	2.00×10^{-4} (305.09)	1.70×10^{-4} (94.02)	1.82×10^{-4} (91.60)	1.47×10^{-4} (9.21)
Education	-4.22×10^{-4} (-12.29)	-1.16×10^{-4} (-1.64)	-0.001 (-18.14)	-0.002 (-3.30)
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Agency FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,543	2,618,289	2,788,868	103,346

This table includes the estimated coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. Instead of modeling changes in administration, here we use an indicator for years in which there is a party change. T-ratios based on robust standard errors clustered by employee are reported in parentheses.

Table B2: Fixed Effects for Age

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	-0.002 (-10.21)	-0.004 (-11.98)	0.002 (6.93)	0.016 (7.23)
Ideological Mismatch	0.004 (25.03)	0.001 (3.46)	0.003 (8.85)	0.005 (2.50)
Unemployment Rate	-0.001 (-21.24)	6.05×10^{-5} (0.64)	-0.001 (-10.37)	-0.003 (-4.53)
Priority	-0.003 (-28.73)	-0.001 (-4.73)	-0.002 (-8.69)	-0.003 (-4.53)
Female	-0.003 (-24.01)	0.001 (4.08)	0.001 (2.87)	-3.13×10^{-5} (-0.02)
A.I./A.N.	-0.007 (-14.82)	-0.005 (-3.57)	-0.008 (-6.36)	0.006 (0.54)
Asian	-0.010 (-32.67)	-0.009 (-17.16)	-0.009 (-11.07)	-0.012 (-2.15)
Black	-0.006 (-40.77)	-0.011 (-28.64)	-0.009 (-22.35)	-0.017 (-6.01)
Hispanic	-0.005 (-18.14)	-0.003 (-4.42)	-0.004 (-6.70)	-0.007 (-1.35)
Education	-4.02×10^{-4} (-11.73)	-1.51×10^{-4} (-2.14)	-0.001 (-18.21)	-0.002 (-3.62)
Age FE	Yes	Yes	Yes	Yes
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Agency FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,543	2,618,289	2,788,868	103,346

This table includes the estimated coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust standard errors clustered by employee are reported in parentheses.

Table B3: Occupation Category x Duty Station Fixed Effects

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	-0.001 (-8.21)	-0.001 (-5.14)	0.003 (7.34)	0.017 (7.50)
Ideological Mismatch	0.003 (21.28)	0.001 (3.03)	0.003 (8.07)	0.005 (2.42)
Unemployment Rate	-0.002 (-35.73)	-4.76×10^{-4} (-3.97)	-0.002 (-13.92)	-0.005 (-6.05)
Priority	-0.003 (-31.77)	-0.001 (-5.14)	-0.002 (-8.92)	-0.003 (-2.65)
Female	-0.003 (-23.76)	0.002 (6.39)	0.001 (4.97)	-0.001 (-0.38)
A.I./A.N.	-0.009 (-17.54)	-0.010 (-19.32)	-0.008 (-6.57)	0.003 (0.25)
Asian	-0.011 (-34.66)	-0.010 (-19.32)	-0.010 (-12.31)	-0.011 (-1.93)
Black	-0.004 (-21.93)	-0.010 (-27.02)	-0.008 (-19.93)	-0.016 (-5.76)
Hispanic	-0.006 (-23.11)	-0.003 (5.08)	-0.005 (-7.75)	-0.007 (-1.32)
Age	-0.017 (-283.60)	-0.014 (-87.49)	-0.015 (-77.16)	-0.011 (-6.76)
Age^2	2.03×10^{-4} (307.01)	1.69×10^{-4} (94.27)	1.92×10^{-4} (90.60)	1.41×10^{-4} (8.77)
Education	-4.75×10^{-4} (-14.84)	-4.48×10^{-5} (-0.69)	-0.002 (-23.48)	-0.002 (-4.26)
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Occ Cat x DS FE	Yes	Yes	Yes	Yes
Agency FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,027	2,618,289	2,788,849	103,340

This table includes the estimated coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust standard errors clustered by employee are reported in parentheses.

Table B4: Occupation-Specific Unemployment Rate Effects

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	-0.002 (-10.00)	-0.004 (-12.08)	0.003 (7.16)	0.016 (7.09)
Ideological Mismatch	0.004 (24.89)	0.001 (4.21)	0.003 (8.43)	0.006 (2.67)
Priority	-0.002 (-26.33)	-0.001 (12.08)	-0.002 (-9.00)	-0.003 (-2.39)
Female	-0.003 (-24.29)	0.001 (3.41)	0.001 (2.76)	-0.001 (-0.26)
A.I./A.N.	-0.007 (-14.39)	-0.005 (-3.48)	-0.007 (-6.32)	0.005 (0.46)
Asian	09,998 (-30.96)	-0.009 (-17.22)	-0.008 (-10.57)	-0.012 (-1.98)
Black	-0.006 (-38.59)	-0.011 (-28.33)	-0.009 (-21.97)	-0.017 (-6.15)
Hispanic	-0.004 (-17.21)	-0.003 (-4.37)	-0.004 (-6.56)	-0.008 (-1.49)
Age	-0.016 (-280.26)	-0.014 (-87.20)	-0.015 (-77.93)	-0.012 (-7.22)
Age^2	1.99×10^{-4} (304.78)	1.70×10^{-4} (94.00)	1.93×10^{-4} (91.67)	1.47×10^{-4} (9.21)
Education	-4.12×10^{-4} (-12.00)	-1.23×10^{-4} (-1.74)	-0.001 (-18.33)	-0.002 (-3.28)
Occupation-Specific Unemp	Yes	Yes	Yes	Yes
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Occupation x Unemployment	Yes	Yes	Yes	Yes
Agency FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,543	2,618,289	2,788,868	103,346

This table includes the estimated coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust standard errors clustered by employee are reported in parentheses.

Table B5: OLS Models of Turnover for Four Groups of Employees – Alternative SEs

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	-0.002 (-1.90)	-0.001 (-3.06)	0.002 (1.25)	0.016 (5.16)
Ideological Mismatch	0.004 (2.12)	0.001 (1.66)	0.003 (1.69)	0.005 (2.13)
Unemployment Rate	-0.001 (-2.74)	4.65×10^{-5} (0.20)	-0.001 (-2.14)	-0.003 (-3.99)
Priority	-0.002 (-1.84)	-0.001 (-1.85)	-0.002 (-0.97)	-0.003 (-1.33)
Female	-0.003 (-3.55)	0.001 (2.31)	0.001 (1.07)	-3.84×10^{-4} (-0.18)
A.I./A.N.	-0.007 (-0.84)	-0.005 (-0.92)	-0.008 (-1.12)	0.006 (0.50)
Asian	-0.010 (-5.38)	-0.009 (-9.89)	-0.009 (-5.38)	-0.012 (-2.08)
Black	-0.006 (-4.45)	-0.011 (-17.13)	-0.009 (-7.37)	-0.017 (-5.36)
Hispanic	-0.004 (-6.18)	-0.003 (-3.29)	-0.004 (-3.49)	-0.007 (-1.37)
Age	-0.016 (-20.29)	-0.014 (-15.48)	-0.015 (-14.32)	-0.012 (-4.74)
Age^2	2.00×10^{-5} (25.31)	1.70×10^{-4} (18.53)	1.93×10^{-4} (-18.05)	1.47×10^{-4} (5.92)
Education	-4.20×10^{-4} (-3.14)	-1.15×10^{-4} (-0.79)	-0.001 (-4.76)	-0.002 (-3.18)
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Agency FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,543	2,618,289	2,788,868	103,346

This table includes the estimated coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust **standard errors clustered by agency** are reported in parentheses.

Table B6: OLS Models of Turnover for Four Groups of Employees – Alternative SEs

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	-0.002 (-0.87)	-0.001 (-3.75)	0.002 (1.09)	0.016 (4.57)
Ideological Mismatch	0.004 (2.63)	0.001 (1.46)	0.003 (1.55)	0.005 (1.91)
Unemployment Rate	-0.001 (-3.32)	4.65×10^{-5} (0.26)	-0.001 (-2.62)	-0.003 (-3.68)
Priority	-0.002 (-2.60)	-0.001 (-1.87)	-0.002 (-1.38)	-0.003 (-1.51)
Female	-0.003 (-9.35)	0.001 (3.03)	0.001 (1.33)	-3.84×10^{-4} (-0.19)
A.I./A.N.	-0.007 (-3.74)	-0.005 (-2.56)	-0.008 (-3.84)	0.006 (0.48)
Asian	-0.010 (-14.87)	-0.009 (-16.00)	-0.009 (-9.60)	-0.012 (-1.94)
Black	-0.006 (-12.24)	-0.011 (-25.02)	-0.009 (-12.97)	-0.017 (-5.30)
Hispanic	-0.004 (-9.27)	-0.003 (-4.10)	-0.004 (-5.74)	-0.007 (-1.34)
Age	-0.016 (-57.40)	-0.014 (-39.81)	-0.015 (-41.67)	-0.012 (-7.69)
Age^2	2.00×10^{-5} (62.70)	1.70×10^{-4} (46.72)	1.93×10^{-4} (48.25)	1.47×10^{-4} (9.82)
Education	-4.20×10^{-4} (-5.66)	-1.15×10^{-4} (-1.38)	-0.001 (-6.00)	-0.002 (-3.02)
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Agency FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,543	2,618,289	2,788,868	103,346

This table includes the estimated coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust **standard errors clustered by agency** are reported in parentheses.

Table B7: Cox Regression Models of Turnover for Four Groups of Employees

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	1.365 (116.58)	1.238 (24.51)	1.541 (62.67)	1.549 (14.53)
Ideological Mismatch	1.002 (0.61)	1.037 (4.22)	1.047 (5.92)	1.167 (5.19)
Unemployment Rate	0.834 (-310.94)	0.779 (-128.24)	0.828 (-124.62)	0.830 (-24.42)
Priority	0.989 (-6.91)	1.119 (21.40)	1.047 (10.36)	1.031 (1.64)
Female	0.861 (-55.67)	0.874 (-18.51)	0.772 (-37.19)	0.635 (-14.26)
A.I./A.N.	0.707 (-32.36)	0.665 (-11.38)	0.694 (-13.50)	0.733 (-1.79)
Asian	0.772 (-40.61)	0.549 (-32.10)	0.620 (-22.39)	0.586 (-5.01)
Black	0.887 (-36.59)	0.802 (-20.91)	0.866 (-15.22)	0.781 (-5.09)
Hispanic	0.800 (-40.43)	0.754 (-14.38)	0.733 (-19.35)	0.680 (-4.51)
Age	0.805 (-363.34)	0.873 (-46.24)	0.967 (-9.45)	1.142 (5.76)
Age^2	1.002 (364.16)	1.002 (64.93)	1.001 (30.27)	0.999 (-2.98)
Education	0.976 (-37.13)	0.966 (-21.51)	0.933 (-44.98)	0.959 (-6.25)
Occ Cat FE	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,027	2,618,289	2,788,849	103,340

This table includes the estimated hazard rations from Cox regression turnover models stratified by agency for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust standard errors clustered by bureau are reported in parentheses.

Table B8: Probit Models of Turnover for Four Groups of Employees

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	-0.016 (-11.51)	-0.051 (-12.08)	0.022 (6.37)	0.110 (6.93)
Ideological Mismatch	0.044 (28.52)	0.020 (5.40)	0.037 (9.63)	0.033 (2.06)
Unemployment Rate	-0.008 (-21.88)	0.001 (0.47)	-0.010 (-10.67)	-0.019 (-3.88)
Priority	-0.022 (-28.83)	-0.012 (-5.37)	-0.020 (-9.53)	-0.019 (-2.04)
Female	-0.032 (-25.00)	0.027 (7.94)	0.017 (4.70)	0.008 (0.50)
A.I./A.N.	-0.059 (-13.64)	-0.026 (-1.77)	-0.067 (-5.65)	0.064 (0.78)
Asian	-0.089 (-30.58)	-0.123 (-15.45)	-0.100 (-10.01)	-0.090 (-1.76)
Black	-0.059 (-40.38)	-0.134 (-27.55)	-0.100 (-22.33)	-0.135 (-6.11)
Hispanic	-0.047 (-19.30)	-0.041 (-4.87)	-0.053 (-7.16)	-0.053 (-1.29)
Age	-0.098 (-286.47)	-0.099 (-68.47)	-0.064 (-41.06)	-0.019 (-1.61)
Age^2	0.001 (323.64)	0.001 (82.60)	0.001 (63.44)	4.64×10^{-4} (4.35)
Education	-0.003 (-10.48)	-0.002 (-2.77)	-0.013 (-17.57)	-0.012 (-3.66)
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Bureau FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,259	2,617,861	2,788,471	103,044

This table includes the estimated probit coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust standard errors clustered by individual are reported in parentheses.

Table B9: Interaction of Mismatch and Priority

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	-0.002 (-10.03)	-0.004 (-11.90)	0.002 (7.03)	0.016 (7.28)
Ideological Mismatch	0.004 (17.49)	0.003 (5.77)	0.004 (6.94)	0.010 (2.99)
Unemployment Rate	-0.001 (-21.53)	8.25×10^{-5} (0.87)	-0.001 (-10.50)	-0.003 (-4.29)
Priority	-0.002 (-23.94)	-3.07×10^{-4} (-1.28)	-0.002 (-6.66)	-0.001 (-0.78)
Mismatch x Priority	-1.75×10^{-4} (-1.13)	-0.001 (-4.50)	-4.26×10^{-4} (-1.19)	-0.004 (-1.88)
Female	-0.004 (-24.19)	0.001 (3.45)	0.001 (2.86)	-4.06×10^{-4} (-0.21)
A.I./A.N.	-0.007 (-14.70)	-0.005 (-3.58)	-0.008 (-6.38)	0.006 (0.50)
Asian	-0.010 (-31.57)	-0.009 (-17.26)	-0.009 (-10.80)	-0.012 (-2.02)
Black	-0.006 (-39.09)	-0.011 (-28.19)	-0.009 (-21.90)	-0.017 (-6.01)
Hispanic	-0.004 (-17.32)	-0.003 (-4.32)	-0.004 (-6.73)	-0.007 (-1.39)
Age	-0.016 (-280.65)	-0.014 (-87.24)	-0.015 (-77.85)	-0.012 (-7.24)
Age^2	2.00×10^{-4} (305.11)	1.70×10^{-4} (94.02)	1.93×10^{-4} (91.60)	1.47×10^{-4} (9.23)
Education	-4.21×10^{-5} (-12.25)	-1.16×10^{-4} (-1.64)	-0.001 (-18.15)	-0.002 (-3.42)
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Bureau FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,259	2,617,861	2,788,471	103,044

This table includes the estimated coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust standard errors clustered by individual are reported in parentheses.

Table B10: Duty Station Fixed Effects

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	-0.001 (-5.77)	-0.004 (-10.63)	0.003 (7.99)	0.017 (7.51)
Ideological Mismatch	0.004 (24.78)	0.001 (3.54)	0.003 (8.86)	0.005 (2.41)
Unemployment Rate	-0.002 (-41.61)	-0.001 (-4.34)	-0.002 (-15.29)	-0.005 (-6.00)
Priority	-0.003 (-29.73)	-0.001 (-5.31)	-0.002 (-8.93)	-0.003 (-2.57)
Female	-0.003 (-24.04)	0.001 (3.52)	0.001 (2.79)	-0.001 (-0.33)
A.I./A.N.	-0.009 (-16.98)	-0.006 (-4.09)	-0.008 (-6.98)	0.003 (0.25)
Asian	-0.011 (-36.31)	-0.009 (-17.38)	-0.008 (-10.52)	-0.012 (-2.02)
Black	-0.005 (-31.72)	-0.010 (-27.20)	-0.009 (-21.04)	-0.016 (-5.88)
Hispanic	-0.006 (-24.11)	-0.003 (-5.72)	-0.005 (-7.93)	-0.008 (-1.50)
Age	-0.016 (-281.71)	-0.014 (-87.60)	-0.015 (-78.11)	-0.012 (-7.23)
Age^2	2.00×10^{-4} (305.75)	1.70×10^{-4} (94.36)	1.93×10^{-4} (91.83)	1.47×10^{-4} (9.23)
Education	-4.18×10^{-4} (-12.16)	-9.48×10^{-5} (-1.33)	-0.001 (-17.86)	-0.002 (-3.32)
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Occ Cat x DS FE	Yes	Yes	Yes	Yes
Agency FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,027	2,618,289	2,788,849	103,340

This table includes the estimated coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust standard errors clustered by employee are reported in parentheses.

Table B11: Interactions with DC/MD/VA indicator

Variable	Model 1	Model 2	Model 3	Model 4
Year 1	-0.001 (-5.45)	-0.003 (-6.26)	0.003 (7.05)	0.030 (6.41)
Ideological Mismatch	0.006 (30.72)	0.002 (3.49)	0.005 (11.23)	0.009 (2.02)
Unemployment Rate	-0.001 (-23.33)	2.51×10^{-5} (0.27)	-0.001 (-10.25)	-0.003 (-4.83)
Priority	-0.003 (-28.90)	-0.001 (-4.91)	-0.002 (-8.70)	-0.003 (-2.26)
DCMDVA	-0.007 (-36.86)	-0.002 (-4.96)	-0.003 (-6.85)	0.009 (2.92)
Year 1 x DCMDVA	-0.002 (-6.68)	-0.002 (-3.43)	-0.002 (-2.51)	-0.018 (-3.49)
Mismatch x DCMDVA	-0.005 (-18.32)	-0.001 (-1.45)	-0.005 (-6.66)	-0.005 (-0.96)
Female	-0.003 (-24.25)	0.001 (3.72)	0.001 (3.01)	-4.77×10^{-4} (-0.25)
A.I./A.N.	-0.008 (-15.51)	-0.005 (-3.73)	-0.008 (-6.62)	0.007 (0.58)
Asian	-0.009 (-31.13)	-0.009 (-17.08)	-0.009 (-10.84)	-0.012 (-2.01)
Black	-0.005 (-31.40)	-0.010 (-27.31)	-0.009 (-20.80)	-0.017 (-5.99)
Hispanic	-0.005 (-19.45)	-0.003 (-4.61)	-0.004 (-7.30)	-0.007 (-1.31)
Age	-0.016 (-281.38)	-0.014 (-87.37)	-0.015 (-77.86)	-0.012 (-7.22)
Age^2	2.00×10^{-4} (305.61)	1.70×10^{-4} (94.15)	1.93×10^{-4} (-77.86)	1.47×10^{-4} (9.21)
Education	-3.75×10^{-4} (-10.91)	-1.01×10^{-4} (-1.43)	-0.001 (-17.33)	-0.002 (-3.40)
Tenure FE	Yes	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes	Yes
Bureau FE	Yes	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes	Yes
Group	All Employees	GS 13-15	Supervisors	Career SES
N	17,529,259	2,617,861	2,788,471	103,044

This table includes the estimated probit coefficients from turnover models for four groups of employees – all, GS 13-15, employees in a supervisory role, and career Senior Executive Service employees. T-ratios based on robust standard errors clustered by individual are reported in parentheses.

Table B12: OLS Models of Turnover, 1973-2013

Variable	Model 1	Model 2	Model 3
Year 1	-0.006 (-45.36)	-0.008 (-27.44)	0.006 (2.02)
Ideological Mismatch	0.004 (25.64)	4.81×10^{-4} (1.64)	0.004 (1.95)
Unemployment Rate	-0.001 (-52.42)	6.42×10^{-5} (1.08)	-1.65×10^{-5} (-0.04)
Priority	-0.002 (-32.28)	-0.001 (-7.83)	-0.001 (-1.26)
Age	-0.017 (-398.77)	-0.014 (-100.44)	-0.013 (-9.31)
Age^2	2.05×10^{-4} (8.48)	1.72×10^{-4} (108.57)	1.59×10^{-4} (11.32)
Education	2.56×10^{-4} (8.48)	-3.89×10^{-4} (-6.18)	-0.001 (-2.59)
Tenure FE	Yes	Yes	Yes
Occupation FE	Yes	Yes	Yes
Bureau FE	Yes	Yes	Yes
Cubic Trend	Yes	Yes	Yes
Group	All Employees	GS 13-15	Career SES
N	30,339,305	3,715,006	126,506

This table includes the estimated coefficients from turnover models for three groups of employees – all, GS 13-15, and career Senior Executive Service employees. Here we use the Buzzfeed OPM data release, which includes additional years of data and presidential transitions (1973-2013). However, that data is less detailed with respect to control variables than what is used in the main text. Additionally, there is no indicator for supervisory employees, so we cannot estimate models for these employees. T-ratios based on robust standard errors clustered by individual are reported in parentheses.