

## Policy Influence, Agency-Specific Expertise, and Exit in the Federal Service

Anthony M. Bertelli and David E. Lewis

### ABSTRACT

Executive turnover influences agency performance, policy implementation and ultimately the success of legislative delegations. We argue that turnover intention is a function of labor market opportunities – specifically, outside employment opportunities and the acquisition of non-transferable, agency-specific human capital – as well as perceptions about the way in which political decisions have impacted federal executive influence over policymaking. Statistical evidence for these claims is provided using data from the 2007-2008 Survey on the Future of Government Service, the largest ever survey of U.S. federal executives. Agency-specific human capital drives down turnover intention in our estimates. The availability of outside options has the opposite effect except in cases where the executive has invested a lot in agency-specific human capital. Turnover intention increases when an agency's senior executives have little influence over policy. We draw out the implications of these findings for our understanding of federal labor markets, the construction of civil service systems, and the politicization of executive branch agencies.

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## **Policy Influence, Agency-Specific Expertise, and Exit in the Federal Service**

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## **Policy Influence, Agency-Specific Expertise, and Exit in the Federal Service**

### **Abstract**

Executive turnover influences agency performance, policy implementation and ultimately the success of legislative delegations. We argue that turnover intention is a function of labor market opportunities – specifically, outside employment opportunities and the acquisition of non-transferable, agency-specific human capital – as well as perceptions about the way in which political decisions have impacted federal executive influence over policymaking. Statistical evidence for these claims is provided using data from the 2007-2008 Survey on the Future of Government Service, the largest ever survey of U.S. federal executives. Agency-specific human capital drives down turnover intention in our estimates. The availability of outside options has the opposite effect except in cases where the executive has invested a lot in agency-specific human capital. Turnover intention increases when an agency's senior executives have little influence over policy. We draw out the implications of these findings for our understanding of federal labor markets, the construction of civil service systems, and the politicization of executive branch agencies.

While Hurricane Katrina began to threaten the Gulf Coast, fifteen to twenty percent of the jobs in the Federal Emergency Management Agency (FEMA) were vacant. Many agency executives who had managed the response to the 9/11 attacks were no longer working in the agency, having departed for jobs at the state level or the private sector. Some had retired. Many had left the agency in response to dissatisfaction with political intervention in the agency or were discouraged by changes resulting from its merger into the Department of Homeland Security. The availability of attractive options outside the agency made it easy for these executives to translate their dissatisfaction with agency work into a decision to leave the agency. The dramatic turnover of executives inside FEMA had direct consequences for agency performance in response to Hurricane Katrina. Executive turnover drained emergency management expertise, making it difficult for the agency to employ lessons from prior disasters such as Hurricane Andrew into concrete action. Turnover also disrupted longstanding working relationships between FEMA and state emergency managers, relationships essential for a coordinated response to disasters.

Executive turnover born of political conflict and labor market forces affects not only FEMA but the federal government more generally. The aging of the federal service means that almost half of career federal executives are eligible to retire, having potentially dramatic consequences for the performance of the national government at a time when federal agencies are at once managing economic recovery, wars in Iraq and Afghanistan, increasing cross-border drug violence, and efforts in energy, education, and health policy. We propose and test a set of claims that address this important aspect of contemporary public management.

While various studies examine the determinants of bureaucratic turnover intention (e.g., Lewis 1991; Kellough and Osuna 1995; Selden and Moynihan 2000; Bertelli 2007; Moynihan

and Pandey 2008; Moynihan and Landuyt 2008; Lee and Whitford 2008), far fewer consider the phenomenon to be driven by an interaction between politics and labor markets (e.g., Gailmard and Patty 1997; Lewis 2007; Gailmard 2010). We consider the claim that turnover intention is a function of labor market opportunities as well as perceptions about the impact of political decisions on federal executives' influence over policymaking. In so doing, we present extant theories of labor markets and apply them to turnover in the federal sector. These theories produce competing predictions for turnover which we arbitrate using data from a new survey of federal executives, the 2007-2008 Survey on the Future of Government Service (Bertelli, et al. 2008). Our evidence suggests that acquiring agency-specific human capital – knowledge and skills that are non-transferable to employers outside the agency – drives down turnover intention. The availability of employment opportunities outside the agency, which we call outside options, has the opposite effect.<sup>1</sup> When outside options are rare, agency-specific human capital decreases turnover intention, but this effect disappears and appears to reverse in the presence of a robust private sector market. As executives perceive that senior civil servants' policy influence has been reduced, they are more likely to announce an intention to leave their jobs.

We make two contributions to the public management literature. First, we integrate an important topic in personnel economics with the management literature on turnover in a novel way and provide important new findings regarding the role of outside employment options and agency-specific human capital. These are central to understanding the stability of the public-sector workforce. Second, we present innovative measures of perceived policy influence from rich new survey data. We proceed in the following way. In the next section, we develop theoretical claims, and then turn to a description of our survey data. The specification of our

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<sup>1</sup> Of course, federal executives have different types of outside options, including retirement. Other outside options include jobs in the private sector, not-for-profit sector, or another local, state or federal agency.

empirical models then follows, and results are presented and discussed. We conclude with some brief remarks and implications for future research.

### **Policy Influence, Human Capital Acquisition, and Turnover Intention**

In the public management literature, an important, if abstruse, element of public employee job satisfaction is tied to public service motivation. Bureaucrats' desire to be instrumental in policy formation, to serve the public, and to implement public policies they support is an important factor in recruitment and retention in the federal service (Perry and Wise 1990). Yet evidence suggests that public service motivation varies substantially over time, administration, agencies and tasks (Rainey 1997, 217).

Gailmard and Patty (2007) provide an important theoretical link between intrinsic-motivational accounts of bureaucratic employment and labor market incentives. They argue that acquiring knowledge and skills not transferable to employers outside the agency, or agency-specific human capital, comes at a cost to the executive, and that cost can be exploited by the employing agency (or administration) via a classic hold-up scenario. In such a situation an executive acquires agency or policy-specific expertise, but political superiors have the potential to overrule the executive's decisions. Political superiors can use expertise acquired by executives to justify agency actions the same executives do not prefer. For example, agency careerists learn through their study and interactions with stakeholders about the effects of proposed regulations on the market and this information allows political executives to target some firms and not others or, once learning the effects of the regulation, decide not to regulate at all. In such circumstances, political superiors can also pay an executive a lower wage, namely, one equal to the difference between their value to the agency and the wage they could secure outside the agency (i.e., Klein, Crawford, and Alchian 1978). Since the labor market does not reward knowledge or skills that

do not transfer easily, the agency can pay an executive that has acquired expertise less than he or she is worth to the agency. Thus, civil service systems must solve an incentive design problem (Gailmard and Patty 2007). In the context of the federal government, executives will not invest time or resources in acquiring costly expertise and may depart for other jobs unless political superiors grant them influence over policymaking. If incentives do not exist within the system to induce executives to develop costly expertise in policy areas, they will not, and congressional delegations as well as the effectiveness of the administrative state will suffer (Gailmard and Patty 2007).

Turnover, then, may be problematic for democratic governance (Bertelli 2007; Brehm and Gates 1997; Lewis 1991), but it can also provide benefits to employers and the incentives it provides are unlikely to be ignored by agency managers when they are relevant. Public management scholars have discussed benefits such as the administrative costs of dismissing the incumbent and selecting a replacement being outweighed by the benefits from having a high-performing person in the job; a motivating influence to employees who do not leave; and new employees as a source of new ideas in the organization (Meier and Hicklin 2008, 574). Economists see value in turnover when a job match between employer and employee is seen as an experience good, that is, “the only way to determine the quality of a particular match is to form the match and ‘experience it’” (Jovanovic 1979, 973). For example, if appointees do not know what a high or low competence executive looks like or how he or she can benefit their agency, having experience with a number of different people actually serving in similar roles over time can help appointees to learn about the qualities of effective workers and to improve their ability to select subordinates carefully in the future.

Some turnover is also beneficial when promotions give careerists access to new jobs that have greater responsibilities and opportunities to influence policy (Lazear 1995a). While such promotions bring risk to an agency, they also give the agency an important advantage over other employers, particularly private sector employers. Government service affords executives more opportunities to influence public policy on a broader scale than virtually any other organization. For the agency to benefit in this way, executives who work in such positions must invest time and effort to acquire some amount of non-transferable, agency-specific expertise (Lazear 1995a). This expertise ranges from knowing details of the agency's internal accounting system to being aware of policy details in areas with no robust private sector market (e.g., forest management or air traffic control). If lawmakers cannot depend on expertise about policy and administrative operations acquired by these executives to implement the programs they design, policies will languish, best practices will be ignored, and so forth. We claim, then, that agency-specific human capital is a crucial ingredient in the process that generates turnover among federal executives.

To understand turnover intention in any public or private context, we must focus on the question of why an employee would want to leave without experiencing subsequent a spell of unemployment. Having no job or income is a terrible outside option for the employee, so we must consider alternatives that have personal or professional benefit. While such alternatives may lie outside the formal labor market and involve non-pecuniary benefits – spending more time with one's family, for instance – theories in personnel economics have primarily engaged the possibility of hiring an employee from a competing organization, usually a private firm. The outside option, then, is another open job offer. To establish terms, we call the organization in which an executive is employed the incumbent agency; the organization seeking to hire the executive is identified as the raiding organization. The outside option – the job offer – represents

the raiding organization's valuation of the executive's human capital stock, which provokes the incumbent agency to make its own valuation and decide whether or not to present the executive with a counterproposal. If it does so, it must determine the details of that counterproposal, such as salary, benefits, responsibilities, and discretion. In personnel economics, this offer-counteroffer process is central to the mechanism that generates turnover. We make the corresponding claim that incentives created by this process generate a set of expectations that likewise motivate turnover *intention* among federal executives. Our claim does not require actual offers and counteroffers in particular cases, but only that the valuation an offer-counteroffer process creates is being made. A detailed agency pay evaluation, for instance, may be sufficient. Organizations have the incentive to take such things seriously precisely because of the incentives we are describing.

One approach in the personnel economics literature emphasizes the information asymmetry between the raiding and incumbent organizations. This informational perspective generates competing hypotheses between which we adjudicate in this paper. On the first view, the incumbent agency has more information about an executive's human capital than does the raiding organization and will effectively counter an outside offer for the best employees, allowing only "lemons" – those with low levels of human capital generally – to leave (Greenwald 1986). In the public sector context, this implies that an agency is better informed about an executive's abilities than the raiding organization and concentrates its efforts on retaining high-quality employees.<sup>2</sup> Firms are unwilling to hire from the pool of agency leavers

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<sup>2</sup> Of course, the discussion of valuation by the outside market and incumbent agency raises the question of whether government agencies are more limited in their ability to retain employees with attractive outside options – particularly those offering high salaries – than their private sector counterparts. That said, agency executives have utilized creative ways of retaining valued employees. Light (1995) partly attributes the thickening of executive hierarchy and the dramatic increase in titles as the result of executive efforts to retain valued employees. New titles and the accompanying higher pay can be used to preempt or respond to attractive outside options. Federal agencies are also making use of new flexibilities in personnel and pay systems to respond to market pressures, either new

because they have proven to be lemons –having less human capital than those retained by the incumbent agency. The argument thus claims that turnover hurts leavers’ future market opportunities (Gibbons and Katz 1991).

To form a competing second perspective, Lazear (1995b) disentangles the agency-specific value of an employee from their market value. He distinguishes the market worth ( $M$ ) of the executive from her worth to the government agency in which she works ( $M+S$ ), where  $S$  is her agency-specific human capital not valued by potential outside employers.<sup>3</sup> If  $S > 0$  the executive is better suited to government service, while if  $S < 0$ , she is better suited to the outside option. Lazear (1995b) asserts that turnover only occurs when  $S < 0$  since the raiding organization is willing to pay a higher wage than the agency. If  $S > 0$  turnover will not occur since the employee is more valuable to the agency than to the raiding organization. This implies that leavers are not the “lemons” anticipated in Greenwald (1986), but, rather, those with a low  $S$ , better suited to the outside suitors. The human capital valuation done by the incumbent agency isolates the executive’s value of  $S$  allowing the agency to apply the foregoing decision rule. When considering retention, the incumbent agency considers agency-specific human capital and the raiding organization does not.

Executives are aware of such processes within their agencies and certainly hear about outside options and retention decisions throughout their tenure with an agency. Executives

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special pay systems for specific jobs (e.g., doctors, scientists) or individual agencies (e.g., Fannie Mae). These tools are employed in addition to the host of informal rewards that can be distributed including office space, staff assistance, portfolios of new responsibilities and power, invitation to key meetings and events, nomination for awards (e.g., Senior Executive Service merit pay or awards), and public recognition in agency publications, events, or meetings. Importantly, influence over policy is one of the non-pecuniary benefits that can make up for relatively lower agency wages when outside options are available. We subsequently return to this discussion.

<sup>3</sup> In the Lazear formulation,  $S$  reflects agency-specific human capital that is not attractive to outside suitors. While we do not do so here, it is possible to conceive of  $S$  as sector-specific human capital rather than agency-specific human capital. In such a case,  $S$  may be valuable to other organizations, particularly other public sector organizations or, alternatively, private and not-for-profit organizations working in a particular policy area. This presents an opportunity for future research.

condition their decision to announce turnover intention on such information; that intention is impacted by cumulative information processed over time by the executives. As such, we propose to utilize incentives uncovered in the personnel economics literature that generate predictions about turnover conditional on offers and counterproposals to develop an understanding of executive turnover intention that is novel in the field of public management. Specifically, we test a set of claims implied by the personnel economic theories we have reviewed in a public sector context. As we have discussed, Lazear (1995b) claims that agency-specific human capital is valuable to the incumbent agency (valuing  $M+S$ ) and not the raiding organization (valuing  $M$  only). Thus, we test the following hypothesis.

H1 (Agency-specific investments): As agency-specific human capital increases, turnover intention declines.

Agency executives with lots of agency-specific expertise ( $S$ ) are valued less by outside suitors than by the incumbent agency because of the specialized nature of their knowledge. Raiding organizations make their valuations of the employee based upon transferable knowledge and skills ( $M$ ) rather than the sum total of an executive's human capital ( $M+S$ ). Therefore, executives with high values of  $S$  should have lower turnover than those with low values of  $S$ . This does not imply that executives with agency-specific expertise ( $S$ ) will never leave. Indeed, wage differentials between organizations can emerge for a variety of reasons (e.g., rigid pay structures, pension vesting) and different factors cause executives to leave, including a loss of policy influence, which we discuss below. We have claimed that such valuations of human capital provide information to incumbent executives that condition their responses to questions about turnover intention. We also note that a negative relationship between agency-specific human capital and turnover intention may be produced through causal processes that do not involve agency valuations of employees, for instance, the logic in Gailmard and Patty (2007).

The contrasting positions of Greenwald (1986) and Lazear (1995b) can be disentangled in the event that outside options present themselves. Given the nature of public service, some federal executives work in contexts where the market for their labor is thin. Others, however, work in areas where the federal government and other organizations compete for skilled labor. Obviously, turnover intention should be higher when the market for federal executives' labor is robust. When the market for agency executives is robust, however, we can also observe the relationship between (agency-specific) human capital and turnover intention and determine whether leavers are lemons or capable. If human capital is negatively correlated with turnover intention in the presence of outside options, this suggests that leavers are lemons (Greenwald 1986). If, however, human capital is positively correlated with turnover intention when outside options are present, this suggests leavers are capable. Lazear (1995b) requires that the market pay nothing for agency-specific human capital, so it should not escape into the market unless it is correlated with externally-valued skills. By measuring the perceived the availability of outside options for executives in an agency, we can distinguish between competing implications of these claims for turnover intention. We arbitrate the following competing hypotheses.

H2 (Leavers are Lemons): As agency-specific human capital increases, turnover decreases, and that decline continues as the perceived probability of an outside option increases.

H3 (Leavers are Capable): As agency-specific human capital increases, turnover decreases, and that decline is reversed as the perceived probability of an outside option increases.

According to the hypothesis 2, turnover intention should decrease as (agency-specific) human capital increases since high human capital employees are most valued by the incumbent agency, which will be aggressive in providing a suitable counteroffer. On the second view, however, employees with high agency-specific human capital (S) could leave the agency if agency specific

human capital is correlated with highly marketable skills (M). If turnover intention is positively correlated with (agency-specific) human capital when outside options are available, this suggests that leavers are capable. If turnover intention is negatively correlated with agency specific human capital when outside options are available, evidence would suggest that leavers are lemons.

The ability of agencies to “pay” employees a wage sufficient to retain them relative to what a raiding organization offers them often depends fundamentally on the agency’s ability to provide sufficient non-pecuniary benefits. Chief among these is influence over policy. Indeed, the crux of the public service motivation claim lies in the role of functional preferences (Brehm and Gates 1997; Bertelli 2007). Functional preferences are satisfied when a federal executive believes that he or she can influence the design and implementation of public policy. If the executive perceives that the potential for policy influence is real, though not certain, that executive will be less likely to express an intention to leave his or her position (Lewis 2008). This lies at the heart of the mechanism described in Gailmard and Patty (2007); policy influence gives incumbent executives the incentive to gain expertise – to acquire agency-specific human capital and broader policy expertise – and to remain in their position with the agency. We test the following hypothesis.

H4 (Policy Influence): As executives perceive a greater opportunity to influence public policy, they are less likely to announce turnover intention.

The nature of the argument that we empirically assess can be summarized as follows. Federal executives, like their counterparts in the private sector, respond to market opportunities. Market opportunities generate a valuation of incumbents’ human capital – whether in specific cases or general examinations as noted above – that provides information to executives throughout the agency. This information shapes turnover intention. We now turn to a description of our data set and a discussion of the statistical models used to assess these claims.

## Data, Variables, and Methods

To measure turnover intention among federal executives this paper uses data from the 2007-2008 Survey on the Future of Government Service, a web-based survey conducted by the Princeton Survey Research Center.<sup>4</sup> The overall response rate for the survey is 34% (2,398/7,151).<sup>5</sup> In general, the sample of respondents looked very similar to the population of interest (federal administrators and program managers).<sup>6</sup> Where there were differences, they involved variation in agency response rates, the level of the respondent in the hierarchy, office location, and gender.<sup>7</sup> The response rate was noticeably higher among some agencies than others and career professionals responded in higher percentages than appointees, but appointees are excluded from the present analysis.<sup>8</sup> The number of observations in the models estimated was further reduced through our exclusion of “don’t know” responses to questions as indicated below. There was a modest difference in response rates from national (31%) and regional

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<sup>4</sup> Contact information for all executives and program managers was obtained from Leadership Directories, Inc., publisher of the *Federal Yellow Book*. Of the 7,448 names in that list, 297 were no longer in their position or had erroneous contact information. Potential respondents were sent letters on Princeton University letterhead inviting them to participate with options about how to do so. Those having email addresses (77%) were told that they would receive the survey at that address one week after the initial letter or login to a website immediately with information included in the letter. All respondents with valid email addresses received an initial paper letter, an email invitation, up to three follow up email reminders, and a telephone call. The response rate from this group was 35%. Those for whom we did not have email addresses were asked to provide one or to login to the website directly with the password provided. Follow-up emails, letters, and ultimately, telephone calls were made. The most difficult respondents to reach – no email, initial letter, follow-up letter, telephone call, and final reminder letter – had a response rate of 20%. Of the 2,398 respondents, 2,069 completed the full survey.

<sup>5</sup> This response rate was calculated net of those respondents inappropriately included in the sample as this footnote details. The original list also included 461 potential respondents from the National Science Foundation (NSF) because the firm incorrectly labeled NSF program officers as managers or executives. If NSF employees are removed the response rate is 33% (2,250/6,690). In the sample, PhDs were also more likely to respond to the survey but this was undoubtedly a function of the oversample of the National Science Foundation.

<sup>6</sup> To verify whether the sample of executives was ideologically similar to the population the survey authors compared voter registration records of respondents to voter registration records of the population as a whole. They find no significant differences in the party registration of the sample and population (Bertelli et al. 2008).

<sup>7</sup> Lowest response rates by agency occurred in the Executive Office of the President (11%), the United States Post Office (15%), and the Department of the Treasury (20%). Highest response rates accrued for the Nuclear Regulatory Commission (56%), the Federal Trade Commission (63%), and the National Archives and Records Administration (71%).

<sup>8</sup> Only 102 Senate-confirmed (259 total) political appointees responded to the survey, quite a small number when compared to 2,021 career professionals. Of approximately 550 policy-relevant Senate-confirmed appointees, this amounts to a 19% response rate.

(35.7%) offices. Finally, there was a modest difference in response rates by gender, with 33.0% of men responding compared to 29.3% of women. Summary statistics for all variables are included in Table 1.<sup>9</sup>

The survey was not originally fielded to research federal labor markets but fortunately included a number of questions that can be used to measure the relationship between self-reported turnover intention and the theoretical concepts described above. However, since the survey questions were not necessarily written with these concepts in mind, they are very useful but imperfect measures. The following description of the variables includes a description of the shortcomings of the measures where they exist and our efforts to overcome these shortcomings. Ultimately, the analysis illuminates all four hypotheses but should be considered a first step in the larger effort to empirically evaluate the theoretical claims above.

#### TABLE 1 ABOUT HERE

##### *Dependent Variable*

Our survey asked careerist respondents, “How likely is it that you will leave in the next 12 months?” The response set for this question, which constitutes our dependent variable, is as follows with percentages selecting each category shown in parentheses: very likely (13.65%), somewhat likely (15.61%), somewhat unlikely (17.10%), very unlikely (50.56%), and not sure (3.08%). Combining the responses in the “very likely” or “somewhat likely” categories shows that nearly one third of the top senior civil servants in the federal government revealed a likelihood of leaving their jobs within one year. Those agencies having the highest percentages of turnover intention were the non-service portions of the Department of Defense (41%), the Federal Trade Commission (40%), and the General Services Administration (37%); those having

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<sup>9</sup> We have also estimated the models in the paper with survey sample weights but the results do not differ appreciably from those in the main text. Results are available from the authors upon request.

the lowest were the Nuclear Regulatory Commission (15%), the Department of the Navy (20%), and the Department of Justice (21%). These responses suggest that the problem illustrated by FEMA vacancies is real and significant. Understanding these patterns is essential to the provision of quality public services and the performance of competent regulatory activities by the federal government.

#### *Agency-specific human capital*

Our expectation is that both labor market and political factors will influence turnover intention among career federal executives. To measure the degree of agency-specific human capital possessed by the responding executive we rely on a question from the survey that reads: “Please indicate your level of agreement or disagreement with each of the following statements about your job and work setting: “Necessary expertise for my job can only be gained through experience working in my agency.” The response categories and percent of respondents selecting them are “strongly agree” (17.1%), “agree” (33.5%), “disagree” (40.8%), “strongly disagree” (8.2%), and “don’t know” (0.4%).<sup>10</sup> “Don’t know” responses have been excluded from our analysis. Responses have been recoded such that higher values indicate more agreement.

This question measures whether the skills necessary for the respondent’s work in the agency are available in the private market. Higher values indicate that important skills are agency-specific. While the question does not ask whether the respondents themselves have these skills, respondents who believe that necessary expertise has to be learned on the job probably have more agency specific human capital than those who do not believe necessary expertise has

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<sup>10</sup> Agencies with the highest values include the Department of Homeland Security and the National Labor Relations Board while those having the lowest include the Federal Trade Commission and the Department of Education.

to be learned on the job.<sup>11</sup> The question also does not specifically ask about the *transferability* of the skills derived from work on the job and some of these skills may be attractive in related organizations outside the incumbent agency. However, this question does measure the necessity of acquiring skills for which there is a less robust market on average. Executives who must invest time and effort in acquiring agency-specific expertise forgo opportunities to develop other, more general skills, and may require retraining should they take a job outside the agency. This influences valuations of the executive by both outside organizations and the agency itself. In addition, those respondents who say “necessary expertise for my job can only be gained through experience working in my agency” are no more likely to report approaches by outside employers to executives at their level. If answers to this question measure transferable human capital we would expect such answers to be correlated with greater outside approaches by private sector employers.<sup>12</sup> This is also exactly what we should expect if M and S in the theory are distinct. Hypothesis 1 states that higher values are expected to be associated with a lower likelihood of turnover intention since site-specific knowledge makes employees more valuable to their agency employers.

### *Outside Options*

To measure outside options we ideally would have a measure of specific market valuations of the respondent. While do we do not have this information, we do have a measure that captures perceptions about the variation in the private sector labor market surrounding an agency. This taps a variety of valuations, not just responses to outside offers. Specifically, we

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<sup>11</sup> We have also estimated models on the subset of respondents with more than 20 years of federal government experience under the assumption that these executives have had sufficient time to learn what needs to be learned in an agency. The results confirm what is reported here and are included in Appendix A.

<sup>12</sup> In addition, if this measure captures expertise valued by the market, it will lead us to *underestimate* the true effects of agency-specific expertise. If our measure captures market-valued expertise rather than just agency-specific expertise, then higher values should lead to higher turnover intention but we observe just the opposite, that increased expertise leads to *lower* turnover intention.

measure the perceived availability of outside offers with a question that asks “How often do former agency employees in the following groups (senior civil servants) accept jobs with firms that do business with your agency?” The response set and percentages in each category are as follows: “frequently: (9.6%), “regularly” (19.9%), “sometimes” (34.7%), “rarely” (14.6%), “never” (3.8%), “don’t know” (17.5%).<sup>13</sup> As before, “don’t know” responses have been excluded. Responses have been recoded so that higher values indicate that senior executives frequently take jobs with firms that do business with their agency (e.g., government contractors). Higher values are anticipated to be positively related to turnover intention because the presence of outside options triggers the human capital valuation that conditions respondent perceptions according to the logic we presented above. To test hypothesis 3, we include an interaction between the agency-specific expertise and outside option measures.

While outside options include a range of organizations and opportunities, we focus on a common source – private firms (e.g., contractors) that do business with the agency.<sup>14</sup> The data do not allow us to speak to the influence of outside options from other sources (e.g., local governments, other firms) but the market valuation provided by the private sector is a reasonable proxy for outside wage offers in general. It is also important to note that this measure taps outside options from a subset of firms impacted by agency operations. As such, agency-specific human capital may be rewarded by those firms to a greater extent than the external labor market more generally. It remains the case that a significant complement of agency-specific knowledge

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<sup>13</sup> Among the agencies with the highest values are the Federal Trade Commission and the National Aeronautics and Space Administration. Agencies with lower values include the National Labor Relations Board and the Department of Agriculture. We have also estimated models with a series of indicator variables corresponding to the possible answers to this question and including the “Don’t know” responses. These unreported results confirm what is reported in Table 2.

<sup>14</sup> Some caution should be exercised in interpreting this variable since the same forces that predict the job choices of others in the agency may predict turnover intention by the respondent. While we have tried to model these forces explicitly, it is possible that omitted factors remain that predict both this variable and the dependent variable.

and skills – for instance, internal agency operational procedures – are unlikely to be highly valued.

Of course, respondent perceptions of the career choices of their colleagues may be measuring behavior (what we hope to explain) rather than opportunity. This is a limitation of the data. We have also estimated models using other proxies in the data for the outside market. Specifically, we measure outside options based upon differences in what respondents do, noting that those respondents directly involved in key policymaking decisions will be more attractive to employers than those without such access, experience, and expertise. In models estimated with these proxies for the market the results were similar and are included in Appendix A.<sup>15</sup>

### *Perceptions of Policy Influence*

Perceived policy influence is measured by a survey question that asks “In general, how much influence do the following groups have over policy decisions in your agency? [Senior civil servants, Political appointees]” The response sets and percent of respondents choosing each category (Senior civil servants, Political appointees) are as follows: “A great deal” (26%, 48%), “A good bit” (36%, 31%), “Some” (26%, 13%), “Little” (7%, 3%), “None” (2%, 2%), and “Don’t Know” (3%, 4%). We calculate a measure of relative influence by subtracting the response regarding political appointees from that regarding senior civil servants. This yields a variable taking values in the interval [-4,4] with higher values corresponding to more perceived

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<sup>15</sup> While the precision of the estimates varies, the substantive effects are similar to what is reported in the text. As proxies for outside options we use two measures. First, we use details about involvement in agency decisions about distributive benefits (0 – 3; sum of yes answers to below questions). “Does your job deal directly with decisions about: Procurement or the content of contracts with private firms? (Yes, No); Licenses or loans granted to private firms or citizens? (Yes, No); Grants to state and local governments, other organizations, or individuals? (Yes, No)” Second, we use self-reported pay level (3-Executive Pay Schedule; 2-Senior Executive Service; 1-GS Pay Schedule; 0-Other) with the idea being that those with higher pay are more involved in key policymaking decisions. The model estimates using the first measure are imprecise ( $p < 0.15$  in two-tailed;  $p < 0.075$  in one-tailed test) but they suggest that more agency-specific expertise is correlated with decreased turnover intention but this correlation is mitigated by outside options. Models estimated with the second measure are estimated precisely and show the same results. Executives with agency-specific expertise are most likely to leave but this effect is mitigated for those executives highest up in the hierarchy (i.e., greatest outside options).

influence by careerists and lower values indicating that political appointees are perceived to be more influential.<sup>16</sup>

### *Control Variables*

The models also include a number of respondent- and agency-specific controls that prior studies have shown to be correlated with both turnover intention and other covariates. The survey includes a series of questions regarding a respondent's ideology, level of experience, age, retirement eligibility, as well as important structural features of the agencies in which he or she works. To control for a respondent's ideology we include ideal point estimates from Clinton, Bertelli, Grose, Lewis and Nixon (2012), which were calculated using respondents' stated responses to fourteen questions about how they would have voted on actual bills considered in Congress. Higher values indicate more conservative views. The influence of ideology on turnover intention is unclear. On the one hand we anticipate that the greater disagreement between the career professional and the president, the more likely it is that the careerist will express an intention to leave. As President George W. Bush was conservative, liberal career professionals should be the most likely to leave. On the other hand, given the timing of the survey, the most liberal career executives may already have left and continuing career executives may be anticipating the next administration. Specifically, conservative executives may be more inclined to leave if their expectation was that a Democrat (or moderate Republican) would win the White House.

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<sup>16</sup> We have also estimated models using a second indirect measure, using responses to the following question: "Do you agree or disagree with the following statement: I generally approve of the changes the current administration's political appointees and non-career executives have made in my agency?" Response categories and percentage of respondents selecting each are "strongly agree" (4%), "agree" (35%), "disagree" (28%), "strongly disagree" (15%), and "don't know" (18%). More disagreement implies less policy influence. In these models, diminishing approval with the changes made by appointees from approval (agree) to disapproval (disagree) increases turnover intention by 3 to 4 percentage points.

Survey respondents were asked to provide the number of years they had worked for the federal government and their age. The models control for each of these factors (see e.g., Moynihan and Landuyt 2008). They also include squared terms for each measure as increasing tenure or age may be good predictors of continued service up to a point when they begin to increase the probability of retirement. The survey also asks respondents “Are you or will you become eligible to retire in the next 12 months?” and provides “yes”, “no” and “don’t know” response alternatives. On average, half of the career executives in our sample reported that they were or would become eligible to retire within one year.<sup>17</sup> Obviously, executives who are eligible for federal retirement are more likely to leave their agencies.

Our models also include an indicator for whether or not an agency is an independent commission (0,1; 6.8%). These agencies often are specifically designed for insulation from political influence (Lewis 2003; McCarty 2004; McCubbins, Noll, and Weingast 1989; Moe 1989). Commissions typically include party-balancing requirements and fixed and staggered terms for appointees and are free from OMB’s regulatory and budgetary review.<sup>18</sup> Independent commissions should be less influenced by political interference than other agencies in the cabinet or with structures similar to cabinet agencies.

Because the dependent variable we employ is ordered and categorical, distances between categories may not be equal. Consequently, we estimate ordered probit models of the responses to the turnover intention question. Observations are not independent because executives often work in the same agencies. To account for this, we report White (1982) heteroscedasticity-robust standard errors clustered by agency.

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<sup>17</sup> The agencies with the highest percentage of retirement eligible executives were the National Aeronautics and Space Administration, the National Archives and Records Administration, and the Department of Health and Human Services. Those having the lowest response rates included the departments of Labor, State, and Homeland Security.

<sup>18</sup> They can promulgate rules without OMB review and submit their budgetary requests directly to Congress (Lewis 2003).

## Results

Estimates for the models of respondent turnover intention are included in Table 2. These models provide important insight into the relationship between the human capital of the employee, outside opportunities, policy influence, and turnover intention. Generally, respondents with high agency-specific human capital are less likely to express an intention to leave their jobs while those presented with significant outside options are more likely to express that intention. A notable exception to this general pattern is that executives with highest levels of agency-specific human capital were slightly more likely to indicate an intention to leave when plentiful outside options were available. This implies that agency specific human capital is correlated with general human capital and those executives departing federal agencies are capable rather than lemons. Executives working in agencies where senior civil servants have significant policy influence relative to appointees are also less likely to leave.

### TABLE 2 ABOUT HERE

Common causes of turnover intention in previous work similarly influence turnover intention here and this commonality gives us confidence in our models. We could not reject the null hypothesis that respondent ideology was unrelated to turnover intention. All of the variables related job experience, respondent age, and retirement eligibility predict turnover intention in the expected ways.

Experience working in the federal government has the expected effect on turnover intention. The coefficient on length of service and the coefficient on the square of length of service are marginally significant or significant in the expected direction in both models. The coefficient estimates indicate that the longer a respondent has worked for the federal government, the less likely they are to express an intention to leave. This is true up to a point.

Eventually, longer service is correlated with an increasing intention to leave. Increasing tenure from 10 to 20 years is estimated to decrease turnover intention by two percentage points. Increasing tenure from 30 to 40 years, however, increases the likelihood of expressing intent to leave by four percentage points. Respondent age also has a similar effect on turnover intention. The coefficient on the main effect and the squared term are in the expected direction and significant in all the models. Substantively, the age of the respondent initially decreases and then increases the probability of leaving the agency. For the average respondent, increasing their age from 45 to 55 decreases their chances of expressing a desire to leave by 6 percentage points. Increasing their age from 55 to 60, however, does not influence their chances of expressing turnover intention. Increasing age from 60 to 70 increases the probability of saying they are likely or very likely to leave by 4 percentage points.

In both models the coefficient on retirement eligibility is positive and significant at the 0.05 level, indicating that retirement eligibility increases the probability of turnover intention. An executive who is retirement-eligible is 26 percentage points more likely to indicate that they are likely or very likely to leave in the next 12 months.

Our evidence from the models in table 2 suggests that agency-specific human capital drives down turnover intention supporting hypothesis 1. The coefficient on agency-specific human capital is negative and significant in both models. Substantively, if a respondent replies that they agree or strongly agree with the statement that necessary expertise can only be learned on the job, they are 3 to 6 percentage points less likely to report an intention to leave their agency than an employee who disagrees with this statement. Given that 30 percent of survey respondents expressed an intention to leave, this is a notable effect (i.e., a 10 to 20 percent increase in turnover intention). This is important evidence that investments in specific expertise can create a

hold-up problem for the employee. The executive's investment in specific expertise appears not to be rewarded in the market, making it more likely that they will continue to work in the agency. This supports Lazear's (1995a) claim about the effects of agency-specific human capital on turnover intention.

As noted, it may support a mechanism such as that of Gailmard and Patty (2007) that does not rely on agency valuations of human capital. Testing the importance of agency valuation in this story would be an interesting and important question for future research. The data in the table do not allow us to discern whether those with high agency specific human capital were motivated to acquire it because they supported the agency work and its mission (zealots) or whether the agency and its system of work and rewards created the right incentives for them to acquire this expertise. It is interesting to note, however, that among survey respondents, those who report that they started working for the agency because they supported its mission are more likely to report the importance of learning on the job than those who report that they started working for the agency for almost any other reason (e.g., salary, make a difference, skills and abilities, etc.).

Not surprisingly, the perceived availability of outside options increases the probability that a respondent will express intention to leave. Those executives without private sector options may retire but are not afforded an external employment opportunity. This makes it less likely they will leave the agency compared to those employees with outside options. The coefficient on outside options in the model without interactions is positive and significant and indicates that respondents who report that former agency employees "regularly" accept jobs with firms that do business with their agency are 2.2 percentage points more likely to report that they are likely or very likely to leave in the next 12 months compared to respondents who report that former

agency employees “sometimes” accept jobs with such firms and 4.4 percentage points more likely than respondents who report that former agency employees “rarely” accept such jobs.

As we have stated, the influence of outside options on turnover intention is conditional on the presence of agency-specific human capital and is assessed via an interaction term. In model 2 the interaction term of agency-specific human capital and outside options is significant and improves the fit of the models (LR tests;  $p < 0.00$ ). We depict the interactive relationship between these two concepts in Figure 1. The pattern displayed in Figure 1 is consistent with the claim in hypothesis H3 (Lazear 1995b). In most cases, executives are less likely to leave the more agency-specific human capital they have. This is illustrated by the downward sloping lines. When no outside options are present, a one unit change on the agency-specific human capital question is estimated to decrease the likelihood of a respondent will report that they are “likely” or “very likely” to leave within 12 months by 8 percentage points.

What happens when outside options are available to executives with agency-specific expertise and what does this imply for our understanding of turnover intention and labor markets? The estimates indicate that executives are slightly *more* likely to leave when they have agency specific human capital and there are plentiful outside options. A one unit increase in the response to agency-specific human capital question is estimated to increase the probability that a respondent is “likely” or “very likely” to leave by 1-2 percentage points. According to the logic we have presented, this implies that agency specific human capital is flowing into the market (i.e., leaving the agency) because it is correlated with general human capital. The federal executives that invest in agency expertise also do other things well. In other words, intended leavers are not lemons and turnover intention may foreshadow valuable skills being drained from the agency.

One puzzling aspect of Figure 1 is that for those reporting that agency-specific human capital is not necessary in their agency, increasing outside options does not increase their turnover intention. This finding should be interpreted with some caution, however, since there are few real world cases that fit some parts of Figure 1. There are only 13 cases in the dataset where the respondent strongly disagreed with the statement that “Necessary expertise for my job can only be gained through experience working in my agency” and had abundant outside options. The linear nature of the interaction distorts the true relationship between agency specific human capital, outside options, and turnover intention. Respecifying the model so that the different values of agency specific human capital are indicators rather than a continuous term clarifies the picture. For all other configurations of agency-specific human capital and outside options, increasing outside options increases turnover intention.

Our findings have important implications for our understanding of the federal personnel system. Designing institutions that induce federal executives to invest in agency-specific human capital will not guarantee the federal government an advantage in the competition for labor with the private sector. One explanation for the fact that executives are responsive to outside wages even in the presence of high agency-specific investments is that that the federal government may not be making appropriate valuations.<sup>19</sup> One possibility is that appointed leaders may not make appropriate evaluations because of turnover in the appointee ranks (Dull and Roberts 2009). Senate-confirmed positions are vacant close to a quarter of the time overall and more in some agencies (O’Connell 2009). Regular vacancies mean that new appointees frequently enter office. New appointees may prefer turnover because it allows them to cycle through executives in order

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<sup>19</sup> This could be the case for a number of reasons. Agencies may make the wrong valuation or be constrained by the pay system or cost of promoting a new executive and training them in providing them an appropriate counter-offer. Of course, the decision of an executive to leave may have nothing to do with the valuation or counteroffer since executives leave public service for a number of different reasons. In general, however, if an agency does not make a proper valuation, this is going to increase the chances an executive departs.

to gather information about a broader set of potential managers. Alternatively, to the executive may leave because the agency has not produced appropriate counterproposals.

One of the non-pecuniary ways that the federal government can compensate federal executives is by providing them influence over policy. Hypothesis 4 postulates a negative relationship between perceived policy influence and turnover intention. In Table 2, the coefficient on relative policy influence is negative and significant, indicating that when careerists have more policy influence, they are less likely to leave. Moving from one standard deviation below to one standard deviation above the mean in relative policy influence – from substantially restricted to a great deal of influence – decreases turnover intention by 4 percentage points. Figure 2 further illustrates this substantive effect over the full range of appointee vs. careerist influence. In the agencies where appointees exert the most influence, respondents are most likely to express an intention to leave.

## **Conclusion**

Given the benefit of hindsight, it is natural to wonder whether executives in the Federal Emergency Management Agency could have done more to stem the tide of executive departures in the agency. Executive turnover in the agency directly influenced the capacity of the agency to respond to Hurricane Katrina. As early as 2002 FEMA was rated the worst place to work in government and by 2005 the agency was plagued by deteriorating morale, conflict between careerists and appointees, and persistent vacancies (Lewis 2008). Key senior civil servants who had served in leadership positions in the Clinton and Bush administrations found other options outside the agency more attractive, some in state emergency management bureaucracies. Part of the dissatisfaction in the agency stemmed from policy disagreements stemming from a renewed focus on terrorism preparedness. The inclusion of the new agency in the Department of

Homeland Security also promised less influence for FEMA careerists over the direction and priorities in the agency. Our research suggests that the combination of reduced influence and outside options can be a recipe for executive exodus. This is what we observed.

Those departing careerists had high agency-specific human capital that was not easy to replace. Existing research suggests that these employees should be particularly valued by agency senior leaders. Could more have been done to retain these employees? This question highlights an important theme in this paper. An underappreciated part of the turnover story is the role that senior agency officials play. They can stanch or augment the flow of executives from an agency by their choices. While agency employees decide to stay or leave on the basis of their outside options and policymaking opportunities within the agency, the attractiveness of outside offers and the amount of influence are importantly influenced by the choices of agency senior leaders. Appointed executives at the very highest levels can manipulate formal and informal rewards to agency employees to keep valued executives. This is an increasingly important aspect of public management.

Our focus has been to suggest how ideas from personnel economics explain some aspects of executive turnover intention in the federal service. Our empirical estimates suggest that these concepts explain some of the variance in turnover intention in a rich, novel data set and should be considered seriously. We hope that our efforts will inspire future work to disentangle how much of the variance is explained by various competing explanations of this important phenomenon in public administration and policy. In the case of FEMA, some turnover was natural given the disagreements between the new administration and continuing professionals in the agency. That said, the extent of executive turnover was aided by turnover in the appointee team itself. President George W. Bush's first FEMA head, Joseph Allbaugh, and many of his

team departed when it became clear that FEMA would be integrated into the new Department of Homeland Security. By the fall of 2004, 17 of the agency's 46 policy and supporting positions were vacant (U.S. Congress 2004). When there is no consistency or regularity in the appointee team, it is less likely that senior agency officials will appropriately value career employees with site-specific expertise and outside options and take actions to keep them in the agency. The consequences of these choices on agency performance and for the nation can be dramatic.

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**Table 1: Summary Statistics**

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>Minimum</b>	<b>Maximum</b>
Turnover Intention	1,825	1.92	1.11	1 (very unlikely)	4 (very likely)
Agency-Specific Human Capital	1,724	1.64	0.86	0 (strongly agree)	3 (strongly disagree)
Outside Option	1,552	2.20	1.01	0 (never)	4 (frequently)
Relative Influence Over Policy	1,684	-0.45	1.12	-4 (appointees dominate)	4 (careerists dominate)
Respondent Ideal Point	1,584	-0.11	0.75	-1.63 (very liberal)	1.94 (very conservative)
Years Employed	1,925	26.21	9.90	0	61
Age of Respondent	1,680	54.46	7.02	21	90
Eligibility to Retire	1,702	0.49	0.50	0	1
Independent Commission	1,925	0.08	0.27	0	1

**Table 2: Ordered Probit Estimates of Models of Employee Turnover Intention**

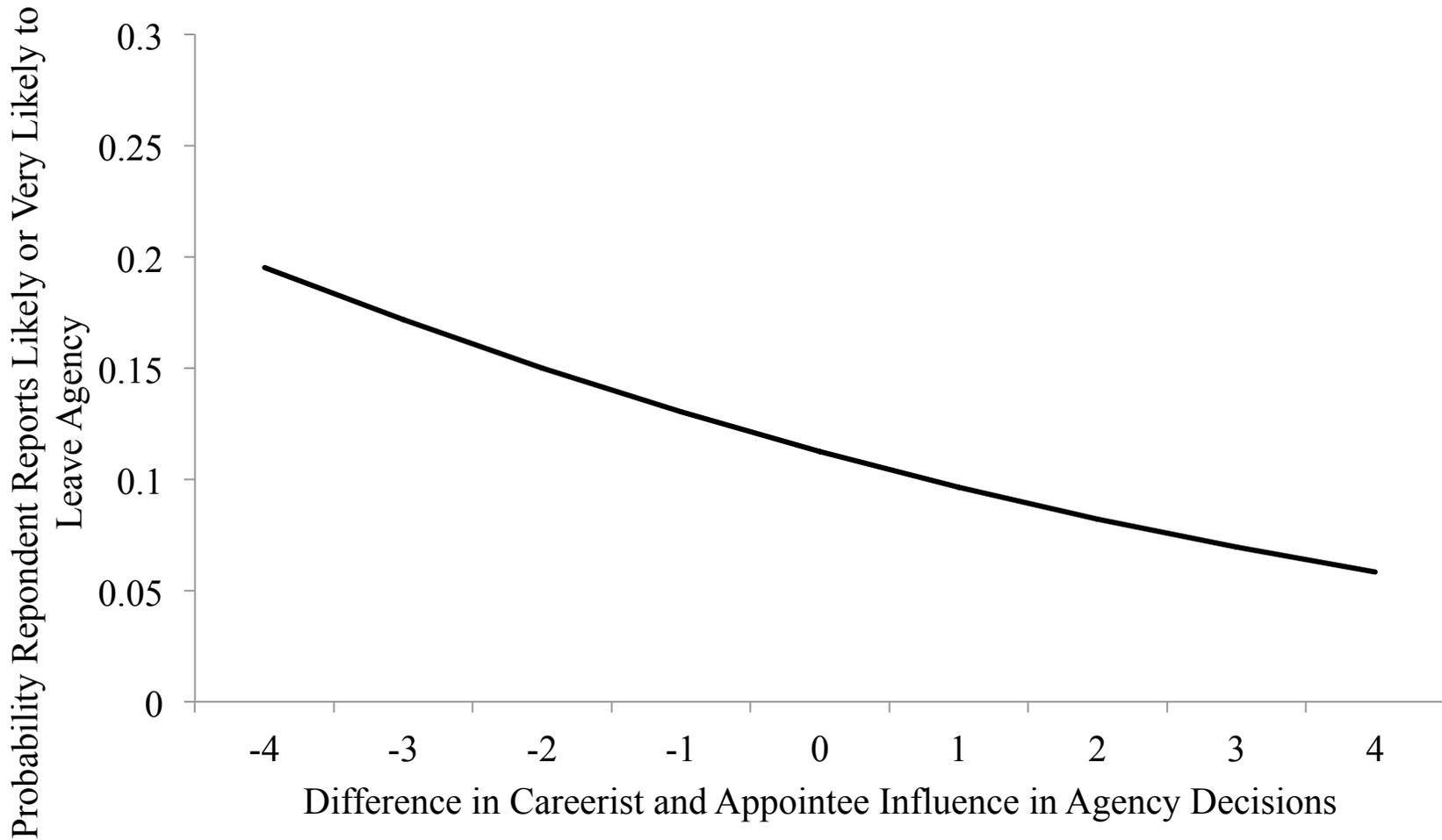
Covariates	(1)	(2)
<i>Key Independent Variables</i>		
Agency-specific Human Capital (0-3)	-0.13** (0.04)	-0.39** (0.10)
Outside Option (0-4)	0.06* (0.03)	-0.12* (0.07)
Agency-specific*Outside Option	--	0.11** (0.04)
Relative Influence of Careerists vs. Appointees (-4 to 4)	-0.09** (0.03)	-0.09** (0.03)
Extent of executive approval of appointee changes (0-3)	--	--
<i>Controls and cut points</i>		
Respondent ideology	0.08 (0.06)	0.08 (0.06)
Years Employed	-0.03** (0.02)	-0.03** (0.02)
Years Employed Squared	0.00** (0.00)	0.00** (0.00)
Age of Respondent	-0.14** (0.04)	-0.15** (0.04)
Age Squared	0.00** (0.00)	0.00** (0.00)
Eligibility to retire (0,1)	0.89** (0.10)	0.89** (0.10)
Commission (0,1)	-0.13 (0.14)	-0.11 (0.14)
$\tau_1$	-3.90 (0.97)	-4.55 (1.02)
$\tau_2$	-3.42 (0.97)	-4.07 (1.01)
$\tau_3$	-2.79 (0.97)	-3.43 (1.02)
$X^2(10, 11, 10, 11 \text{ df})$	232.59**	241.18**
LR test of Nested Models (1 v. 2; 3 v. 4)	--	8.89**
Number of Clusters	122	122
Number of Observations	1,220	1,220

Note: \*\*significant at the 0.05 level; \*significant at the 0.10 level in two-tailed tests. Robust standard errors adjusted for clustering on agency in parentheses.

Figure 1. Influence of Agency-Specific Human Capital on Turnover Intention by Existence of Outside Options



Figure 2. How Executive Policy Influence Changes Probability of Turnover



Note: Values greater than 0 imply more relative careerist influence. X-axis variable is difference in response to "In general, how much influence the following groups have over policy decisions in your agency? [senior civil servants, political appointees]" None (0); Little (1); Some (2); A good bit (3); A great deal (4). Don't know responses omitted.

**Table SA1: Ordered Probit Estimates of Models of Employee Turnover Intention**

Covariates	(1)	(2)	(3)	(4)
<i>Key Independent Variables</i>				
Agency-specific Human Capital (0-3)	-0.08 (0.06)	-0.30** (0.14)	-0.19** (0.06)	-0.41** (0.07)
Outside Option: Civil Servants leaving for firms doing business with agency (0-4)	0.15** (0.05)	-0.04 (0.11)	--	--
Outside Option: Respondent level inside agency (0-3)	--	--	--	-0.29** (0.07)
Outside Option: Respondent involvement in contract, grant, license, loan disbursement decisions (0-3)	--	--	-0.07 (0.08)	--
Agency-specific*Outside Option	--	0.10* (0.06)	0.06 (0.04)	0.16** (0.04)
Relative Influence of Careerists vs. Appointees (-4 to 4)	-0.13** (0.06)	-0.12** (0.05)	-0.11** (0.03)	-0.10** (0.03)
<i>Controls and cut points</i>				
Respondent ideology	0.06 (0.08)	0.06 (0.08)	0.05 (0.05)	0.08 (0.05)
Years Employed	0.06 (0.04)	0.06 (0.04)	-0.04** (0.01)	-0.03** (0.01)
Years Employed Squared	-0.00 (0.00)	-0.00 (0.00)	0.00** (0.00)	0.00** (0.00)
Age of Respondent	0.05 (0.16)	0.04 (0.16)	-0.13** (0.03)	-0.12** (0.03)
Age Squared	-0.00 (0.00)	-0.00 (0.00)	0.00** (0.00)	0.00** (0.00)
Eligibility to retire (0,1)	0.82** (0.15)	0.82** (0.15)	0.89** (0.09)	0.87** (0.09)
Commission (0,1)	-0.24* (0.12)	-0.23* (0.12)	-0.10 (0.13)	-0.12 (0.14)
$\tau_1$	3.81 (4.63)	3.17 (4.77)	-3.66 (0.82)	-3.82 (0.80)
$\tau_2$	4.28 (4.63)	3.64 (4.76)	-3.18 (0.82)	-3.35 (0.80)
$\tau_3$	4.91 (4.63)	4.27 (4.76)	-2.55 (0.83)	-2.71 (0.80)
$X^2(10, 11, 10, 11 \text{ df})$	161.77**	191.97**	229.92**	259.39**
Number of Clusters	95	95	123	123
Number of Observations	638	638	1383	1427

Note: Models 1 and 2 estimated using only respondents with greater than 20 years experience in their agency. Models 3 and 4 employ different measures of outside market opportunities. \*\*significant at the 0.05 level; \*significant at the 0.10 level in two-tailed tests. Robust standard errors adjusted for clustering on agency in parentheses.

**Figure SA1. Influence of Agency-Specific Human Capital on Turnover Intention by Existence of Outside Options, Respondents with Greater than 20 Years Experience Only**

