The Politicization of Federal Agencies and Its Consequences: Agency Design, Presidential Appointments, and Policy Expertise

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Introduction

The executive branch of the United States government contains 15 executive departments, more than 60 independent agencies, and employs over 2.5 million civil servants.[1] Using authority delegated to their agencies by law, these civil servants make and implement policies that influence virtually all aspects of modern life from the quality of the food we eat to the security of our nation. Importantly, policymaking and implementation are only the final steps in a sequence of decisions that determines the content and quality of public policy. Before civil servants begin their work, the structure of an agency must be defined through statute or executive action, including determining the influence that elected officials will have over agency policymaking (Lewis 2003; Selin 2015). Once created, agencies tend to persist for decades (Lewis 2004); therefore, agency structure will shape public policy beyond a presidential administration, Congress, or civil servant's career.

Presidents and Congresses do not create the expertise needed to formulate effective public policy along with the agency. Rather, policy expertise is dependent on agency personnel. After an agency is created, it must be staffed. The president selects political appointees to run the agency, and individuals choose to work at the agency as career civil servants. Political appointees set agency policy priorities and manage the career civil service, including making decisions about work assignments and, within statutory constraints, promotions, hiring, and firing. Presidential appointments are some of the most consequential decisions for civil servants' job satisfaction and, in turn, their career decisions. Civil servants' deci-

[1] See Lewis and Selin (2012, pg 13-16) for discussion of the various definitions of federal agency and the number of federal agencies listed by official sources. The Office of Personnel Management's Central Personnel Data File (CPDF) lists 2,044,419 federal employees as of March 2017. This data is available here: https://www.fedscope.opm.gov/employment.asp. However, this number excludes some agencies, like the United States Postal Service (USPS) and the Federal Reserve Board. The USPS employed 508,908 career employees and 130,881 non-career employees as of September 30, 2016 (http://about.usps.com/who-we-are/postal-facts/size-scope.htm, accessed July 21, 2017). The CPDF also excludes uniformed military personnel. Lewis and Selin (2012, page 12, footnote 27) collect data for agencies excluded by the CPDF and count 2.85 million civilian federal employees as of 2012.

sions about whether to remain in public service and, if so, whether to work hard building and applying policy expertise largely determine the stock of policy expertise in federal agencies across presidential administrations.

In this dissertation, I examine each step in the sequence of decisions preceding policymaking and implementation: agency design, presidential appointment strategies, and civil servants' career decisions. In the first chapter, I develop a formal model of the politics of agency design. Scholars have made much progress theorizing about elected officials' views about agency creation (e.g., Epstein and O'Halloran 1994; Epstein and O'Halloran 1999; Gailmard 2002; Lewis 2003; Wiseman 2009), but less progress has been made understanding the preferences of interest groups despite their prominent role in the politics of agency design (De Figueiredo 2002; Moe 1989). I examine how an interest group's preferences over the creation and subsequent insulation of a federal agency from political control vary as a function of three parameters: first, the group's expectation that it will be able to influence agency policymaking; second, the similarity between the group's policy preference and that of a representative civil servant who will work in the agency; and, finally, the similarity between the group's policy preference and that of an opposing group.

Overall, the model provides testable predictions about when interest groups prefer the creation of insulated agencies, uninsulated agencies, or no agency at all that can improve our understanding of agency design. I discuss how groups' expectations about their future policy influence may vary systematically by type of interest group environment, which yields predictions about which interest group environments are most likely to generate insulated agencies. I conclude this chapter by sketching a reformulation of the model that incorporates lawmaking under separation of powers and more dynamic interest group competition to generate predictions about what agencies will be created in equilibrium in addition to what agency groups prefer in equilibrium.

One aspect of agency insulation is the number of appointed positions in an agency. In the second chapter, I examine how presidents fill appointed positions. Scholars have

generated competing predictions about if and when it is optimal for the president to select political appointees whose policy views are as similar to the president's ideology as possible. A basic principal-agent model would predict that the president should always select an appointee that shares her ideology exactly (e.g., Bendor and Meirowitz 2004). Scholars have examined how Senate-confirmation may constrain presidents' ability to put their ideological clones in office (e.g., Bonica, Chen, and Johnson 2015) and how the fact that appointees must manage career civil servants may cause presidents to prefer appointees who oppose or share the ideology of these civil servants rather than an ideological clone of themselves (Jo and Rothenberg 2014).

I use two surveys of senior federal employees – one fielded at the end of President George W. Bush's second term and one fielded at the end of President Obama's second term to generate comparable estimates of the ideology of presidents, political appointees, and career civil servants. I then use the estimates to evaluate these predictions. I find that the ideology of the president is more similar to the ideology of appointees who the president appoints unilaterally than the ideology of appointees who must be confirmed by the Senate. This suggests that Senate confirmation does constrain the president's choice of appointee.

I find that, unsurprisingly, President Obama tends to select liberal appointees and President Bush tends to select conservative appointees. However, within administrations presidents tend to select appointees whose ideology is similar to the ideology of civil servants working in the agency. This finding is consistent with an underlying formal model (Jo and Rothenberg 2014) that emphasizes that career civil servants possess greater policy expertise than political appointees, which gives civil servants an informational advantage and causes presidents to select appointees with preferences similar to careerists to promote information sharing. This finding is also consistent with an underlying formal model in which political appointees vary in both ideological congruence with the president and policy expertise (e.g., Hollibaugh, Jr 2015). If the president requires appointees to have a minimum level of expertise and expertise is correlated with ideology, then there should be a posi-

tive correlation between the ideology of expert appointees and expert career civil servants. While additional work is needed to isolate the mechanism responsible for the correlation, the finding implies that presidents are willing to trade some ideological congruence with their appointees to increase the level of expertise used to formulate public policy.

In the third and final chapter, I use data from the survey of senior federal employees during the Obama Administration to analyze the effect of politicization, defined as concentrating policy influence among political appointees at an agency, on civil servants' career decisions. Presidents select appointees who share their policy views to ensure that their policy agenda is faithfully implemented across the executive branch (Edwards III 2001; Golden 2000; Lewis 2008; Moe 1985; Nathan 1975; Waterman 1989; Weko 1995). One way that appointees do this is by concentrating policy influence among appointees and excluding civil servants with divergent views from policymaking. I find that civil servants whose policy preferences diverge from those of political appointees are more likely to perceive that their agency is politicized, and that civil servants who perceived their agency is politicized are more likely to express intent to exit their agency and less likely to engage in behaviors that build policy expertise. Many civil servants work for the federal government because they care about the content of public policy. Politicization reduces their policy influence, which reduces their job satisfaction leading to increased turnover or, if they remain in public service, less on-the-job effort. In total, these findings provide some of the first systematic, micro-level evidence demonstrating how presidential efforts to gain control of policymaking via political appointments can reduce agency policy expertise.

A common theme throughout my dissertation is the significant heterogeneity within the executive branch, heterogeneity that can be a function of agency, position, or both. Examining this heterogeneity lights a path forward for my research agenda. Chapter 1 discusses the importance of theorizing about the differential effects of the various statutory mechanisms used to insulate agencies from political control (e.g., party-balancing requirements versus exempting agency rulemaking from review by the Office of Information and

Regulatory Affairs). Understanding how these specific insulating mechanisms affect both political control and agency performance will help us better understand when groups and elected officials prefer which mechanisms. Chapter 2 discusses the importance of considering how the location of an appointed position in the internal agency hierarchy, the type of expertise needed for the position, and statutory limitations on the president's appointment authority affect presidential appointment strategies. A better characterization of how presidents use their appointment authority will help us better understand the dynamics of agency politicization and the maintenance of policy expertise across administrations.

In sum, how federal agencies are designed, the appointees whom presidents choose, and the career decisions of civil servants all have important consequences for the content and quality of public policy. This dissertation helps us to understand each of these choices, but there is more work to be done to understand how heterogeneity within the executive branch affects the relationships between these choices.

Chapter 1

Interest Groups and the Politics of Agency Design

Federal agencies make policy decisions that affect most aspects of modern life from highways to health care to banking. It is clear that the quality of these decisions are material determinants of citizens' quality of life, yet both citizens and politicians complain that American federal agencies are often inefficient and ineffective.

Scholars point to the design of administrative agencies as a key factor that determines performance. One of the primary explanations for why agencies in the United States are not effective is that the interest groups that are influential in designing the agency confront political uncertainty and pressure to compromise with opponents (Moe 1989; Moe and Caldwell 1994). Enacting coalitions worry that today's policy victory will be undone if an opposing group becomes influential tomorrow. This uncertainty causes groups to favor structural features that insulate their policy victories from future political influence. Insulation, however, may come at the cost agency performance. For example, groups may create formal restrictions that limit the discretion of bureaucrats tasked with making policy, or impose detailed procedures for decisionmaking to ensure that bureaucrats incorporate considerations important to the group. However, limiting discretion and imposing rigid procedures create costs in terms of flexibility and efficiency, respectively. Agency design is also the result of compromise. Groups favoring the creation of new agencies must compromise with opponents to ensure that legislation that creates agencies is signed into law. This need to compromise provides opposing groups the opportunity to choose agency characteristics that are intended to impede agency performance.

Given the scope and influence of agency policymaking, coupled with the potential for design choices to affect the content and quality of policymaking, understanding the determinants of agency creation and design is clearly an important task. Political scientists

have made much progress explaining politician's views about agency creation and design (e.g., Epstein and O'Halloran 1994; Epstein and O'Halloran 1999; Gailmard 2002; Lewis 2003; Wiseman 2009; also see Gailmard and Patty 2012, for a review of formal models of delegation), but comparatively less progress regarding what interests groups want. Moe's (1989) initial theory did not discuss how political uncertainty might vary across groups or time or how groups' preferences over agency design and creation are influenced by the preferences of bureaucrats that will work in the agency. I argue a key determinant of uncertainty is a group's political resources (e.g., public support, money, technical expertise). These resources may be useful in influencing politicians when legislation is being crafted, bureaucrats when they are specifying policy, or both. Subsequent work clarified the relationship between electoral uncertainty (which I argue is a particular type of political uncertainty, but not the only source) and policy insulation, but this work also did not consider bureaucrats' policy preferences. To better understand groups' preferences over agency design, I model the effects of the likelihood a group retains influence over public policy and its preference congruence with bureaucrats working in the agency to identify conditions that induce interest groups to prefer agencies that are not subject to political control.

My analytical results reveal that a group's preferences over agency creation and insulation depend on both the likelihood that it retains influence and the policy preferences of bureaucrats. My results are consistent with De Figueiredo (2002) who demonstrates that groups that expect to lose policymaking authority are most likely to prefer insulation. Importantly, I find that if bureaucrats are expected to have policy preferences very similar to the group, even groups that expect to retain policymaking influence will prefer insulation. Additionally, if bureaucrats are expected to have policy preferences very dissimilar to the group, then groups that expect to lose policymaking authority are likely to prefer to retain some political control over the agency, or simply retain the status quo policy. Before concluding, I discuss how my findings provide insight into what interest group environ-

ments are most likely to produce more insulated agencies. I also discuss a reformulation of the model that incorporates lawmaking under separation of powers and includes a richer treatment of interest group competition.

1.1 Interest Groups and Agency Design

The politics of agency design is fundamentally about interest groups (Moe 1989). Interest groups have clear policy goals in their issue areas and they understand how agency structure affects their abilities to accomplish these goals. They are willing to mobilize political resources to pressure politicians to get the agency they want; whereas voters, if they even have policy goals, almost certainly lack understanding of how agency structure affects policy (Bartels 2003; Converse 1964). Voters' lack of understanding often leaves interest groups as the sole purveyor of political pressure regarding agency design.

Groups' preferred agency structures are not only determined by what structures are most beneficial to effective policymaking, but also what structures ensure that their policy victories are durable across time. Political uncertainty, meaning uncertainty about who will wield policymaking authority in the future, creates fear that today's policy victory will be undone if an opposing group becomes influential tomorrow. This uncertainty causes groups to favor structural features that insulate their policy victories from future political influence. Groups can choose various mechanisms to insulate their policies from political control (Lewis 2003; Moe 1989; Selin 2015). They can write detailed legislation that removes bureaucratic discretion (Epstein and O'Halloran 1999). They can ensure that administrative procedures create policymaking processes that ensure their interests are represented (McCubbins, Noll, and Weingast 1987, 1989). They can place restrictions on appointees the president can select to run the agency, and, finally, they can exempt agency policymaking from review by politicians (Lewis 2003; Selin 2015). The American separation of powers system means that legislation, once it becomes law, proves to be difficult to overturn (Krehbiel 1998; Moe and Caldwell 1994). Therefore, groups have confidence that the structure

they choose can endure even if they do indeed lose political power.

1.1.1 Resources and Political Uncertainty

In the context of agency design, political uncertainty is often associated with electoral uncertainty (De Figueiredo 2002; Lewis 2003), meaning uncertainty over whether politicians that support a group's policy goals will be replaced by opponents. As noted above, however, groups have resources that they are willing to devote to achieve their political goals. If we define political resources to be any tool that a group can use to influence policymakers, including politicians and bureaucrats, then groups' stocks of resources should translate into their abilities to influence policymakers. Important examples of political resources are the number of group members, geographic coverage of group members, monetary resources, and technical expertise.[1] The number of group members and a group's geographic coverage are important determinants of a group's ability to direct votes. Monetary resources can be used to fund lobbying, campaign donations, or research to support a given position. Technical expertise is information about the likely effects of particular policies. These resources are not evenly distributed across groups, and different resources will be useful at different stages of policymaking process. Support from a large portion of the public with large geographic coverage is useful for influencing members of Congress, for example, but it would not be as useful for specifying the technical points of policy. It follows that a group's political uncertainty may be related not only to the policy preferences of politicians in office, but also to the ability of a group (as determined by its resources) to participate in policymaking after an agency is created.

Groups that are trying to create an agency that regulates an industry in the public interest serve as a useful illustration. Such groups typically rely on broad public support to influence elected officials to create the agency the group prefers, but they lack the technical expertise or monetary resources that are often necessary to participate in policymaking

[1] I do not claim that this list is original. See Baron (2013) for an explanation of these, and other, resources.

after the agency is created.[2] Opposing groups, typically business interests, may lack public support, but have technical expertise useful to agencies in making policy and monetary resources that ensure they can participate in the policymaking process either through lobbying or the courts.

Consider, for example, the creation of the Consumer Product Safety Commission. The Commission was created by the Consumer Product Safety Act of 1972 to regulate consumer products, and to ban those products that pose an unreasonable risk of injury.[3,4] The proponents of the Commission were consumer groups and activists like Ralph Nader, whose book *Unsafe at Any Speed* was a catalyst for the consumer movement of the 1960's. Opponents were (mostly) regulated firms.

The role of resources is demonstrated nicely by the testimony that Don Willner, National President of the Consumer Federation of America, offered at a Congressional hearing on the creation of the CPSC. In response to his support for a consumer advocate who would be an employee of the Commission, Mr. Willner was asked if any private consumer group had the funds or personnel to perform such a role. He responded that the Federation was the largest consumer organization in the United States, but had only two professional employees and one secretary as staff. He went on to say, "I know times like when a regulatory agency holds a hearing, and on one side of the table are the industry and their lawyers, and their economists, people who carry the brief cases for the lawyer, and then you look on the other side of the table and who is there?"[5] Clearly, Mr. Willner was concerned that consumer groups would not be able to influence policymaking after agency creation due to their lack of resources. On its face, it appears that consumers groups did not expect to have policy influence after an agency was created, and that concern was divorced from the

[2]See Patashnik 2003 and Wilson's 1989, Ch. 5, discussion of entrepreneurial interest group environments.

[3]U.S. Congress. House of Representatives. Subcommittee on Commerce and Finance of the Committee on Interstate and Foreign Commerce. 1971, 1972. *Consumer Produce Safety Act*. 92nd Congress, 1st and 2nd sess., 1,2,3 November; 1,2,6,7,8,9; 24 January; 1,2,3 February.

[4]U.S. Senate. Committee on Commerce. 1971. *Consumer Product Safety Act of 1971*. 92nd Congress, 1st sess., 19,21,22,23,26 July.

[5]Ibid., page 189.

preferences of future office holders.

The point here is not that electoral competition is an unimportant factor in determining political uncertainty, but rather that it may not be a primary concern in every case. In particular, if a group does not possess the resources to participate in policymaking after agency creation, then it may expect to lack policy influence regardless of the preferences of elected officials.

1.1.2 Agency Creation and Delegation

The decision to insulate an agency from political control is essentially a decision to to delegate policymaking authority to the bureaucrats that will work in the agency. The more insulated an agency is, the less politicians are able to influence agency policymaking, and the more bureaucrats are able to determine agency policy. There is significant variation in the ideology of bureaucrats across the executive branch (Aberbach, Putnam, and Rockman 1981; Clinton et al. 2012; Clinton and Lewis 2008). If bureaucrats select into agencies based on agency mission, then bureaucrats in an agency should have similar policy views. Moreover, self-selection gives interest groups an expectation regarding the policy views of the bureaucrats that will work in an agency and the degree to which they will share the preferences of the interest group. For example, an environmental protection interest group should expect that people who want to work for a prospective environmental protection agency will want to improve environmental protection. Therefore, the group expects bureaucrats in the agency, perhaps on average, to have similar policy goals to the interest group. This preference similarity should then influence the group's preferences for insulating the bureaucrats from future political control.

In the next section, I develop a model that is designed to clarify the relationship between the likelihood a group has policy influence after agency creation, preference congruence between a group and a career bureaucrat who will work in the agency, and the group's preferences over the creation and insulation of the agency.

1.2 The Model

Creating an agency requires answering two questions. First, should an agency be created? Second, if it should be created, what should the structure of the agency be? A group's answers to these questions will be determined by the policy that the agency is expected to create. I develop a model of agency creation and design, followed by policymaking by the agency. To be clear, equilibrium behavior characterizes the agency a group prefers, not necessarily what agency would be created via the lawmaking process.

I assume that policy is unidimensional: $p \in \mathbb{R}^1$, that there is an exogenous status quo policy, $q \in \mathbb{R}^1$, and that there are two interest groups G_1 and G_2 with ideal points $x_1 \in \mathbb{R}^1$ and $x_2 \in \mathbb{R}^1$, respectively. The game begins with G_1 choosing whether to create an agency, A, with insulation level $\lambda \in [0,1]$ or retain the status quo policy. This assumes no pressure to compromise because G_1 is able to choose whether to create an agency and the level of insulation without any influence by G_2. This allows me to focus on the effect of political uncertainty to untangle the influence of uncertainty and compromise on design. Moreover, this specification implies that politicians are essentially conduits of interest group preferences, which is admittedly a strong assumption. That said, assuming politicians are conduits of interest group pressure is congruent with the motivating theory (Moe 1989, p. 277-278).[6]

After the agency creation decision, nature selects G_1 or G_2 to have policymaking authority. G_1 retains authority to influence policymaking with probability $\theta \in (0,1)$. Otherwise, G_2 comes to power. This captures uncertainty about the group's ability to control future policy outcomes. An implication of the assumption that $\theta \in (0,1)$ is that neither group expects to have control with certainty.[7]

[6] It is also consistent with assumptions of other formal models of policy insulation and political uncertainty (De Figueiredo 2002). However, it is not consistent with characterizations of presidents' preferences over agency design (Lewis 2003; Moe 1989). Presidents are argued to oppose insulation because it limits their ability to effectively control policymaking in the executive branch.

[7] This assumption also avoids tedious cases that add little to model analysis, for example, $\theta = 0$ and $x_2 = B$, where B is the exogenous ideal point of a civil servant who works in the agency.

If G_1 creates an agency, the agency will have ideal point $x_A = (1-\lambda)x_i + \lambda B, i = \{1,2\}$, where x_i is the ideal point of the group in power, and B is the exogenous ideal point of the careerists that selected into the agency based on agency mission. Thus, greater insulation limits interest groups' political control over the agency and increases the influence of career bureaucrats.[8]

All players have single peaked preferences over policy outcomes and strictly prefer policies closer to their ideal point. Player i's utility function can be represented by the following functional form, which assumes risk aversion:

$$U_i = -(p - x_i)^2,\ i = \{1,2,A\}$$

I assume $x_1 \leq B \leq x_2$ and $x_1 < x_2$. Thus, the career bureaucrat's ideal point is not more extreme than either of the interest groups and the interest groups do not share the same ideal point. After nature's draw, the agency chooses p. Let $C = \{Yes, No\}$ where "Yes" is a decision by G_1 to create the agency and "No" is a decision by G_1 to not create the agency and retain the status quo policy.[9] Strategy profiles are $S_1 = \{C, \lambda\}$ and $S_A = \{p\}$.

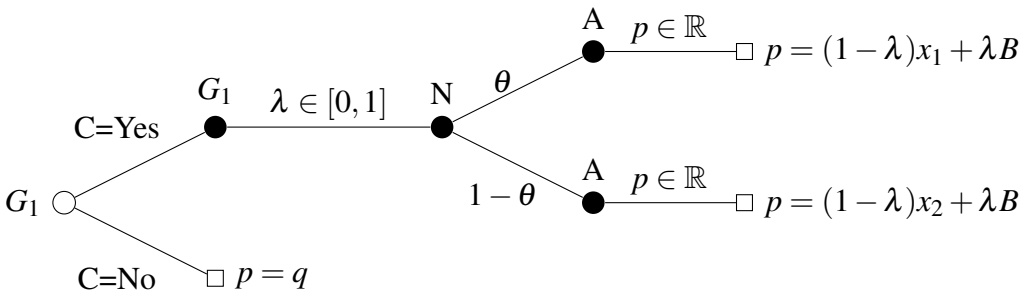
Figure 1.1 presents the extensive form of this game. I solve for the Subgame Perfect Nash Equilibrium using backward induction. After Nature's move, A will set p equal to x_A to maximize its utility, which yields the policy outcomes shown in Figure 1.1.

Before evaluating G_1's optimal insulation decision, it is useful to examine the effect of

[8]By assuming that greater insulation limits interest group influence, I am making a strong simplifying assumption about the venues a group can use to influence the agency. Specifically, I am assuming that the insulation limits interest group control. One interpretation is that this model is limited to control exercised via politicians that specific insulation mechanisms can limit. For example, an expertise requirement for an appointed position limits appointment authority of the president. However, certain avenues of influence (e.g., the right to sue an agency regarding a regulation) remain open to interest groups even for insulated agencies. This also suggests that if insulation mechanisms limit control by politicians, then insulation may actually increase group influence of an agency given a group has venues of access independent of politicians. In this case, insulation could *increase* group influence by excluding competing influence from politicians.

[9]This assumption forces the group to create the agency if it wants to change policy from the status quo. The group is unable to set policy directly via legislation, say set policy at $p = x_1$, which would be a dominant strategy given there is no policy uncertainty. This assumption simplifies the delegation decision to focus on the optimal insulation decision at the cost of the realism of the range of policymaking options available to the group. A model extension that addresses this simplification may be helpful to provide additional insight into when groups' prefer to create an agency.

Figure 1.1: Extensive Form of the Agency Insulation Game

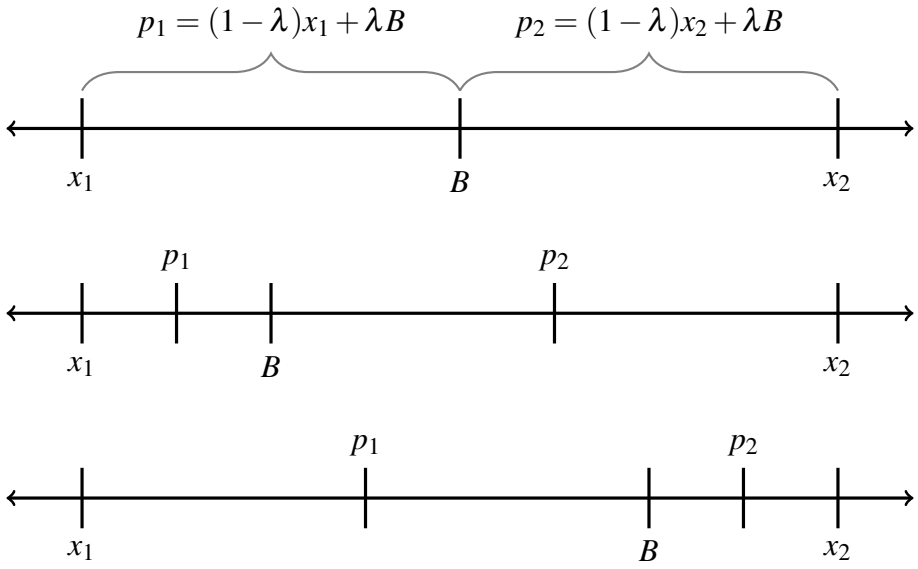


insulation on policy given A's optimal policy decision. If G_1 creates the agency, the result is a lottery over two policy outcomes – the policy that is realized if G_1 retains power (denote this p_1) and the policy realized if G_2 gains power (denote this p_2). By insulating the agency, G_1 can reduce the variance in expected policy by moving the two policy outcomes closer to B.[10] Additionally, the closer B is to x_1, the less costly the reduction in variance is in terms of policy to G_1. See Section A.1 of Appendix A for derivations of the changes in policy, expected policy, and the variance in expected policy with respect to insulation.

Figure 1.2 shows the range of p_1 and p_2 for all levels of insulation (top panel) and compares possible realizations of p_1 and p_2 (middle and bottom panels) to illustrate both relationships. The top panel shows that $x_1 \leq p_1 \leq B$ and $B \leq p_2 \leq x_2$. If G_1 does not insulate the agency (i.e., $\lambda = 0$), then $p_1 = x_1$ and $p_2 = x_2$ resulting in the greatest distance between p_1 and p_2. Conversely, if G_1 fully insulates the agency (i.e., $\lambda = 1$), then $p_1 = p_2 = B$ and there is no variance in agency policymaking. The change in p_i with respect to λ is $B - x_i$, $i = \{1,2\}$. If $x_1 < B < x_2$, the effect of increasing insulation on p_1 is positive and the effect of increasing insulation on p_2 is negative. Therefore, increasing insulation shifts p_1 away from x_1 and shifts p_2 toward x_1. Accordingly, the middle and lower panels in Figure 1.2 show that if insulation is moderate (i.e., $\lambda = 0.5$), then p_1 and p_2 are both shifted closer to B, but not equivalent to B. Additionally, the magnitude of the change in p_i with respect to

[10] $Var[p] = \theta(1-\theta)(x_1 - x_2)^2(1-\lambda)^2$

Figure 1.2: The Policy Lottery, Insulation, and the Importance of B



Note: The top figure gives the range of p_1 and p_2 that are realizable for all values of λ. The middle and bottom panels give p_1 and p_2 for $\lambda = 0.5$. For all panels, $x_1 = 1$ and $x_2 = 11$. B is 6, 3.5, and 8.5 in the top, middle, and bottom panels, respectively.

insulation is equal to distance between B and x_i. Therefore, the closer B is to x_1 the smaller the shift in p_1 away from x_1 and the larger the shift in p_2 toward x_1 for a given increase in insulation. The middle and bottom panels of Figure 1.2 illustrate this effect. Moderately insulating the agency ($\lambda = 0.5$) yields the same reduction in variance in expected policy in the middle and lower panels of the figure. However, both p_1 and p_2 are closer to x_1 when B is close x_1 (the middle panel) than when B is far from x_1 (the bottom panel).

1.2.1 Optimal Level of Insulation

Given A's optimal policy decision, $p = (1-\lambda)x_1 + \lambda B$ if G_1 retains power and $p = (1-\lambda)x_2 + \lambda B$ if G_2 gains power. It follows that G_1's expected utility of creating the agency is:

$$E[U_1(C = Yes, \lambda)] = -\theta[(1-\lambda)x_1 + \lambda B - x_1]^2 - (1-\theta)[(1-\lambda)x_2 + \lambda B - x_1]^2.$$

Taking first order conditions of EU_1 with respect to λ yields the unbounded optimal level of insulation (λ'):

$$\lambda' = \frac{(1-\theta)(B-x_2)(x_1-x_2)}{\theta(x_1-B)^2+(1-\theta)(x_2-B)^2}.$$

Given that $\lambda \in [0,1]$, the following result characterizes the optimal insulation decision by G_1 for all relevant regions of the parameter space. See Section A.2 of Appendix A for derivation of the optimal insulation decision. G_1's optimal insulation decision is:

$$\lambda^* = \begin{cases} 1 & \text{if } B \in [x_1, x_2-\theta(x_2-x_1)] \\ \frac{(1-\theta)(B-x_2)(x_1-x_2)}{\theta(x_1-B)^2+(1-\theta)(x_2-B)^2} & \text{if } B \in [x_2-\theta(x_2-x_1), x_2] \end{cases}$$

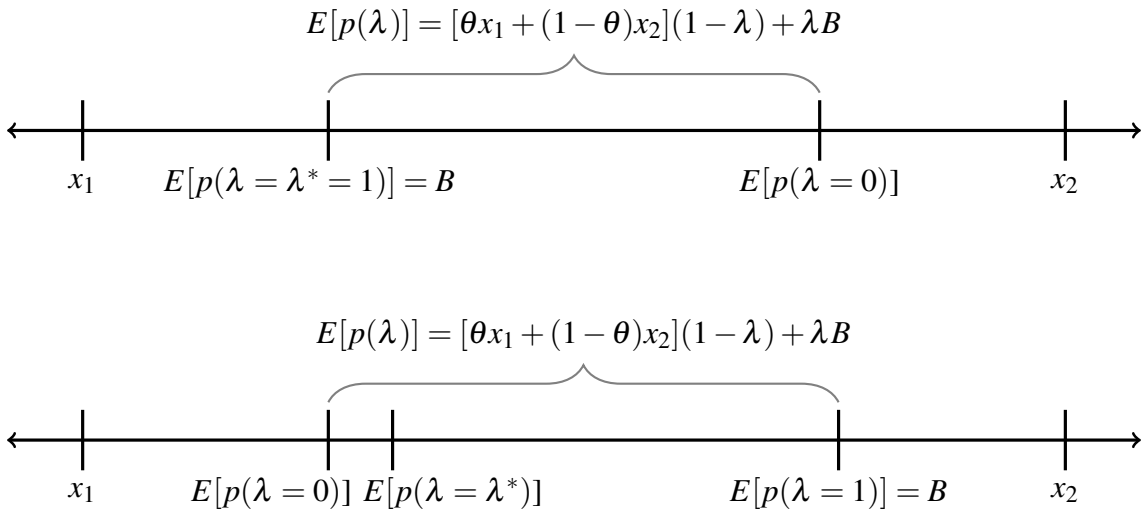
Figure 1.3 helps to clarify this result. In the top panel in the figure, G_1 prefers full insulation. Greater insulation shifts expected policy closer to B and further from expected policy given no insulation, $E[p(\lambda=0)] = x_2-\theta(x_2-x_1)$.[11] It follows that, if B is closer to x_1 than expected policy given no insulation, G_1 prefers policy at B with certainty (i.e., $\lambda = 1$). Once B is farther from x_1 than expected policy given no insulation (the bottom panel), G_1 prefers to reduce insulation and retain some political control to move expected policy closer to x_1. In this case, risk aversion results in expected policy given optimal insulation that is farther from x_1 than expected policy given no insulation.

Figure 1.4 plots the optimal level of insulation across the range of B for $\theta = \{0.25, 0.50, 0.95\}$.[12] As B moves from x_1 toward x_2, G_1 will set $\lambda = 1$ if $B \leq x_2-\theta(x_2-x_1)$. The optimal level of insulation decreases as B approaches x_2 because, while increasing insulation reduces the extremity of policy if G_2 gains power, increasing insulation moves expected policy closer to x_2 if $B > x_2-\theta(x_2-x_1)$. Therefore, if B is sufficiently far from x_1, insulation is more costly to G_1, and it prefers to retain some political control over the agency.

[11] $E[p(C=Yes,\lambda)] = \theta[(1-\lambda)x_1+\lambda B]+(1-\theta)[(1-\lambda)x_2+\lambda B] = (1-\lambda)[x_2-\theta(x_2-x_1)]+\lambda B \rightarrow E[p(C=Yes,\lambda=0)] = x_2-\theta(x_2-x_1)$. The derivative of expected policy with respect to λ is decreasing for $B < x_2-\theta(x_2-x_1)$.

[12] Figure A.1 in Appendix A plots λ^* for all values of B and θ.

Figure 1.3: Expected Policy for All Levels of Insulation and Optimal Insulation



Note: This figures gives the range of possible expected policies for all $\lambda \in [0,1]$ and expected policy for $\lambda = \lambda^*$ for two cases: $B < E[p(\lambda = 0)] = \theta x_1 + (1-\theta)x_2$ in the top example and $B > E[p(\lambda = 0)] = \theta x_1 + (1-\theta)x_2$ in the bottom example. For both examples, $x_1 = 1$ and $x_2 = 14$. In upper example, $B = 4.25$ and $\theta = 0.25$. In the lower example, $B = 11$ and $\theta = 0.75$

The range of B for which G_1 prefers full insulation also depends on θ, the probability G_1 will have policy influence after agency creation, and the location of x_2. The range is decreasing in θ. As θ increases, expected policy given no insulation is closer to x_1 because G_1 is more likely to be have policy influence in the future. The gray vertical lines in Figure 1.4 demonstrate how G_1 fully insulates the agency over a smaller range of B at higher values of θ. If G_1 is confident it will have policymaking authority ($\theta = 0.95$), then it is prefers to retain more political control as B diverges from G_1's ideal policy. Likewise, if G_1 expects to lose policymaking authority ($\theta = 0.25$), then it is more willing to fully insulate the agency as B's preferences diverge and only begins to retain some political control when B is close to x_2. In this case, G_1 is willing to fully insulate B, which will result in $p = B$, even when B has quite divergent preferences, because the most likely outcome is G_2 exercising policy influence after agency creation. In other words, if G_1 expects to lose authority, then it often prefers no political influence of agency policymaking because it is unlikely that G_1 will wield political control over the agency. This result mirrors De Figueiredo's (2002)

result that groups that expect to lose power are more likely to insulate. My model also demonstrates that if the preferences of bureaucrats are too different from the group, even a group that expects to lose power will prefer an uninsulated agency. Moreover, if the preferences of bureaucrats are very similar to the group, even a group that expects to have power will prefer an insulated agency.

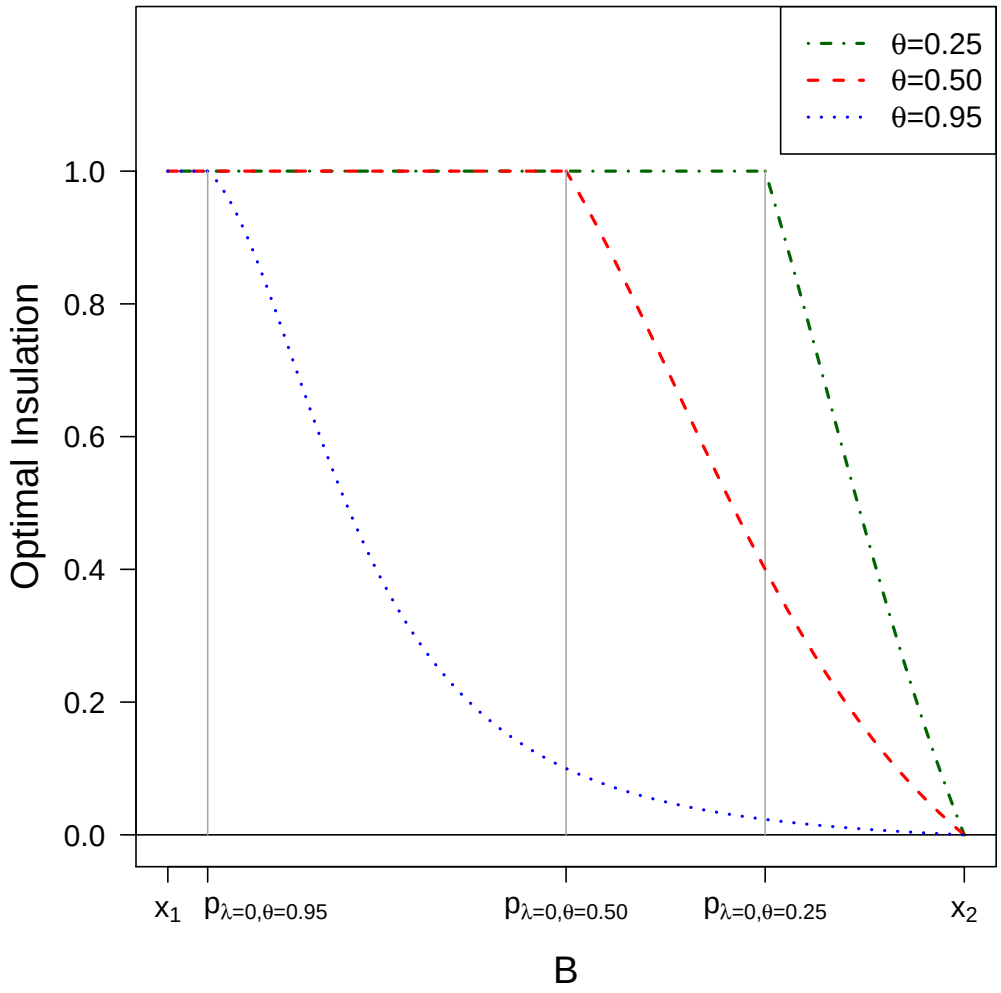
The range of B for which G_1 prefers full insulation is increasing in x_2. As x_2 moves away from x_1, the extremity of policy if G_2 has policy influence increases, making insulation more attractive. More specifically, the rate of change is equal to $1 - \theta$, which demonstrates that the more certain G_1 is that it will have policy influence, the less an increase in the divergence between x_1 and x_2 increases the range of B for which G_1's prefers full insulation. In short, the more G_1 and G_2 disagree about policy, the more attractive insulation is, particularly for groups that are less certain they will retain policymaking authority.

In summary, I can make three statements about G_1's preference for insulation. First, the less the bureaucrat that works in the agency shares G_1's policy preference, the less willing G_1 is insulate her from policy influence. Second, as G_1 becomes more certain it will retain policymaking authority, it is less willing to insulate and give up political control. Lastly, the more G_2's ideal policy differs from G_1's ideal policy, the more G_1 prefers insulation to limit G_2's policy influence should it come to power; however, the more confident G_1 is it will retain power, the less an increase in preference divergence between G_1 and G_2 increases G_1's preferred level of insulation. Crucially, the exact mapping of each of these variables into G_1's choice of insulation is dependent on the other parameters in the model, which I explain further below.

1.2.2 Optimal Agency Creation Decision

Having characterized the optimal insulation decision, I now turn to determining when a group will prefer to create an agency. Simply put, G_1 will prefer to not create the agency and retain the status quo if and only if its expected utility from creation is less than its

Figure 1.4: Optimal Insulation Across B



Note: This figure plots optimal insulation (λ^*) across the range of B for three probabilities that G_1 has policy influence after agency creation (θ). The points $p_{\lambda=0,\theta}$ denote expected policy evaluated at $\lambda = 0$ (i.e., no policy insulation) and $\theta = \{0.25, 0.50, 0.75\}$.

utility from maintaining the status quo:

$$U_1(C = No, \lambda) > EU_1(C = Yes, \lambda^*)$$

$$\rightarrow -(q - x_1)^2 > -\theta[(1-\lambda^*)x_1 + B\lambda^* - x_1]^2 - (1-\theta)[(1-\lambda^*)x_2 + B\lambda^* - x_1]^2$$

Solving this inequality for q and inserting the optimal level of insulation (see Section A.3 of Appendix A for derivation of the optimal creation decision and its properties) yields the

range of status quo for which G_1 strictly prefers to retain the status quo, rather than create an agency:

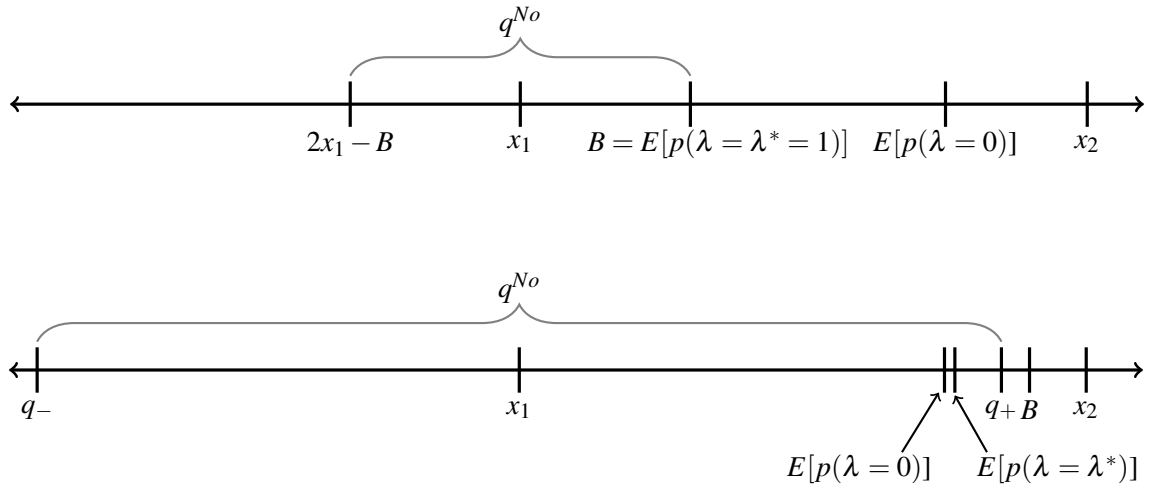
$$q^{No} = \begin{cases} (2x_1 - B, B) & \text{if } B \in [x_1, x_2 - \theta(x_2 - x_1)] \\ \left(x_1 - \sqrt{\frac{\theta(1-\theta)(B-x_1)^2(x_1-x_2)^2}{B^2+\theta x_1^2+(1-\theta)x_2^2-2B(\theta x_1+(1-\theta)x_2)}}, \right. & \\ \left. x_1 + \sqrt{\frac{\theta(1-\theta)(B-x_1)^2(x_1-x_2)^2}{B^2+\theta x_1^2+(1-\theta)x_2^2-2B(\theta x_1+(1-\theta)x_2)}} \right) & \text{if } B \in [x_2 - \theta(x_2 - x_1), x_2] \end{cases}$$

To glean some intuition from these intervals, Figure 1.5 shows the length of the intervals for which G_1 prefers not to create the agency when G_1 fully insulates the agency (i.e., B less than expected policy given no insulation) and when G_1 prefers some political control (i.e., B is greater than expected policy given no insulation) holding all other parameters in the model constant. For B less than expected policy given no insulation (the upper panel), G_1 fully insulates the agency resulting in $p = B$ with certainty. In this case, G_1 will create the agency if and only if it prefers $p = B$ to $p = q$. If B is greater than expected policy given no insulation (the lower panel), G_1 prefers to retain some political control to yield expected policy closer to x_1 than B. However, due to risk aversion, the status quo must be farther from x_1 than expected policy for G_1 to create the agency. The effect of risk aversion is shown in lower panel of Figure 1.5 by $q_+ > E[p(\lambda = \lambda^*)]$, where q_+ and q_- give the upper and lower bounds of q^{No}, respectively.

To better illustrate how q^{No} depends on both the location of B and the likelihood that G_1 retains power, Figure 1.6 plots the length q^{No} across the range of the bureaucrat's ideal point, B, for the values of θ that are illustrated in Figure 1.4.[13] The curve in Figure 1.4 for $\theta = 0.25$ corresponds to the two intervals of q^{No} shown in Figure 1.5. Given $\theta = 0.25$, G_1 expects to lose power and will insulate the agency over a large range of B. Therefore, q^{No} increases linearly at a rate of 2 as B approaches x_2, and q^{No} does not depend on θ. This result demonstrates that when a group's optimal insulation decision is full insulation,

[13] Figure A.2 in Appendix A plots the length q^{No} for all values of B and θ.

Figure 1.5: Size of the "No-Agency" Interval as B approaches x_2



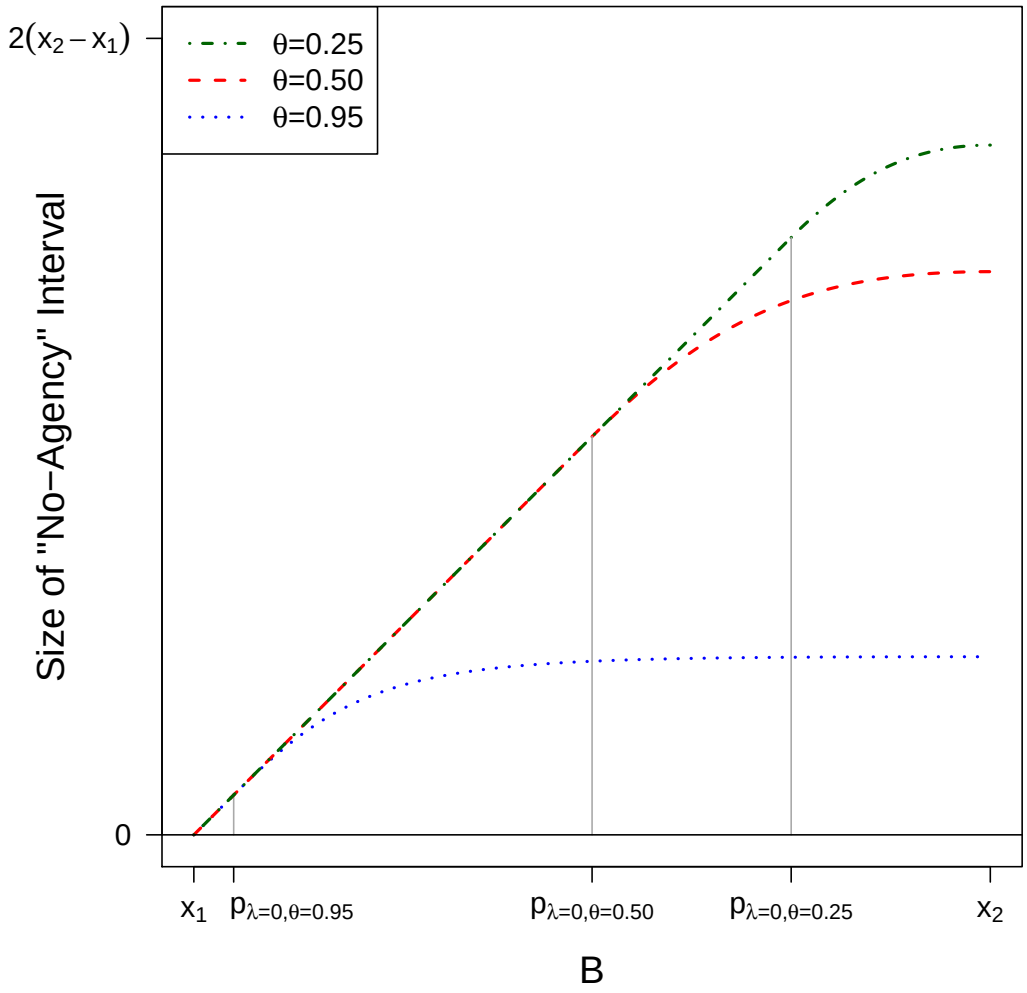
Note: This figures gives the range of the interval of status quo for wich G_1 will not create the agency, q^{No}, for two cases: $B < E[p(\lambda = 0)] = \theta x_1 + (1-\theta)x_2$ in the top panel and $B > E[p(\lambda = 0)] = \theta x_1 + (1-\theta)x_2$ in the bottom panel. For both examples, $x_1 = 4$ and $x_2 = 14$, and $\theta = 0.25$. In the upper panel, $B = 7$. In the lower panel, $B = 13$. The upper and lower bounds of q^{No} are give by q_+ and q_-, respectively, in the lower panel.

the group allows the bureaucrat to set policy without any political influence; therefore, the greater the preference divergence between the bureaucrat and the group, the less likely the group is to create the agency (i.e., the larger the set of status quo for which the group prefers retaining the status quo to creating the agency). The result can also be seen by comparing the size of q^{No} in the upper and lower panels of Figure 1.5.

For B greater than expected policy given no insulation, G_1 decreases insulation as B approaches x_2 reducing the influence of B on expected final policy. For example, if $\theta = 0.95$, G_1 decreases insulation rapidly as B approaches x_2 (Figure 1.4), which corresponds to a decreasing rate of increase in q^{No} as B approaches x_2 (Figure 1.6).[14] This result demonstrates that preference divergence between the group and the bureaucrat is less important for determining whether the group creates the agency the more certain the group is that it will retain power.

[14]The length of q^{No} is maximized with respect to B at $B = x_2$.

Figure 1.6: Size of the "No-Agency" Interval Across B



Note: This figure plots the size of the interval for which G_1 prefers to not create the agency across the range of B for three probabilities that G_1 has policy influence after agency creation (θ). The points $p_{\lambda=0,\theta}$ denote expected policy evaluated at $\lambda = 0$ (i.e., no policy insulation) and $\theta = \{0.25, 0.50, 0.95\}$. The maximum of this interval is $2(x_2 - x_1)$ given $x_1 \leq B \leq x_2$.

1.2.3 Agency Design in Equilibrium

Having described the optimal insulation and agency creation decisions by G_1, I can now characterize the Subgame Perfect Nash Equilibrium to the game. The Subgame Perfect Nash Equilibrium consists of an optimal creation decision, C, by G_1, an optimal insulation decision, λ, by G_1, and an optimal policy decision, p, by the agency, A, as follows:

$$S_1^* = \left\{ \begin{array}{ll} C = Yes, \lambda = 1 & \text{if } B \in [x_1, x_2 - \theta(x_2 - x_1)] \text{ and } q \notin (2x_1 - B, B), \\ C = Yes, \lambda = \frac{(1-\theta)(B-x_2)(x_1-x_2)}{\theta(x_1-B)^2+(1-\theta)(x_2-B)^2} & \text{if } B \in [x_2 - \theta(x_2 - x_1), x_2] \text{ and } q \notin (q_-, q_+), \\ C = No, \lambda = [0,1] & \text{if } B \in [x_1, x_2 - \theta(x_2 - 1)] \text{ and } q \in [2x_1 - B, B] \\ & \text{or } B \in [x_2 - \theta(x_2 - 1), x_2] \text{ and } q \in [q_-, q_+] \end{array} \right\},$$

$$\begin{array}{ll} \text{where} & q_- = x_1 - \sqrt{\frac{\theta(1-\theta)(B-x_1)^2(x_1-x_2)^2}{B^2+\theta x_1^2+(1-\theta)x_2^2-2B(\theta x_1+(1-\theta)x_2)}}, \\ \text{and} & q_+ = x_1 + \sqrt{\frac{\theta(1-\theta)(B-x_1)^2(x_1-x_2)^2}{B^2+\theta x_1^2+(1-\theta)x_2^2-2B(\theta x_1+(1-\theta)x_2)}}. \end{array}$$

$$S_A^* = \left\{ \; p = x_A \; \right\}$$

This equilibrium demonstrates that a group's optimal insulation and agency creation decisions depend on both the preferences of bureaucrats who will work in the agency and the group's expectation about future policymaking authority. Together Figures 1.4 and 1.6 illustrate how a bureaucrat's preferences, B, and expectations about future policy authority, θ, influence these decisions. When B is very close to x_1 (say less than $p_{\lambda=0,\theta=0.95}$), then groups that expect to retain power ($\theta = 0.95$) and groups that do not ($\theta = 0.25$) create fully insulated agencies and will create the agency for the same broad range of q. The similarity of B and x_1 make insulation inexpensive (recall Figure 1.2) and ensuring final policy is at B with certainty is very attractive. As B moves away from x_1 toward x_2, however, a group that expects to retain power is able to rely on expected future policy authority to achieve desirable policy outcomes. The group reduces insulation relatively rapidly as B approaches x_2, thereby, reducing the influence of B on expected policy. Reducing insulation also reduces the influence of B on the range of status quo for which the group prefers to create the agency, which is illustrated by the nearly flat slope given $\theta = 0.95$ in Figure 1.6 once the group begins decreasing insulation. On the contrary, a group that expects to lose power ($\theta = 0.25$) must rely on insulating B to achieve preferred policy outcomes. The

group continues to insulate B fully as B approaches x_2, and the group only begins to reduce insulation when B is quite close to x_2. When the group relies on full insulation of B, it only prefers to create the agency if $p = B$ is preferred to $p = q$. Therefore, an increase in preference divergence between the group and the bureaucrat maps linearly into an increase in the range of q for which the agency prefers to create the agency. This linear relationship is reflected in the steep slope given $\theta = 0.25$ in Figure 1.6, and persists until the group begins to decrease insulation once B is close to x_2.

In short, three conclusions about agency insulation and creation can be drawn from the equilibrium. First, if the preferences of career bureaucrats are very close to the preferences of the group, then groups that expect to lose power, as well as groups that expect to retain power, will create fully insulated agencies for a broad range of status quo policies. Second, groups that expect to retain power are generally more likely to create less-insulated agencies, and they do so over a broader range of status quo than groups that expect to lose power. Finally, groups that expect to lose power will most likely create fully-insulated agencies, but only if there is sufficient preference congruence between the group and career bureaucrats. Because such groups essentially delegate complete policymaking authority to the bureaucrat by limiting political influence, the more the preferences of the bureaucrat differ from the group, the more extreme the status quo must be for the group to prefer to create the agency.

1.3 Discussion

The contribution of my model is demonstrating the importance of the preferences of bureaucrats that will work in the agency, in conjunction with groups' expectations about their future policy influence, for determining groups' preferences over insulation and agency creation. I confirm the result from previous work that groups that are likely to lose policymaking authority ("electorally weak groups") are most likely to insulate policies (De

Figueiredo 2002).[15] Additionally, I characterize not only when groups prefer more or less insulation, but when they prefer to create an agency or retain the status quo. I now discuss how results from the model relate to the agencies and interest group environments we observe.[16]

Entrepreneurial politics are characterized by concentrated costs born by organized interests and diffuse benefits that accrue to the public at large. Often some crisis, policy entrepreneur, or both make the public aware of the need for a government agency endowed with authority to regulate an offending industry or group. Groups favoring more stringent regulation know that they have broad public support, but will face organized opposition once public support wanes. Moreover, industry is likely to have technical expertise that groups supporting regulation cannot match giving industry an edge when bureaucrats are seeking information about the likely effects of policy. In terms of the model, pro-regulation groups in an entrepreneurial politics environment expect to lose power after agency creation and, therefore, rely on insulation of career bureaucrats to prevent regulated interests from influencing policy after agency creation. It follows that pro-regulation groups will only want to create the agency if they expect career bureaucrats to share their preferences, the status quo is extreme relative to the groups' preferences, or both.

Returning to the consideration of the creation of the Consumer Product Safety Commission (CPSC), consumer groups knew that they did not have the necessary resources to participate in policymaking after agency creation. Therefore, they preferred an independent commission with technical and laboratory facilities for the testing of products. Importantly,

[15] A key difference between the model I develop and De Figueiredo's (2002) model is that he assumes insulation has an exogenous cost that either group pays if it insulates its policies, whereas, I do not. De Figueiredo finds that if insulation is sufficiently costly neither group will insulate and if insulation is sufficiently cheap both groups will insulate. His claim that electorally weak groups are most likely to insulate assumes a moderate cost of insulation. Preference divergence between the bureaucrat and the group in my model could be considered a cost of insulation, but the cost of preference divergence in my model can be asymmetric across groups. Importantly, this causes opposing groups to prefer different levels of insulation in cases where De Figueiredo's model predicts both groups prefer insulation (e.g., uncertainty = 0.50). This difference has important implications for when we expect agencies to be insulated, and may affect the durability of agency structure in equilibrium.

[16] See Wilson 1989, Ch. 5 for discussion of the types of politics and corresponding agencies. My discussion of types of politics and interest group environment relies on the well known Wilson-Lowi matrix.

consumer groups also favored a federally-employed consumer advocate to ensure similarity between their preferences and bureaucrats' preferences. If, as the model predicts, groups that expect to lose power rely on insulation and preference similarity between themselves and bureaucrats to achieve preferred policy outcomes, it follows that such groups would want to ensure that bureaucrats share their preferences, if possible. Similar to consumer groups and the creation of the CPSC, the recent financial crisis made financial regulation salient to the public and empowered consumer finance advocates. Consistent with the results of the model and the argument that pro-regulation groups prefer insulated agencies, the Consumer Financial Protection Bureau that emerged from the passage of the Dodd-Frank Wall Street Reform and Consumer Protection Act is estimated to be one of the most insulated agencies in the federal government (Selin 2015).

In contrast to entrepreneurial interest group environments, cases of client politics are characterized by concentrated benefits and diffuse costs accrued to various interests. This dispersion of costs results in organized interests that support the agency with effectively no organized opposition. Although a client group is quite certain it will retain power, it might still create an insulated agency if bureaucrats in the agency are expected to share the groups preferences (i.e., $B = x_1$). One reason this may occur is that the bureaucrats rely on the group as a sole source of information.[17] In this case, the model predicts an insulated agency even when the group is quite certain it will remain in power. Insulation is preferred because it guarantees a policy outcome close to the group's most preferred outcome by eliminating any possibility that opposing groups will exercise political control over the agency.

Previous work argued that because groups that prefer insulated policies are electorally weak and only rarely hold public authority, then little policymaking is likely to be affected by the loss of policy effectiveness created by insulation (De Figueiredo 2002). However,

[17] See Wilson's (1989, p. 79-80) discussion of the Federal Maritime Commission and Civil Aeronautics Board. This also suggests the importance of other venues of influence as discussed above. A client group that knows it will have direct access to the agency via information provision (and not via politicians) may prefer insulation to eliminate any interference by politicians.

insulated agencies have been found to be durable across time (Lewis 2004); therefore, even if the conditions for their creation only occur occasionally, once they occur the agencies will persist after the insulating group has lost power. My results suggest that groups that expect to retain power, like those found in client politics, may also create insulated agencies if a group expects bureaucrats to share its preferences. Lastly, I argue agencies that are the product of entrepreneurial politics, meaning agencies that make policies intended to benefit the public at large (i.e., policies that have diffuse benefits) are most likely to be insulated. Altogether, this paper clarifies the set of conditions that may produce insulated agencies and suggests that insulation may be an important cause of policy ineffectiveness.

Finally, I have modeled the multiple types of agency characteristics that reduce political control as a single parameter. However, specific insulating mechanisms may have varied effects, particularly with respect to agency performance and policy ineffectiveness. For example, mandating that an agency implement a specific policy (e.g., regulate the amount of lead in natural waterways) limits bureaucratic discretion and could reduce agency effectiveness, but creates certainty that the group's concern will be addressed. (Mandated policymaking may also be useful if the group is uncertain over the preferences of bureaucrats or bureaucrats do not share the group's preferences.) Conversely, delegating broad discretion (e.g., regulate environmental pollutants), giving appointees a fixed term of appointment and for cause protections, and exempting agency rulemaking from political review by the Office of Information and Regulatory Affairs insulates an agency from political control while preserving discretion and should result in development of policy expertise (Gailmard and Patty 2007).[18] Scholars should pursue theoretical development of models that parse specific insulating mechanisms observed in law, their effects, and how that influences groups' preferences over insulation to improve our understanding of agency design.

[18]Civil servants' policy expertise and uncertainty about what public policy is a fundamental reason for delegation of policymaking authority by political principals to federal agencies in the literature (e.g., Epstein and O'Halloran 1999). Any model incorporating an effect of insulation on expertise would need to incorporate uncertainty over policy outcomes or a variation in the quality of public policy.

1.3.1 Model Extension: Incorporating Separation of Powers and Interest Group Competition

This model identifies an interest group's induced preferences over agency design, but is unable to predict the characteristics of agencies that will actually be created because the model does not include lawmaking under separation of powers. Additionally, the group not initially in power (G_2) is unable to redesign the agency if it comes to power, which limits the richness of the strategic interaction of groups in the model. In this section, I sketch an extension of the model that addresses both shortcomings.

To better address separation of powers, the president could be added to the model and given a veto over the proposed agency. The groups could be re-conceived of as coalitions (similar to De Figueiredo 2002) and thought of as political parties and groups working together (e.g., the Democratic members of Congress and labor unions versus Republican members of Congress and businesses). This reformulation incorporates separation of powers via preference divergence between the president and the coalitions while promoting tractability by not modeling groups separately from members of Congress. Elections would then bring one of the two coalitions to power and one of two presidents to power.

To incorporate group competition, the coalition that comes to power after the election is able to redesign the agency. This addition will force the coalition that makes the initial design proposal to consider whether the opposing coalition would redesign that agency in equilibrium. This reformulation of the model may also provide insight into the durability of agencies over time.

Figure 1.7 provides the extensive form of the reformulated game prior to the election. The sequence of play in the reformulated model would be:

1. The coalition in power passes legislation designing an agency or retains the status quo.
2. If legislation is passed, the president vetoes the legislation or signs the legislation.

3.a. If the president signs the legislation, the agency is created and sets policy.

3.b. If the president vetoes the legislation, the status quo is retained.

4. An election occurs that puts one of the coalitions in power and elects a new president.

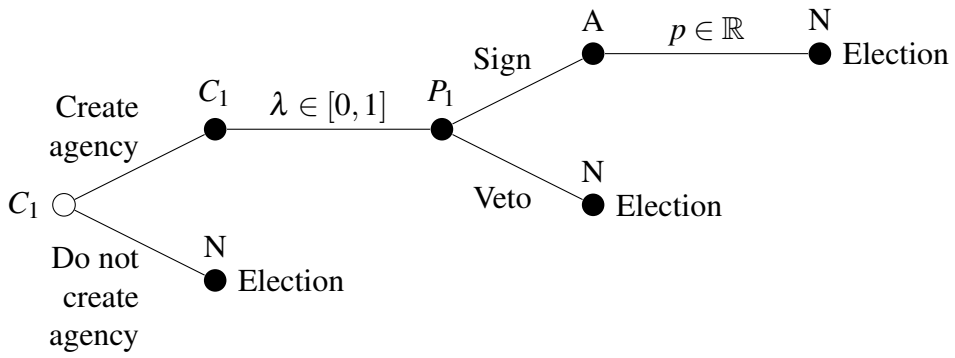
5. Repeat steps 1-3 with the inherited policy outcome from prior play and newly elected policymakers.

6. If an agency exists, it sets final policy. Otherwise, the status quo policy is the final outcome.

7. Players receive payoffs based on final policy.

Lastly, this reformulation of the model could be further extended to incorporate the presidential appointment process with the coalition in power providing "advice and consent." This would give the agency's post-election ideal point as $x_A = (1-\lambda)x_p + \lambda B, i = \{1,2\}$, where x_p is the ideal point of the political appointee chosen by the president and confirmed by the coalition.

Figure 1.7: Pre-Election Extensive Form of the Reformulated Agency Insulation Game



1.4 Conclusion

Federal agencies make policies that affect nearly every aspect of modern life and sometimes these agencies prove to be inefficient and ineffective. Scholars have argued that the design of these agencies is partly to blame. Interest groups face uncertainty about their

future ability to influence policy, which causes them to favor agency structures that insulate agencies from political control; however, these structures may reduce agency effectiveness. Initial theory was unclear about how political uncertainty might vary across groups and across time and did not consider how preference congruence between interest groups and bureaucrats that will work in the agency might affect groups' preferences regarding agency creation and insulation. Subsequent work clarified the relationship between political uncertainty, defined as electoral uncertainty, and policy insulation, finding that groups that expect to lose power are most likely to favor insulation. However, this work also did not consider bureaucrats' policy preferences. I developed a model that clarifies the determinants of interest groups' induced preferences over agency design. The model demonstrates that agency design depends critically on the policy preferences of the bureaucrat. When the bureaucrat and group have very similar preferences, even a group that expects to retain policymaking authority will prefer an insulated agency. When the bureaucrat and group have dissimilar preferences, groups that expect to lose authority are likely to prefer to retain some political control or the status quo.

These results have important implications for agency design and, by extension, the quality of public policy. Coupling the model results with the insight that differences in political resources across groups cause political uncertainty to vary predictably with the type of interest group environment yields predictions about which interest group environments are most likely to produce insulated agencies. It follows that if insulation reduces agency effectiveness, then the quality of policy should also vary predictably across across interest group environments and the associated policy domains.

Chapter 2

Ideology and Presidential Appointment Strategies

Effective staffing of the executive branch is fundamental to a president's administrative success. Newly elected presidents must fill over 4,000 appointed positions, including approximately 500 key positions that require Senate confirmation.[1] Political appointees hold senior policy and management position across the executive branch, and include Cabinet secretaries, heads of independent agencies, and senior staff who assist Cabinet secretaries and agency heads. Presidents need appointees in these positions who will faithfully pursue the president's policy agenda and who have the managerial and policy expertise to implement that agenda (Lewis 2008; Moe 1985; Weko 1995); however, it is difficult to find appointees who are loyal and expert to fill each position. This forces presidents to choose whether to emphasize loyalty or expertise when selecting an appointee for a position (Edwards III 2001; Lewis 2008). Some scholars have argued that presidential personnel offices often stress loyalty and ideology above other traits (Edwards III 2001; Moe 1985). Indeed, Lyn Nofziger, who worked in President Reagan's personnel office, said, "[T]he first thing you do is get loyal people, and competence is a bonus" (Nofziger 2003).

Political scientists have generally formalized the president's staffing problem as a principal-agent model where the president (principal) must choose an appointee (agent) that will best manage a federal agency to implement the president's agenda (e.g., Hammond and Hill 1993; Hollibaugh, Jr 2015; see Bendor and Meirowitz 2004, for a general discussion of principal-agent models of delegation). Within this principal-agent framework, a set of models has adopted ideology as the primary trait presidents care about when selecting appointees. These models incorporate the president's ability to nominate an appointee to a position that requires Senate confirmation or to appoint them unilaterally (Bonica, Chen,

[1]The Partnership for Public Service (PPS) has identified 559 key positions: https://ourpublicservice.org/issues/presidential-transition/political-appointee-tracker.php. In total, there are about 1,200 Senate-confirmed positions, including positions, such as U.S. Marshals, who do not hold senior leadership positions.

and Johnson 2015), the influence of interest groups on agency policymaking (Bertelli and Feldmann 2007), and appointee's imperfect control of career civil servants (Jo and Rothenberg 2014) to yield competing predictions about if and when it is optimal for presidents to select appointees with policy views identical to their own.

Using a method developed by Clinton et al. (2012), I use two surveys of senior federal employees – one fielded at the end of President George W. Bush's second term and one fielded at the end of President Obama's second term – to estimate the ideology of President Bush, President Obama, members of Congress, political appointees, and career civil servants on the same scale. The estimates allow me to evaluate predictions about the effect of Senate confirmation and imperfect control of civil servants on the ideology of political appointees.

I find that the ideology of Senate-confirmed appointees differs more from presidents' ideology than does the ideology of non-Senate confirmed appointees, which, consistent with related research (e.g., Bertelli and Grose 2011; Bonica, Chen, and Johnson 2015; Nixon 2004), suggests that Senate confirmation does force presidents to select appointees whose ideology differs from their own to secure Senate confirmation. While liberal (conservative) presidents clearly select liberal (conservative) appointees, I find that **within** administrations presidents tend to place more conservative appointees in agencies with conservative career civil servants and more liberal appointees in agencies with liberal career civil servants. This finding implies that career civil servants possess an informational advantage over political appointees, and that this advantage plays an important role in presidents' appointment strategies. Presidents select appointees with an ideology similar to appointees to promote information sharing between appointees and careerists (Jo and Rothenberg 2014), which has the potential to improve the quality of public policy. I conclude by relating my findings to the larger literature on how presidents balance appointee traits and discuss important questions that remain.

2.1 Presidential Appointment Strategies and Ideology

Scholars have generated competing predictions about if and when it is optimal for presidents to choose political appointees who share their ideology, all operating within a shared principal-agent framework. A useful starting place is a basic principal-agent model in which the president chooses an appointee to head an agency and that appointee implements her most preferred policy (e.g., Bendor and Meirowitz 2004). This model, which assumes there is no uncertainty in policy implementation,[2] and that appointees can perfectly control career civil servants, predicts that it is always optimal for presidents to select appointees who share their policy views exactly. This claim is commonly referred to as the ally principle. I focus on how Senate confirmation and imperfect control of civil servants yield alternative predictions that conflict with the ally principle because the data I have are best suited to test these models.

2.1.1 Senate Confirmation

Article II Section 2 of the United States Constitution gives the president the authority to appoint senior government officials, such as secretaries of executive departments, subject to the advise and consent of the Senate. Article II Section 2 also grants Congress the authority to vest appointment authority for "inferior" offices in the president alone. In the modern executive branch, Congress has created several types of "inferior" positions that presidents may staff at their discretion (e.g., non-career positions in the Senior Executive Service, presidential appointees, and Schedule C positions). Therefore, there are, broadly, two types of presidential appointees - those that require Senate confirmation and those that do not (see Lewis 2008, for a detailed description).

If the ally principle holds, but the president's nominees to Senate-confirmed positions must satisfy the ideological preferences of Senators who do not share the president's views,

[2] An equivalent assumption is that appointees's policy expertise is homogenous.

then the ideology of appointees to positions that do not require Senate confirmation will be more similar to the president's ideology than the ideology of appointees to Senate-confirmed positions[3] (Bonica, Chen, and Johnson 2015). This prediction yields the first hypothesis:

H_1: The ideology of appointees who do not require Senate confirmation will be more similar to the president's ideology than Senate-confirmed appointees.

2.1.2 Imperfect Control of Civil Servants and Information Asymmetry

Another extension of the baseline principal-agent model incorporates bureaucratic hierarchy by analyzing the president's choice of appointee when that appointee must oversee a career civil servant, who sets initial policy which the appointee can override (Jo and Rothenberg 2014). If it is costly for the appointee to evaluate and change the civil servants' policy choice, then the president's optimal appointee has an ideology more extreme than president's and on the opposite side of the ideological spectrum from the civil servant.[4]

[3]There are multiple models of presidential appointments that incorporate Senate confirmation (e.g., Bonica, Chen, and Johnson 2015; Bertelli and Feldmann 2007; Hollibaugh, Jr 2015). They make varying assumptions about what Senator is influential (e.g., the relevant committee chair, the median member) and what occurs if a nominee is rejected (e.g., both the Senator and president pay an exogenous cost, policy reverts to an exogenous agency ideal point). Before testing such models, I must complete additional data collection, namely determining the timing of Senate-confirmed appointments to determine the relevant Senators. (I will likely also need to estimate ideal points for additional Congresses.) One possible reversion point is to assume that policy will be set by a careerist serving in acting capacity using previously delegated policymaking authority, which could be measured using the mean careerist ideal point from the agency. Applying the classic Romer-Rosenthal agenda-setter model (Romer and Rosenthal 1978) with the president making a take-it-or-leave-it offer to the relevant Senator, would predict the president should be able to get appointees with more similar preferences to his own confirmed as the ideology of the careerist (i.e., the status quo) diverges from the ideology of the relevant Senator. However, assuming policy is set by an acting careerist may not be valid assumption for cases when appointees have a fixed term and serve across administrations, such as independent commissions. See Nixon (2004) for a discussion of reversion points, including this point about commissions.

[4]Bertelli and Feldman 2007 make an identical prediction using an alternative model. If agency policymaking requires negotiation with an outside group, resulting in policy that is a compromise between the agency head and the interest group, then the president may prefer an appointee whose opposes the group more than the president does. (In this model, negotiated policy is assumed to be a convex combination of the ideal policy of the group and the appointee with a coefficient, $\lambda \in [0,1]$, that gives the influence of the appointee.) My data lack estimates of the preferences of interests groups that would be necessary to test Bertelli and Feldman's (2007) model.

Moreover, as the difference between the president's ideology and the civil servant's ideology increases, the difference between the president's ideology and the optimal appointee's ideology also increases (assuming fixed costs of appointee oversight). This relationship occurs because civil servants propose policies that are as similar as possible to their most preferred policy without inducing the appointee to conduct oversight, and change the policy. Therefore, an appointee whose ideology is more extreme than the president causes civil servants to strategically propose policy near the president's most preferred policy. This prediction yields the second hypothesis:

H_2: If the president is more conservative (liberal) than career civil servants in the agency, the ideology of the optimal appointee will become more conservative (liberal) as the ideology of career civil servants becomes more liberal (conservative).

Civil servants often have an informational advantage over both the appointee and the president. Indeed, civil servants spend decades developing expertise in specific policy domains, whereas appointees may have no prior experience working in an agency and often leave government service within a few years. Choosing an appointee with preferences similar to civil servants can induce the civil servant to share information with appointees (Jo and Rothenberg 2014). Therefore, the president may prefer to trade ideological congruence with an appointee for an improvement in the quality of policymaking. This yields the third hypothesis:

H_3: If civil servants possess an informational advantage over political appointees, the ideology of the optimal appointee will become more conservative (liberal) as the ideology of career civil servants become more conservative (liberal).

2.2 Data, Variables, and Methods

I use data from the 2007-2008 and 2014 Surveys on the Future of Government Service to estimate the individual-level ideology of federal employees, members of Congress, and

Presidents George W. Bush and Barack Obama using a method developed by Clinton et al. (2012). Specifically, respondents to the surveys were asked whether they would have supported a set of 25 Congressional measures, 14 from the 109th Congress and 11 from the 113th Congress. I combine survey respondents' positions (yes or no) with roll call votes from the 109th and 113th Congresses, including public positions of Presidents Bush and Obama, to generate estimates of individual ideology that are directly comparable.[5] Please refer to Appendix B for estimation details, including question text. In Section B.2 of Appendix B, I show that results from the main text are replicated using survey respondents' self-reported ideology. Moreover, the distribution of self-reported ideology is reassuringly similar to the distribution of ideal points.

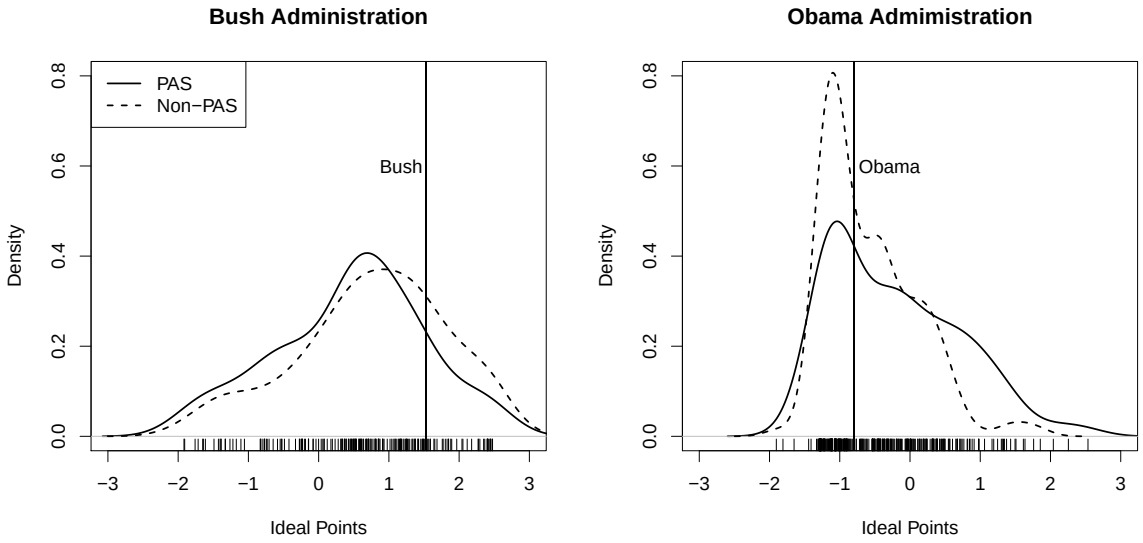
The first survey was in the field in late 2007 and early 2008 at the end of President Bush's second term. The second survey was in the field in the field from August to December 2014 at the end of President Obama's second term. Both surveys targeted senior appointed and career civil servants (e.g., career members of the Senior Executive Service, other senior career executives at the GS-14 or GS-15 level) from across the executive branch, including the 15 executive departments, over 60 independent agencies, and 7 agencies in the Executive Office of the President. The surveys targeted 7,448 and 14,698 federal employees, and the response rates were 33% and 24%, respectively.[6] From the Bush Administration, I have ideal point estimates for 2,008 career civil servants (31% of the target population) and 203 political appointees (19%), of which 82 required Senate confirmation (PAS). From the Obama Administration, I have ideal point estimates for 2,882 career civil servants (23%) and 383 political appointees (16%), of which 125 were PAS.[7] The range of

[5]Jeff Lewis and Keith Poole compiled the roll call data and presidents' public positions on legislation. I downloaded them from votview.com.

[6]Clinton et al. (2012) compared the distribution of partisanship in the target population to the distribution of self-reported partisanship among survey respondents, where possible, and did not find that Democrats, Republicans, or Independents responded at higher rates. For the second survey, a private firm was used to determine partisanship among the target population, where possible. The distribution of self-reported partisanship among respondents does not differ differ materially from the distribution of partisanship among the target population. There is mixed statistical evidence that suggests that Democrats are slightly more likely to respond to the second survey.

[7]Both surveys used a commercial database of federal employees maintained by Leadership Directories,

Figure 2.1: Ideal Points of PAS and Non-PAS Appointees by Administration



estimated ideal points, including the presidents and members of Congress, is -2.59 to 2.71, with an interquartile range of -0.84 to 0.74 and a median of -0.09.

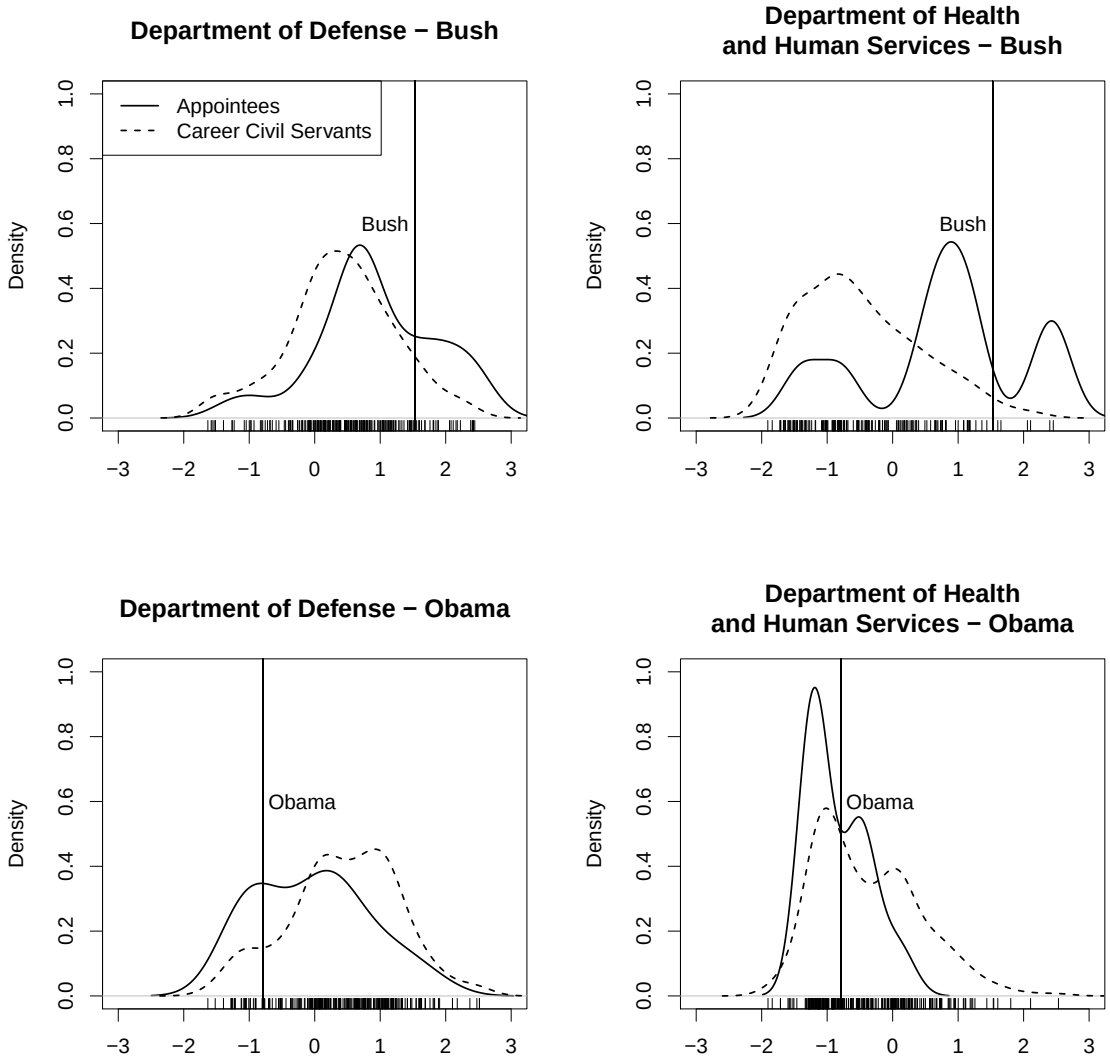
Using these ideal points to make inferences about the ideology of appointees, civil servants, and their political principals requires two primary assumptions. First, the votes by members of Congress, public positions of the presidents on legislation, and positions reported by survey respondents are sufficiently similar to be treated as equivalent when estimating ideal points. Second, the single-dimension recovered is sufficiently correlated with each agency's policy jurisdiction that the estimated ideal points capture relevant preferences. In other words, it assumes that the policy domains of federal agencies map onto a single dimension and that these ideal points recover a relevant preference ordering. Importantly, the measures included on the surveys are related to relevant policy dimensions such as immigration reform, national defense, environmental protection, health policy, and social services.

Inc. to identify the target population. The database was also used to identify political appointment type. For additional details on the 2007-2008 survey, refer to Clinton et al. (2012). For additional details on the 2014 survey, refer to Lewis and Richardson (2017) available here: http://www.vanderbilt.edu/csdi/research/lewis_richardson_2014sfgs.pdf.

I begin by comparing the distribution of ideal points among PAS and non-PAS appointees (Presidential Appointees, Schedule C Appointees, and Non-Career Members of the Senior Executive Service). Figure 2.1 plots the distributions of PAS and Non-PAS appointees and the ideal points of the President Bush (1.53) and President Obama (-0.79) by administration. Larger values indicate more conservative ideology. The distribution of Non-PAS appointees is more conservative than PAS appointees in the Bush Administration, while the opposite is true in the Obama Administration. This pattern is further demonstrated by Model 1 in Table 2.1, which regresses appointees' ideal points on indicator variables for the Obama Administration, PAS, and the interaction between PAS and Obama administration. The unit of analysis is the political appointee. Non-PAS and PAS appointees have average ideal points of 0.75 and 0.46 in the Bush Administration, respectively, compared to an average of -0.58 among Non-PAS appointees and an average of -0.22 among PAS appointees in the Obama Administration. (The same ordering holds analyzing medians.) Overall, this provides support for H_1 – the ideology of Non-PAS appointees is more similar to the president than PAS appointees, which suggests that Senate confirmation does force the president to select appointees whose ideology differs from his own more than he prefers. However, Figure 2.1 shows that the ideology of many appointees, including many Non-PAS appointees, differs substantially from the President. Indeed, the ally principle implies that the ideal points of Non-PAS appointees should be clustered around the ideal points of the presidents. I now turn to testing hypotheses 2 and 3 to evaluate two predictions about why presidents may prefer appointees that do not share their policy preferences.

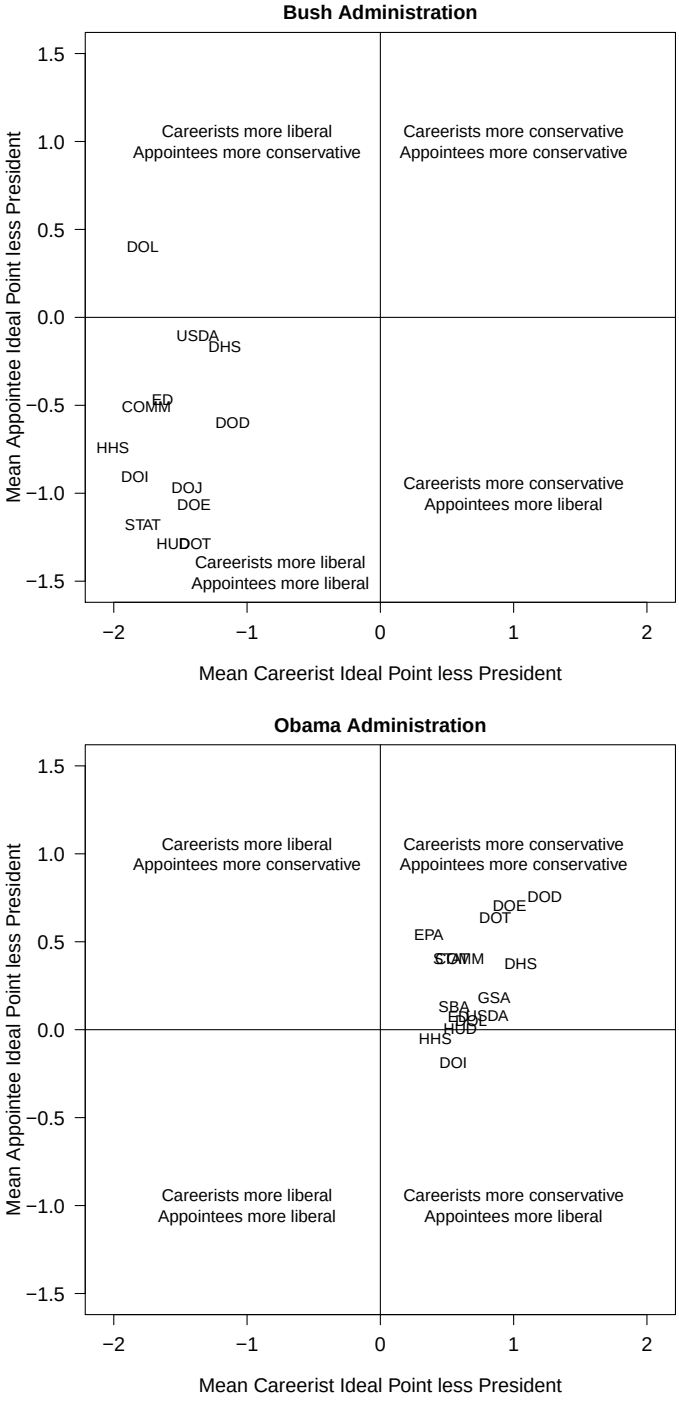
Figure 2.2 plots the distribution of appointees and career civil servants in the Department of Defense (DOD) and the Department of Health and Human Services (HHS) by administration. The careerists in DOD tend to be conservative and the careerists in HHS tend to be liberal across administrations. Appointees to HHS in the Bush Administration tend to be more conservative than careerists at HHS, but more liberal than President Bush.

Figure 2.2: Ideal Points of Appointees and Careerists by Administration



Appointees to DOD in the Bush Administration are about as conservative as careerists in DOD, and both tend to be more liberal than President Bush. The converse is true in the Obama Administration. Appointees to HHS have similar ideal points to careerists in HHS. Appointees to DOD tend to be more liberal than careerist in DOD, but both tend to be more conservative than President Obama. Overall, Figure 2.2 suggests that careerist and appointee ideology is positively correlated.

Figure 2.3: Ideal Points of Appointees and Careerists less Presidents' Ideal Point



Note: I limited agencies to those with at least a 10% response rate for appointees and a 15% response rate for careerists. I also limited agencies to those with at least 30 respondents in the target populations to protect anonymity.

To provide a more systematic analysis, Figure 2.3 plots the mean ideal point of appointees less the presidents' ideal point (y-axis) and the mean ideal point of careerists less the presidents' ideal point (x-axis) for those agencies with a sufficient number of respondents for each administration. In general, this plot shows that, on average, if careerist are more liberal (conservative) than the president, the appointees are more liberal (conservative) than the president. There is little evidence supporting H_2, and there is some evidence in support of H_3. If Presidents Bush and Obama were selecting appointees whose ideology is more extreme than their own and on the opposite side of the ideological spectrum from civil servants, as H_2 predicts, then there would be more observations in the upper-left and lower-right quadrants. On the contrary, nearly all the observations fall into the quadrants where both the mean ideal points of appointees and career civil servants are more liberal or more conservative than the president.

Model 2 in Table 2.1 further evaluates both H_2 and H_3 by including the mean careerist ideal point aggregated by executive departments, independent agencies, and agencies in the Executive Office of the President in addition to the controls for presidential administration and appointee type.[8] I limited the sample to agencies for which the careerist response rate was at least 15% and clustered the standard errors on the agency. The coefficient on the mean careerist ideal point by agency is positive and distinguishable from zero with a high degree of confidence. As the careerists in an agency become more conservative, on average, the appointees to that agency also become more conservative.

Model 2 shows that, while the average Bush appointee is more conservative than the average Obama appointee, appointees to conservative agencies, like DOD, tend to be more conservative than appointees to liberal agencies, like HHS, **within** administrations. Specif-

[8] I aggregated by executive department to preserve observations. Appointees in executive departments often work in Offices of the Secretary (or the Office of the Attorney General). Respondents that work there are not identified in the first survey, resulting in many appointees in executive departments that are not assigned to a specific agency within the executive department. Therefore, aggregating at the agency-level within executive departments results in significant case loss in the Bush Administration, because it is not clear what the correct careerist agency mean is for many appointees. Aggregating by agency within executive departments does not produce different conclusions.

Table 2.1: OLS Models of Appointee Ideology

Model	(1)	(2)	(3)
Obama Appointee	-1.32^{***}	-1.31^{***}	-1.34^{***}
	(0.10)	(0.13)	(0.14)
PAS	-0.29^{*}	-0.29^{**}	-0.27^{**}
	(0.15)	(0.13)	(0.13)
Obama App. $\times$ PAS	0.65^{***}	0.61^{***}	0.64^{***}
	(0.18)	(0.14)	(0.15)
Mean Careerist Ideal Point		0.37^{**}	0.50^{**}
		(0.18)	(0.19)
Mn. Careerist $\times$ Skill			0.18
			(0.33)
Workforce Skill			-0.03
			(0.08)
Constant	0.75^{***}	0.75^{***}	0.77^{***}
	(0.10)	(0.10)	(0.10)
N	586	538	496
R^2	0.28	0.30	0.34
N Clusters		64	46

Robust standard errors in parentheses.
Standard errors clustered on agency in Models 2 & 3.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$
in a two-sided test.

ically, the mean ideal point of careerists in HHS is -0.38 and the mean ideal point of careerists in DOD is 0.44 in the Obama Administration. Therefore, a Non-PAS appointee to HHS is expected to have an ideal point of -0.70, very near president Obama's ideal point of -0.79. A Non-PAS appointee to DOD is expected to have an ideal point of -0.40. Given the careerist means of -0.48 and 0.42 at HHS and DOD, respectively, the equivalent calculation for the Bush Administration predicts the ideal point for a Non-PAS appointee to DOD will be 0.61 compared to 0.28 at HHS. Overall, this provides evidence against H_2 and in support of H_3.

Respondents to the second survey were asked to evaluate the skill of the workforce of federal agencies. Applying a Bayesian multi-rater model to respondents' evaluations generates estimates of the workforce skill of 159 federal agencies, including the 15 executive

departments (Richardson, Clinton, and Lewis 2017).[9] The estimate ranges from -1.99 to 1.83. Agencies like NASA, the Federal Reserve, and the National Institutes of Health are among the most skilled. Agencies like the Office of Personnel Management, Transportation Security Administration, and Department of Veterans Affairs are among the least skilled. More skilled workforces should possess a larger informational advantage over appointees than less skilled workforces. A larger information asymmetry between career civil servants should result in a stronger incentive to select appointees that share career civil servants' ideology to promote information sharing. In other words, the positive correlation between mean careerist ideology and appointee ideology should be larger in agencies with more skilled workforces if the information asymmetry exists.

In Model 3 in Table 2.1, I interact the estimate of workforce skill with the mean careerist ideal point to further evaluate H_3. The coefficient on the interaction of workforce skill and average careerist ideal point by agency is positive, suggesting that the positive correlation between mean careerist ideal points and appointee ideal points is larger among more skilled agencies, but it is not distinguishable from zero with a high degree confidence. While intriguing, I cannot make any additional claims based on the results from Model 3.[10] Nonetheless, the positive correlation between the average careerist ideal point by agency and appointees' ideal points in Models 2 and 3 supports H_3. These models provide evidence consistent with a formal model that emphasizes careerists informational advantage over appointees, which incentivizes Presidents Bush and Obama to choose appointees with ideologies less similar than their own and more similar to the ideologies of career civil

[9]Respondents were asked, "In your view, how skilled are the workforces of the following agencies?" Respondents were asked to rate the skill level of 5-8 agencies on a one-to-five scale from "Not at all skilled" to "Very skilled." All respondents were given the Office of Management and Budget and the Office of Personnel Management to "bridge" respondents evaluations because most federal executives have experience with these two agencies. Prior to this question, the survey asked respondents to select the three federal agencies that they work with the most. These three agencies were then included in the list of agencies the respondent was asked to evaluate. The average evaluations of respondents who reported working with each agency were used to create an informed prior to give the perceptions of more knowledgeable respondents greater weight. The multi-rater model allowed each respondent to have a unique mapping from the latent space to the survey response scale.

[10]The coefficient is distinguishable from zero using self-reported ideology as the dependent variable. See Model B3 in Table B.1 in Appendix B.

servants to improve the quality of public policy.

2.2.1 Alternative Explanations for the Correlation between Careerist and Appointee Ideology

I have relied on a set of formal models (Bonica, Chen, and Johnson 2015; Jo and Rothenberg 2014) that assume appointee ideology is the primary trait that presidents (and Senators) care about when evaluating appointees because the data I have are best suited to test these theories. However, a related body of research measures appointees' traits in addition to ideology, including policy and managerial expertise (Krause and O'Connell 2014; Hollibaugh, Jr., Horton, and Lewis 2014; Hollibaugh, Jr 2015; Parsneau 2012).[11] This literature suggests an alternative explanation for the positive association between mean careerist ideal points and appointee ideal points: presidents seek appointees who share their ideology and who meet a minimum competence threshold (see Hollibaugh, Jr 2015, for a formal treatment). If expertise in these policy domains is correlated with certain policy views, then presidents selecting appointees who possess the necessary competence would decrease appointees' ideological congruence with the president in certain policy domains, which would result in a positive association between the ideology of expert careerists and expert political appointees.

The magnitude of the correlation between ideology and expertise is a function of the pool of potential appointees (Lewis 2009). If the pool of potential appointees contains many individuals whose policy views span the ideological spectrum and who are expert, then presidents of both parties should be able to fill positions with experts who share the president's policy views. If the experts are concentrated at one end of the ideological spectrum, then presidents on the end of the spectrum that lacks appointees may be forced to trade ideological congruence for expertise or vice versa.[12] An important task for scholars

[11] See Hollibaugh, Jr., Horton, and Lewis (2014) and Hollibaugh, Jr (2015) for research on presidents' patronage concerns in addition to loyalty and expertise.

[12] If presidents require a minimum level of expertise and they cannot find appointees who posses both

going forward is identifying the set of policy domains for which the correlation between ideology and expertise is large and the set for which it is weak. Moreover, there are some policy domains in which an individual's ideology is less likely to predict her views about what policy is best (e.g., the National Archives and Records Administration, General Services Administration).[13] Presidents may emphasize other appointee characteristics in these cases, making it important to identify this set of policy domains as well.[14]

Another alternative explanation is that career civil servants tend to be moderate or liberal in general. For example, many civil servants in the Department of Defense, one of the most conservative agencies, are moderate as shown in Figure 2.2 (and Figure B.4). If both presidents are following the ally principle, a correlation between appointee ideology and careerist ideology may exist because President Obama tends to appoint liberal and moderate appointees, career civil servants tend to be liberal or moderate, and there are more observations from the Obama Administration in the data. To address this potential explanation, I estimated Model 2 in Table 2.1 on each administration separately. The coefficient on the mean careerist ideal point by agency is positive in both administrations, but smaller in the Bush Administration (0.31 compared to 0.43). The coefficient in the Bush Adminstration cannot be distinguished from zero with a high degree of confidence (p-value$= 0.32$) due to the decreases in magnitude and sample size, but the result holds in the Obama Administration (p-value < 0.01). The positive coefficient **within** administrations suggests that the result is not driven by the ally principle and the overall distribution of career civil servants.

ideological congruence and expertise, then the loyalty-competence tradeoff would result in higher variation in appointee ideology in such agencies relative to agencies to agencies where many appointees with both traits are available. For example, it may be that variance in appointee ideology at HHS is lower in the Obama Administration than in the Bush Administration. The challenge is identifying which agencies are subject to the pool constraint across administrations.

[13] A president may want loyal individuals (who are also more likely to share the president's ideology) in such agencies to direct resources for partisan purposes. For example, political appointees at the General Services Administration directed government spending to potentially vulnerable Congressional districts during the Administration of George W. Bush (Gordon 2011).

[14] Another important question is: For which domains is ideological policy conflict sufficiently severe (or expertise sufficiently unimportant) to cause presidents to prefer ideological congruence over expertise? Formal models of delegation that consider variation in exogenous agent expertise (Bendor and Meirowitz 2004) or endogenous expertise formation (Gailmard and Patty 2007) predict that once preference divergence between the principal and agent is too great, the principal will not delegate to that agent regardless of expertise.

Indeed, the data indicate that appointees in the Obama Administration were, on average, more conservative in agencies where career civil servants were also more conservative. It is likely that the coefficient in the Bush Administration would be distinguishable from zero with a high degree of confidence if the sample size were larger.[15]

2.3 Discussion and Conclusion

I analyze estimates of the ideology of presidents, political appointees, and career civil servants from two presidential administrations to test predictions from formal models about if and when presidents prefer to select appointees who share their ideology. I find that the difference between the ideology of Senate-confirmed appointees and the president's ideology is greater, on average, than the difference between the ideology of non-Senate confirmed appointees and the president's ideology. This suggests that Senate confirmation constrains presidents' choice of appointees, forcing them to nominate appointees with less congruent ideology to secure Senate confirmation. (This replicates a finding by Bonica, Chen, and Johnson (2015) using a different measure of ideology and among a larger class of appointees - they analyze data on PAS and Schedule C appointees only.) I do not find evidence that presidents select appointees whose ideology is more extreme than their own and on the opposite end of the ideological spectrum from career civil servants to affect civil servants' policy proposals. Rather, while appointees selected by a liberal president are clearly more liberal than appointees selected by a conservative president, appointees tend to be more conservative (liberal) if career civil servants working at the agency are conservative

[15]The smaller effect in the Bush Administration may be due to the fact that even the most conservative agencies contain many moderates. About 40% of career civil servants in the Department of Defense report that they are "Moderate" across administrations. See Figure B.4. Therefore, it may be that President Bush suffers greater agency loss by choosing appointees that share careerists' ideology in the most liberal agencies than President Obama suffers by choosing appointees who share careerists' ideology in the most conservative agencies, which causes the Bush Administration to emphasize ideology over expertise in more agencies than the Obama Administration. The proportions of conservative appointees to HHS in the Bush Administration and moderate appointees to DOD in the Obama Administration in Figure B.4 suggest such a relationship, which would be consistent with formal models of delegation that consider variation in agent expertise as discussed in footnote 14.

(liberal) textbfwithin administrations. This implies that career civil servants' informational advantage over political appointees plays an important role in presidential appointment strategies (Jo and Rothenberg 2014). Presidents are willing to trade some ideological congruence with their appointees to promote information sharing among appointees and career civil servants.

The correlation between the ideology of appointees and career civil servants is an intriguing finding and consistent with a theoretical model that emphasizes career civil servants informational advantage, but there are at least two reasons for caution.[16] First, I cannot evaluate whether the ideology of appointees and career civil servants is sufficiently similar to promote information sharing. For example, the mean ideal point of careerists in the Department of Defense in the Obama Administration is 0.44 compared to a mean ideal point of appointees to DOD of -0.03, which is similar to the ideal points of conservative Democrats in Congress. It's unclear how this distance in ideal-point space relates to point predictions in the underlying formal model (Jo and Rothenberg 2014) and whether the distance is sufficiently small to promote information sharing. Moreover, it is unclear how the distance between careerists' and appointees' policy preferences as measured in ideal-point space relate to defense policy. It may be that the observed differences are driven by differences in views on social policy (which are included in the positions used to generate the ideal point estimates), while views on defense policy are very similar.[17] Overall, scholars should work to develop domain specific measures of policy disagreement to better measure relevant policy views.

While I have shown that variation in Senate confirmation and careerist ideology can explain variation in appointee ideology, appointed positions vary in other important ways within and across agencies, including by their location in the internal agency hierarchy, by

[16] An additional concern is whether careerists as first-movers is always a good approximation of agency policymaking and how changing this assumption might change theoretical predictions.

[17] One way to evaluate this is to look at the individual positions related to an agency's policy domain where possible (e.g., look at the item on the surveillance of suspected terrorists on the Bush Administration survey and funding of the National Security Agency on the Obama Administration survey.)

the type of expertise needed for the job, and by the statutory limitations on the president's appointment and removal authority. The hierarchy within agencies may affect the importance of appointee characteristics. Research that measures Senate-confirmed appointees' loyalty, which should be correlated with ideological congruence,[18] and expertise finds that agency heads – department secretaries, commission chairs, and agency administrators – possess less policy expertise than subordinate Senate-confirmed appointees, while loyalty is much higher among agency heads than their subordinates. It may be that presidents attempt to assemble an effective team by emphasizing ideological congruence at the top to ensure the person with ultimate authority shares their views, while selecting someone with expertise to fill subordinate roles (as Krause and O'Connell (2014) suggest). For example, the Attorney General may be selected for ideological congruence while the Deputy Attorney General is selected for expertise and promoted from within the Department of Justice. If a similar pattern holds across agencies, this may also produce a correlation between appointee ideology and careerist ideology that could be better explained by considering hierarchy within the agency.[19]

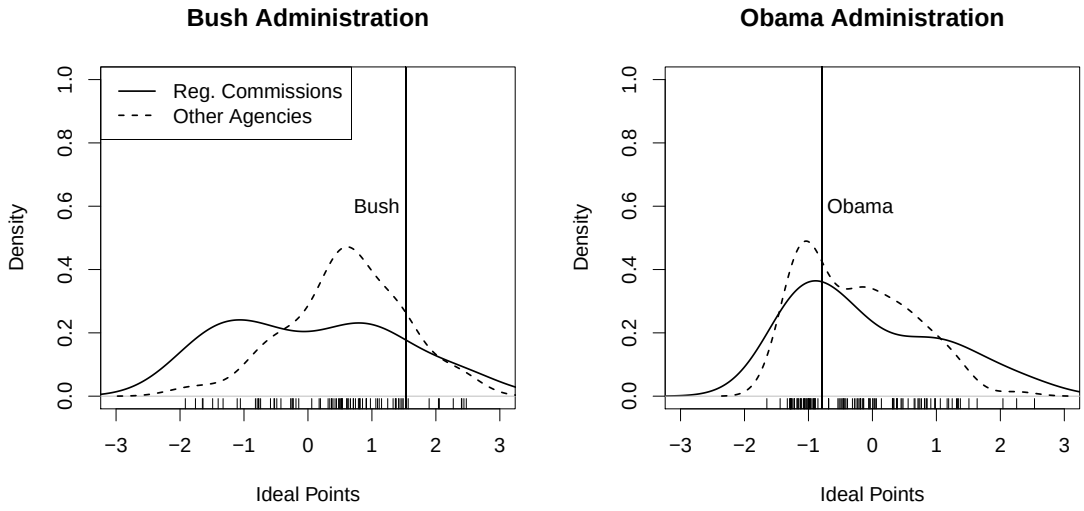
The types of expertise needed to do a job may vary by position within agency and between agencies. For example, it may be easy for all presidents to find someone with expertise and ideological congruence to fill a position as an assistant secretary of public affairs or an assistant secretary for legislative affairs because there are many people across the ideological spectrum (i.e., in both major political parties) who have the relevant expertise. Conversely, it may be harder for presidents to find ideological congruence and expertise when selecting appointees for more specialized positions, such as the Assistant Secretary of Defense for Research and Engineering or the Under Secretary of Commerce

[18]Krause and O'Connell (2014) define loyalty in the context of organizational hierarchy. This includes appointees' conception of their role as subordinates who should be responsive to their superior, the president, regardless of their personal views. The data they use to measure loyalty includes shared party affiliation with the president and similar measures that are correlated with ideology.

[19]Using the survey data, this claim could be evaluated by whether the correlation between appointee and careerist ideology is stronger among appointees who report a long tenure in their agency, which would indicate they are a career civil servant promoted from within.

for Intellectual Property and Director of the United States Patent and Trademark Office.[20] In other words, the pool of potential appointees that possess ideological congruence and expertise may vary by position independent of or in addition to agency, and the strength of the correlation between expertise and ideology may vary by position. This suggests a more careful consideration of the characteristics of each position would be useful.

Figure 2.4: PAS Appointees by Agency Type and Administration



Lastly, the president's appointment authority for certain positions is restricted by statute (Selin 2015; Lewis 2003). Some positions are subject to limits on the type of person that can be appointed through expertise, geographic, or party-balancing requirements. Other positions are subject to limits on the president's removal of appointees via fixed terms, which may be staggered in multi-member bodies, and "for cause" protections. Independent regulatory commissions tend to be managed by multi-member boards filled with positions that have many of the characteristics that limit presidents' appointment authority (see Lewis and Selin 2012, Tables 4 and 5). Figure 2.4 shows that PAS appointees to independent regulatory commissions tend to be more moderate than appointees to other agencies across administrations. (I look only at PAS positions because these are the positions subject

[20]Haglund (2017) and Mackenzie (1981) make this point.

to statutory restrictions.) The mean ideal point of PAS appointees appointed to regulatory commissions was 0.07 compared to 0.59 in other agencies in the Bush Administration, while the mean ideal point of PAS appointees appointed to regulatory commissions was -0.09 compared to -0.26 in other agencies in the Obama Administration. The difference is distinguishable from zero with a high degree of confience (p-value=0.10 in a two-tailed test) the Bush Administration, but not during the Obama Administration (p-value=0.47 in a two-tailed test). Moreover, the difference in the mean ideal point of PAS appointees to regulatory commissions across administrations is not statistically distinguishable from zero with much confidence (p-value=0.65 in a two-tailed test).[21] Determining whether the ideal points of PAS appointees to regulatory commissions are moderate and similar across administrations because of statutory restrictions on appointee characteristics or because the specialized policy domains that these commissions oversee make expertise more important than ideology to presidents of both parties requires additional data collection. (For example, I need to code whether individual appointees are subject to relevant statutory restrictions.) Nonetheless, this finding makes it clear that a more careful consideration of statutory restrictions on appointment authority is necessary.[22]

Presidents' appointment authority is one of the most important tools that they have to gain control of the executive branch upon taking office. The choices they make are important for the success of their administrations and the content of public policy. My findings are consistent with formal models that emphasize the constraint on presidents' choices of appointees created by Senate confirmation and that career civil servants' informational advantage over political appointees makes presidents willing to trade some ideological congruence with their appointees to promote information sharing among appointees and career civil servants. While these findings are important, a more thorough examination of the

[21] Krause and O'Connell (2014) also find that PAS appointees to executive departments posses more loyalty than appointees to independent commissions (while there is essentially no difference in the expertise).

[22] The models in Table 2.1 are robust to excluding independent regulatory commissions from the models. The coefficient on PAS appointees in the Bush Administration decreases to -0.19, which decreases the confidence that it is different from zero to $p < 0.10$ in a one-tailed test of $\beta < 0$.

characteristics of appointed positions – characteristics that may vary with or independent of agency – is needed to fully understand presidential appointment strategies.

Chapter 3

Politicization and Expertise: Exit, Effort, and Investment

Elected officials ask federal civil servants to accomplish difficult tasks, from maintaining the soundness of the financial system to reducing poverty to ensuring national security. Civil servants need expertise to formulate and implement effective public policy; however, presidents and Congresses do not confer such expertise when they delegate responsibility for policymaking. Rather, civil servants must invest effort in acquiring and applying the necessary expertise.

Many civil servants work for the federal government to craft public policy that achieves their agency's mission and accomplishes goals they believe are important. When the president and civil servants have similar policy goals, civil servants can work with the president's political appointees to achieve these shared goals. However, presidents do not always share the policy goals of civil servants and, when they do not, presidents often use their political appointees to gain control of agency policymaking, which is commonly referred to as politicizing the agency (Edwards III 2001; Golden 2000; Lewis 2008; Moe 1985; Nathan 1975; Waterman 1989; Weko 1995). At the president's direction, these appointees can alter how an agency pursues its mission, and they often exclude civil servants who do not share the president's views from agency policymaking. The change in agency policy and loss of policy influence decreases the value affected civil servants derive from public service, increasing their incentives to exit the agency and decreasing their incentives to invest in policy expertise.

The election of Donald Trump to the presidency has had dramatic consequences for career civil servants, and the changes in policy implemented by his administration provide illustrative examples of how politicization alters civil servants' job satisfaction. At the Department of Homeland Security, the employee unions of U.S. Immigrations and Customs

Enforcement (ICE) and U.S. Customs and Border Protection (CBP) endorsed President Trump during his campaign. Soon after taking office, President Trump increased the discretion of ICE agents to determine enforcement priorities and directed additional resources to both agencies, which has reportedly improved morale among the agents and officers (Bedard). An ICE agent told a reporter with the *New York Times*, "The discretion has come back to us; it's up to us to make decisions in the field. We're trusted again" (Kulish, Dickerson, and Nixon). Conversely, at the Environmental Protection Agency, President Trump has implemented changes intended to undo the Obama Administration's policies to limit climate change and appointed an Administrator, Scott Pruitt, who sued to vacate the same Obama era policies when he was Attorney General of Oklahoma (Dennis). Many civil servants at the EPA do not share the policy views of the President or Administrator Pruitt, and some have resigned rather than work for the Trump Administration (Davidson; Dennis). Employees who believe in anthropogenic climate change and continue to work at the EPA have little expectation that their efforts on the job will improve the public policies they care about. As a result, EPA employees have described morale as "at rock botton," "bleak," and "in the dumps" as they wait for years of work to be undone and face possible downsizing associated with the proposed budget cuts (Davidson; Dennis and Eilperin).

In general, federal agencies serve as repositories of policy expertise across presidential administrations. The choices of individual civil servants to acquire policy expertise, apply that expertise, and, ultimately, whether to remain in public service across presidential administrations determine the quality of policymaking by the executive branch. Identifying the determinants of these choices is necessary to understand the development and maintenance of agency expertise.

Despite the importance of policy expertise for effective policymaking, little empirical work analyzes career civil servants' decisions to remain in public service and exert effort acquiring and applying policy expertise systematically across agencies (but see Andersen and Moynihan 2016; Bertelli and Lewis 2013; Bolton, de Figueiredo, and Lewis 2016;

also, see Carpenter 2001; Gailmard and Patty 2013, for agency-level case studies). Important work by previous scholars identified the potential for agency politicization to reduce policy expertise (e.g., see Golden 2000; Lewis 2008), but they lacked direct, systematic measures of individual-level perceptions and behavior across the executive branch (but see Resh 2015).

In this paper, I use data from an original survey of more than 3,500 federal executives to answer three questions. First, are career civil servants whose preferences diverge from those of political appointees more likely to be excluded from policymaking? Second, are career civil servants that perceive their agency is politicized more likely to exit their agency? Third, are career civil servants that perceive their agency is politicized less likely to exert effort investing in and applying policy expertise? Accounting for potential threats to statistical inference, I find that greater preference divergence between career civil servants and political appointees increases the probability that careerists perceive appointees in their agency have more policy influence than senior career civil servants (i.e., that their agency is politicized). I find that civil servants who perceive that appointees have more policy influence than senior civil servants are more likely to express intent to exit the agency within a year, replicating a finding by Bertelli and Lewis (2013). While I do not find a relationship between perceived politicization and hours worked per week (i.e., general effort), I do find that senior civil servants who perceive greater politicization are less likely to report that they engage in activities associated with investment in policy expertise (e.g., attending training or consulting external policy experts). In total, these findings provide some of the first systematic, micro-level evidence that civil servants whose policy preferences diverge from those of political appointees are more likely to be excluded from policymaking, and that this loss of policy influence is associated with reduced expertise investment.

3.1 How Politicization Reduces Expertise

Politicization reduces expertise at federal agencies by reducing many civil servants' job satisfaction, which increases their likelihood of exiting their agency and reduces their incentives to invest in policy expertise if they stay. Most civil servants intrinsically care about the content of the public policy their agency will create.[1] Civil servants invest in policy expertise by acquiring information that can be used to better predict the outcomes of agency policymaking because it allows them to craft policies that are more likely to produce their preferred results. When deciding whether to remain in public service and, if so, how much effort to exert, a fundamental question policy-motivated civil servants must answer is: Will I have policy influence? Their expectations of future policy influence will be based on the probability they will be assigned key policy tasks and be included in policymaking at their agency.

Careerists' policy influence is partly determined by presidents' staffing choices, and careerists' policy views are an important determinant of these choices. Presidents are more likely to politicize agencies filled with career civil servants who do not share the presidents' policy views because presidents worry such agencies will not otherwise produce policy congruent with their preferences (Lewis 2008). A common technique of presidential control is to concentrate policy influence among employees who share the president's policy views, often political appointees. Senior political appointees make policy and personnel decisions including delegating policymaking tasks and reviewing policy proposals by their subordinates.[2] These decisions often involve excluding a careerist who appointees determine to be problematic from policymaking by replacing the person with an appointee or acceptable careerist, adding an appointed manager above the problematic careerist in the

[1] Seventy-five percent of respondents reported that opportunities to influence public policies that are important to them is an important or very important attribute of their job.

[2] Formal models of delegation provide insight into how appointees are likely to choose which civil servants are assigned important policy tasks. These models suggest that there exists a delegation cutoff threshold: the appointee (i.e. principal) will delegate if and only if some careerist (i.e., agent) is at least as ideologically close to her as this threshold (Bendor and Meirowitz 2004; Gailmard and Patty 2007). Any careerist with preferences sufficiently extreme to exceed this threshold will never be delegated policymaking authority.

organizational hierarchy, or adding appointed special assistants (often Schedule C appointments) that have significant informal authority (Lewis 2008, p. 30-37). In each case, the end result is that the targeted careerist loses policy influence.

Losing policy influence reduces the value policy-motivated careerists receive from public service. They have at least two options to compensate for this loss.[3] First, they can find another job that is more satisfying. The more civil servants lack policy influence, the more likely they are to want to leave the agency for a better opportunity and, eventually, to find another job taking their expertise with them.[4] Second, careerists that choose to remain in public service despite a loss of policy influence are likely to put forth less effort because they do not expect to reap a reward commensurate with their cost of effort. Civil servants must believe the gains from expertise investment, in particular being able to use that expertise to make policy, are sufficient to offset the costs of acquisition; otherwise they will prefer not to invest (Gailmard and Patty 2007).[5]

In sum, politicization increases civil servants' incentives to exit their agency and reduces their incentives to exert effort on the job, including acquiring policy expertise. Civil servants with preferences that diverge from the president and the president's appointees are most likely to be excluded from policymaking because, to gain control, appointees prefer to delegate key policymaking tasks to employees with policy preferences that are similar to their own. This loss of policy influence creates incentives for policy-motivated civil servants to exit public service or, if they remain, to reduce their level of effort. The cumulative effects of increased turnover and reduced effort acquiring and applying expertise are less policy expertise in federal agencies and less effective public policy.

Three testable hypotheses follow from the discussion above. First, careerists with pref-

[3] See Golden (2000, Ch. 2) for a broader discussion of options.

[4] An important factor in this decision is the careerists' time horizon. Career civil servants may have a long-term view of policymaking and respond to agency politicization by waiting out appointees, which may limit the effect of politicization on turnover.

[5] Loss of policy expertise via exit is less concerning if it can be replaced through contracting or hiring new employees. While general expertise may be available in the labor market, a new hire must expend effort and time to learn about the effects of a specific policy proposal by collecting and analyzing data or talking with knowledgeable outside parties (see Stephenson 2007, p. 470, for elaboration of this point).

erences that diverge from appointees are less likely to be delegated key policymaking tasks and be included in policymaking decisions by appointees. This yields the following hypothesis:

H_1: Career civil servants should perceive that senior civil servants have less policy influence relative to appointees as preference divergence between themselves and appointees in their agency increases.

Politicization, defined as concentrating policy influence among political appointees, reduces the value of public service for careerists. Therefore, greater politicization should make careerists more likely to exit the agency and less likely to exert effort to acquire and apply policy expertise. This yields two additional hypotheses:

H_2: Career civil servants should be more likely to express intent to exit the agency as they perceive their agency to be more politicized.

H_3: Career civil servants' level of effort investing in and applying policy expertise should decrease as they perceive their agency to be more politicized.

3.2 Data, Variables, and Methods

The hypotheses above require measures of federal civil servants' intent to exit their agency, their effort exerted, perceived politicization, and policy preferences. I use an original survey of senior appointed and career civil servants who work across the executive branch, including the 15 executive departments, 66 independent agencies, and seven agencies in the Executive Office of the President, to measure each concept and to address potential threats to statistical inference.

The survey was in the field from August 14, 2014 to December 15, 2014. The response rate was 24 percent (3,551 of 14,698). The response rate among appointees was 18 percent (429 of 2,444) compared to 25 percent among careerists (3,122 of 12,254). I limit the sample to career civil servants. The questions about hours worked per week, frequency of investment in policy expertise, whether the respondent has been approached about a job, and agency-specific expertise were asked of a random half-sample (N = 1,465 in the

random half-sample). Additional description of the survey design is provided in Appendix C.

Survey data is particularly well suited to the questions at hand. Individuals' perceptions of their work environment are precisely the beliefs that they would use when evaluating their job prospects, deciding how much effort to exert, and whether to remain in public service. Nonetheless, social desireability bias and survey selection bias are concerns with survey data. Social desireability bias may cause respondents to overstate their investment frequency and understate their desire to leave their agency because they believe such responses will reflect poorly on themselves and their agency. However, these biases would make it more difficult for me to find a positive association between politicization and intent to exit and a negative association between politicization and frequency of investment. Selection bias would occur if respondents in politicized agencies are more likely to respond to the survey causing the sample to perceive more politicization than the population. In terms of partisanship, this type of selection would cause Republicans to be more likely to respond. In Section C.12 of the Appendix, I provide evidence that, while Democrats may be slightly more likely to respond than Republicans, the distribution of partisanship among respondents is not materially different from the target population.

3.2.1 Measuring Politicization

I define agency politicization as the concentration of policy influence among political appointees in an agency. To measure politicization, respondents were asked about their perceptions of the policy influence of "senior civil servants" and "political appointees" in their agency. Response options were "A great deal," "A good bit," "Some", "Little," "None," and "Don't know." I operationalize agency politicization as the difference between the influence of appointees and the influence of senior civil servants, which ranges from -4 (maximum careerist influence) to 4 (maximum appointee influence). Most observations are between 0 and 2, indicating that appointees generally have moderately more influence than

career civil servants. (Sections C.2 and C.3 of the Appendix provide question screenshots and plots of the distributions of key variables.)

This measure of agency politicization captures the loss of policy influence by career civil servants. Therefore, greater politicization should be associated with a lower value of employment derived from policy influence. This type of politicization should most affect those employees that value policy influence highly.[6] When asked about the importance of certain job attributes, 90% of respondents reported that "[o]pportunities to influence public policies that are important to me" were "somewhat important," "important," or "very important" with 75% reporting "important" or "very important." Given that almost all of the respondents value policy influence highly, the value they derive from public service should be affected by the loss of policy influence due to agency politicization. In other words, the respondents are generally policy-motivated.

3.2.2 Measuring Intent to Exit, Effort, and Investment

Civil servants' intent to exit was measured by asking: "How likely is it that you will leave [your agency] in the next 12 months?" Responses were "Very likely," "Likely," "Unlikely," "Very unlikely," and "Not sure." Of course, not everyone that expresses an intent to exit will leave; however, expressing an intent to exit should be associated with actual exit. Most respondents (73%) report that they are "unlikely" or "very unlikely" to leave the agency within one year.

General effort, which includes investing in and applying policy expertise, was measured by asking: "How many hours per week do you USUALLY work at your job at [your agency]?" Possible responses were any integer between 20 and 99, as well as "Fewer than 20" and "More than 99."[7] This is an admittedly rough measure of effort. First, a reduction

[6] I do not find that the effect of politicization is conditional on valuing policy influence, perhaps because of limited variation how much respondents value policy influence. See Section C.15 of the Appendix.

[7] Respondents to the paper version of the survey wrote their answers rather than selecting an option from a drop-down menu. Responses to the paper survey that provided a range of hours, e.g., 40-50, were coded by taking the midpoint and rounding to the nearest integer.

in effort does not necessarily lead to fewer hours worked per week - it may manifest instead in reduced effort during working hours. Second, there is likely a lower limit on hours worked per week, say 40 hours per week for most respondents, that sets the lower bound on how few hours someone can work per week and retain their job. However, most respondents work more than 40 hours per week, and those putting forth more effort likely work considerably more than 40 hours per week. If the respondent is given less work because she is being excluded from key projects or she reduces her effort, she should work fewer hours per week.

I define expertise investment as acquiring information that can be used to better predict policy outcomes (this follows the definition of expertise invesment in Gailmard and Patty 2013, p. 32). Respondents were asked: "Since joining [your agency] how often do you do each of the following in a typical calendar year?" They where provided a list of tasks that can build policy expertise, namely reading professional or trade journals, attending seminars or training related to the policy jurisdiction of their agency, discussing policy with outside experts, attending industry or trade conferences related to the policy jurisdiction of their agency, consulting subject matter experts at state or international agencies, and conducting or reading academic research related to the policy jurisdiction of their agency. The possible responses where "Never," "Rarely," "Few times a year," "Monthly," "Weekly," "Daily," or "Don't know."[8]

3.2.3 Measuring Preference Divergence

I measure individual ideology by asking respondents for their positions on 11 measures voted on by the 113^{th} Congress.[9] I combine these "votes" with the roll call matrix from the relevant Congress, using six final passage and conference votes to "bridge" the chambers

[8] I omitted 47 respondents who reported they attend seminars or training or that they attend industry or trade conferences weekly or daily from the sample because attending training or conferences with that frequency does not seem feasible.

[9] See Section C.6 in the Appendix for details of the estimation of ideal points.

of Congress. I then use this matrix to estimate ideal points for all members of Congress, President Obama, and senior federal executives on the same scale (this technique follows Clinton et al. 2012). Preference divergence is operationalized as the absolute difference in the ideal point of each career civil servant and the average ideal point of political appointees that work in the same agency and, for agencies in an executive department, appointees that are in the agency's supervisory hierarchy. The hierarchy includes appointees in the relevant Office of the Secretary (or the Office of the Attorney General for employees of the Department of Justice) and appointees in agencies that are above the agency in the organizational hierarchy.

Formally, consider all career respondents selecting agency A as their workplace. Let i index careerists and j index appointees. Then *divergence* for the i^{th} careerist selecting agency A as her workplace is: $|(\sum_{j=1}^{n_J} \frac{ideal\ point_j}{n_J}) - ideal\ point_i|$, where n_J is the number of appointee respondents as defined above for agency A. Preference divergence is a continuous measure that ranges from 0.00 (indicating no preference divergence) to 3.57 (the maximum preference divergence observed), with most observations falling between zero and two.[10]

3.2.4 Control Variables

Civil servants career decisions are determined by factors other than politicization. Therefore, I include a set of control variables to account for other determinants. The literature on civil servant motivation accepts civil servants are motivated by salary and generally focuses on two types of employees: those that care about both salary and policy outcomes and those that care only about salary (Brehm and Gates 1999; Carpenter 2001; Downs 1967; Gail-

[10]This measure relies on two assumptions. First, I assume this general measure of ideology is sufficiently correlated with policy preferences in the policy jurisdictions of each agency to measure relevant preference divergence. If this correlation is not sufficiently high, then I should not find any association between preference divergence and perceived politicization. Second, I assume the average ideology of responding appointees is representative of the ideology of the appointees managing career respondents. In Section C.14.3 of the Appendix, I show that results are robust to using a measure of preference divergence that better captures preferences relevant to each agencys' policy domain. This measure is only available for a subset of respondents.

mard and Patty 2007; Perry and Wise 1990; Perry 1996). Of course, the career decisions of civil servants that care only about salary will be unaffected by losing policy influence. Furthermore, civil servants may invest in policy expertise to earn a higher salary through merit-based raises, promotion within government (Teodoro 2009), or exit to the private sector. Pecuniary incentives may be sufficient to motivate civil servants who care about policy to invest in policy expertise regardless of their current or expected policy influence. Additionally, there are other reasons to engage in the investment behaviors above other than building policy expertise. For example, a civil servant may attend a trade conference or contact an outside expert to network in an effort to move to the private sector.

To measure intrinsic motivation, respondents were asked the following: "We'd like to understand what you value about your job. How important are each of the following job attributes to you?" The attributes included "[o]pportunies to influence public policies that are important to me," "[o]pportunities to develop skills to move to a job in the private sector," and "[o]pportunities to develop professional skills to move to a higher job in the federal government," and "[s]alary and benefits." Response options were "Not at all important," "Not too important," "Somewhat important," "Important," and "Very important." I control for how much civil servants value opportunities for promotion within the government or exiting the private sector to account for these alternative motivations. I also control for how much respondents' value policy influence (i.e., policy-motivation). Securing a promotion within government likely increases both salary and policy influence while exiting to the private sector likely eliminates opportunities to influence public policy but may increase salary. Results are robust to controlling for how much civil servants' value salary and benefits rather than controlling for how much they value promotions.[11]

The marketability of civil servants' skills determines how easily they can find outside employment, and the more valuable skills are the more likely a civil servant is to invest in them. Therefore, I control for marketability of skills using three variables.[12] First,

[11] See Section C.7 of the Appendix.

[12] See Section 13.2 for models that include fixed effects for agency mission, which provide an additional

respondents were asked,"Have you been approached about a job outside [your agency] since July 1, 2013?" Civil servants that have been actively sought for other positions clearly have viable outside options. Second, members of the Senior Executive Service should have more outside options because the SES was designed to provide a core group of government managers that can move between agencies. The management skills these employees learn should be marketable. Third, civil servants whose positions require expertise that is only useful if employed by the agency, i.e., agency-specific expertise, should have fewer outside options (Bertelli and Lewis 2013; Gailmard and Patty 2007). Additionally, sources of expertise external to the agency, such as outside policy experts, should be less useful for building the expertise a job requires if that expertise is agency-specific.

The measurement strategy for agency-specific expertise centered on asking respondents about expertise that can only be acquired at their agency, because such expertise is not likely to be valued elsewhere. Nonetheless, to account for the possibility that the expertise that can only be acquired by working at an agency could be valued by other employers, respondents were asked what percentage of the expertise that could only be acquired at their agency is valued by other employers, including the private, public, and non-profit sectors to account for the possibility that each sector values different skill sets. Then agency-specific expertise is defined as the percentage of expertise that can only be acquired at an agency that is *not* valued by another employer.[13] Formally, let x_i be the percentage of expertise that the i^{th} respondent says can only be acquired by working at her agency. Let y_{ij} be the i^{th} respondent's assessment of what percentage of that expertise is valued by the j^{th} employment sector. Then agency-specific expertise is operationalized as: $x_i - x_i \times \max_j y_{ij}$.

Preference divergence may have a direct effect on civil servants' career decisions in

control for the market value of skills.

[13]The measure of agency-specific expertise investment may be an underestimate. Suppose 80% of a respondent's skills can only be learned on-the-job. Also, suppose that government contractors value 30% of those skills and non-profits value 20%. Then the respondent's agency-specific expertise will be $.80 - .80(.30) = .56$. This assumes that the 20% valued by non-profits is included in the 30% valued by government contractors. If this is not the case, then agency-specific expertise will be underestimated because more than 30% of the skills are valued by other employers.

addition to its indirect effect via politicization. A civil servant who does not share the preferences of appointees leading her agency may be more likely to exit, exert less effort, or invest less in policy expertise because she does not like how appointees are managing the agency (e.g., what policies appointees choose to pursue) regardless of whether she has policy influence or not. Therefore, I control for preference divergence in models estimating the effect of politicization on civil servants' career decisions.

Civil servants that have served in the agency during different periods of time should have different perceptions of politicization, and employees that have worked in the agency longer are closer to retirement and more likely to exit the agency. Therefore, I control for tenure in the agency and, in models of intent to exit, self-reported retirement eligibility. Additionally, the question about expertise investment asks about behavior since joining the agency, which could cause responses to vary systematically based on tenure. Lastly, employee perceptions of politicization should vary with the frequency of contact with political appointees. Therefore, I control for the respondent's self-reported frequency of contact with appointees.

3.3 Data Analysis

I estimate ordered probit models when the dependent variable is an ordered categorical variable (e.g., perceived politicization, likelihood of exit, and investment frequency) to account for the possibility of unequal intervals between response categories. For example, the response categories for investment activities cover various frequencies making it unlikely that the difference between response categories is uniform (i.e., the difference between "Rarely" and a "Few times a year" is likely not the same as the difference between "Monthly" and "Weekly"). I estimate an Ordinary Least Squares Model when the dependent variable is hours typically worked per week or a factor score. The unit of analysis is an individual nested in an agency; therefore, I cluster the standard errors on agencies to account for covariance between politicization and agency resulting in model error that is

correlated with agency.[14] Overall, I find that greater preference divergence is associated with increased likelihood that civil servants perceive their agency is politicized (Table 1). I also find that civil servants who perceive that their agency is politicized are more likely to express intent to exit their agency within a year and less likely to report that they attend training or seminars or that they discuss policy with outside experts frequently (Table 2). I do not find that politicization reduces hours worked per week or the frequency with which civil servants engage in other investment activities when analyzing the full sample. I discuss possible explanations for why I do not find a relationship below, including variation in investment behavior due to position and agency mission because both may influence how useful a specific task is for building policy expertise.

Models 1 and 2 in Table 3.1 estimate the effect of preference divergence on perceived politicization.[15] The coefficient on divergence is positive and the estimate is sufficiently precise to be distinguished from zero with a high degree of confidence in Model 1. The coefficient on divergence squared in Model 2 is also positive and statistically distinguishable from zero, which indicates that as preference divergence increases, the likelihood that civil servants perceive their agency is politicized increases at an increasing rate.[16] Consistent

[14]Rather than using agency fixed effects, I prefer to control for variables directly when possible (e.g, the marketability of skills varies at the agency and individual level, and I think the controls I include effectively control for both). In Section 14.2, I discuss concerns about omitted variable bias related to unobserved agency characteristics and show that results are robust to including agency fixed effects. Importantly, using agency fixed effects in these models is problematic because key variables, e.g., politicization, vary at the agency- and individual-level. Therefore, agency fixed effects absorb inter-agency variation in politicization, which is only desirable if fixed effects are necessary to prevent omitted variable bias. The fact that results are robust to including agency fixed effects suggests there is important intra-agency variation in civil servants' perceptions of their workplace and responses to those perceptions. Additionally, there are often few respondents per agency, which creates concerns about overfitting the model when using agency fixed effects. This is one reason to prefer the agency mission fixed effects in Section C.13.2 of the Appendix if they address the specific omitted variable concern. See the Appendix for details.

[15]See Appendix Section C.5 for additional discussion of concept measurement for preference divergence, politicization, and why an individual civil servant's policy influence should be correlated with her perceptions of civil servants' policy influence in general.

[16]The non-linear effect of preference divergence on perceived politicization in Model 2 is consistent with the existence of a delegation cutoff threshold, as predicted by formal models of delegation, beyond which appointees will exclude civil servants whose preferences diverge too greatly from their own from policymaking. Civil servants with slight preference divergence (divergence of one) are somewhat less likely to be included in policymaking (i.e., these civil servants are likely in the delegation set) while civil servants with extreme preference divergence (divergence of 2 or greater) are much less likely to be included in policymaking (i.e., they are less likely to be in the delegation set). Given that delegation cutoff thresholds vary across appointees,

Table 3.1: Models of Politicization

Model	(1)	(2)
Dependent Variable	Pol.	Pol.
Preference Divergence	0.14^{***}	-0.03
	(0.04)	(0.10)
Divergence^2		0.07^{*}
		(0.04)
SES	0.13^{**}	0.13^{**}
	(0.06)	(0.07)
Agency Tenure	0.00	0.00
	(0.002)	(0.002)
Frequency of Contact	0.20^{***}	0.20^{***}
with Appointees	(0.03)	(0.03)
τ_1	-2.20^{***}	-2.27^{***}
	(0.17)	(0.17)
τ_2	-1.53^{***}	-1.60^{***}
	(0.12)	(0.12)
τ_3	-1.00^{***}	-1.06^{***}
	(0.11)	(0.11)
τ_4	-0.32^{***}	-0.38^{***}
	(0.09)	(0.10)
τ_5	0.84^{***}	0.77^{***}
	(0.10)	(0.10)
τ_6	1.74^{***}	1.68^{***}
	(0.10)	(0.11)
τ_7	2.54^{***}	2.48^{***}
	(0.12)	(0.13)
τ_8	3.46^{***}	3.40^{***}
	(0.20)	(0.21)
N	1,630	1,630
N Clusters	173	173
Pct. Correctly Predicted	38%	38%
Wald χ^2	89.94	92.27

Robust standard errors clustered on agencies in parentheses. * significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test; χ^2 tests significant at $p < .01$.
Models 1 and 2 are ordered probit models.

the association between preference divergence and perceived politicization would, on average, increase at an increasing rate.

Table 3.2: Models of Intent to Exit, Effort, and Expertise Investment

Model	(3)	(4)	(5)	(6)	(7)	(8)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization	0.07**	0.02	−0.09**	0.00	−0.09***	−0.05**
	(0.03)	(0.23)	(0.04)	(0.04)	(0.03)	(0.02)
Preference Divergence	−0.02	0.86	0.06	0.05	−0.11**	0.02
	(0.06)	(0.58)	(0.05)	(0.08)	(0.05)	(0.04)
Value Policy Influence	−0.06	0.30	0.32***	0.18***	0.20***	0.20***
	(0.05)	(0.37)	(0.04)	(0.04)	(0.04)	(0.03)
Value Pvt. Sector Job	0.16***	0.41	0.02	0.05	0.04	0.03
	(0.04)	(0.30)	(0.04)	(0.04)	(0.04)	(0.02)
Value Gov't Promotion	−0.01	−0.07	−0.01	0.05	0.01	0.01
	(0.04)	(0.28)	(0.03)	(0.04)	(0.04)	(0.02)
Approached about a Job	0.31***	3.45***	0.12	0.13*	0.05	0.10*
	(0.09)	(0.72)	(0.08)	(0.08)	(0.08)	(0.05)
Agency-Specific Expertise	0.23	−3.29	−0.49	−0.01	−0.01	−0.21
	(0.36)	(2.16)	(0.34)	(0.33)	(0.34)	(0.22)
SES	0.14	2.86***	0.04	−0.12	0.15	−0.01
	(0.10)	(0.66)	(0.08)	(0.09)	(0.09)	(0.06)
Agency Tenure	−0.01**	0.09***	0.00	0.00	0.00	0.00
	(0.005)	(0.03)	(0.003)	(0.004)	(0.004)	(0.002)
Frequency of Contact	0.01	0.74***	0.18***	0.09**	−0.02	0.09***
with Appointees	(0.04)	(0.25)	(0.03)	(0.04)	(0.03)	(0.02)
Eligible to Retire	0.81***					
	(0.09)					
τ_1 (3, 5-7) & Con. (4, 8)	0.05	42.69***	−0.57***	−0.27	−0.97***	−0.86***
	(0.24)	(1.54)	(0.21)	(0.21)	(0.21)	(0.14)
τ_2	1.09***		0.57***	0.63***	0.34	
	(0.24)		(0.20)	(0.21)	(0.21)	
τ_3	1.63***		1.51***	1.38***	1.94***	
	(0.24)		(0.19)	(0.22)	(0.22)	
τ_4			2.23***	1.97***		
			(0.18)	(0.22)		
τ_5			3.24***	2.81***		
			(0.19)	(0.23)		
N	710	753	765	765	765	763
N Clusters	159	160	161	160	161	160
R^2		0.13				0.15
Pct. Correctly Predicted	45%		35%	29%	52%	
Wald χ^2	110.73		193.29	49.49	47.29	

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, ** $p < .05$, *** $p < .01$ in a two-sided test.
χ^2 tests significant at $p < .01$.
Models 3 and 5 - 7 are ordered probit models. Models 4 and 8 are OLS models.

with H_1, senior civil servants are likely to perceive that senior civil servants and appointees have similar levels of policy influence at lower levels of preference divergence and, as preference divergence increases, civil servants are more likely to perceive that their agency is

politicized.[17]

The upper left quadrant of Figure 3.1 shows the predicted probability from Model 1 that the typical[18] career civil servant perceives their agency is politicized, defined as politicization of two or greater, as preference divergence increases. (For example, politicization of two is a response that appointees have "a great deal" of policy influence and senior civil servants have "some" or appointees have "a good bit" and senior civil servants have "little.") The predicted probability that a civil servant perceives that her agency is politicized increases 13 percentage points, or nearly doubles, as preference divergence increases from zero to three. The change in predicted probability for each unit increase in divergence is statistically significant at the 95% confidence level.

The relationship between preference divergence and perceived politicization is important because it provides evidence for the partisan foundation of the temporal dynamics of politicization and identifies which civil servants and agencies should be the targets of politicization across presidential administrations (Lewis 2008). The preference divergence of Republican civil servants is larger, on average, than Democratic civil servants' during a Democratic administration. The relationship is the opposite during a Republican administration (see Section C.11 of the Appendix). Therefore, conservative civil servants are more likely to perceive politicization during Democratic administrations while liberal civil servants are more likely to perceive politicization during Republican administrations. Having identified who is more likely to be subject to politicization, I now turn to the effects of politicization on civil servants career decisions.

Model 3 in Table 3.2 estimates the effect of politicization on a civil servants' intent to

[17]Some agencies are designed to be insulated from political control by the president (Lewis 2003; Selin 2015). Results in Table 3.1 are robust to including agency fixed effects to account for any systematic time-invariant agency characteristics, including agency structure. See Section C.14.2 of the Appendix.

[18]A "typical" respondent perceives no politicization, has preference divergence of 0.87, has not been approached about a job, has expertise that is 13.72% agency-specific, is not a member of the SES, has agency tenure of 17.32 years, has daily contact with appointees, and is not eligible to retire. For the typical respondent, policy influence is very important, promotion within the federal government is important, and moving to the private sector is not too important. Divergence, agency-specific expertise, and agency tenure are held at their means. Modal values are used for all other variables.

exit. Consistent with H_2, the coefficient on politicization is positive and estimated with sufficient precision to distinguish it from zero with a high degree of confidence. The upper right quadrant in Figure 3.1 shows the predicted probability that a typical respondent says she is "likely" or "very likely" to exit her agency within one year as politicization increases. Overall, increasing politicization from zero to three increases the predicted probability that a civil servant expresses intent to exit from 9% to 12%, an increase of one-third. The change in predicted probability for each unit increase in politicization is statistically significant at the 90% confidence level.

Turning to Model 4 (an Ordinary Least Squares model), there is little evidence that politicization reduces effort as measured by hours worked per week.[19] The estimate of the coefficient on politicization in Model 4 is not sufficiently precise to be distinguished from zero with much confidence. This may be because hours worked is a rough measure of effort as discussed above. Overall, this model provides little support for hypothesis H_3.

The questions about specific tasks associated with investment in policy expertise measure effort more precisely than hours worked per week and provide an additional test of hypothesis H_3. Table 3.2 contains models of expertise investment in activities that should be relevant for many civil servants, a claim that I discuss further below. The coefficient on politicization is negative and distinguishable from zero with a high degree of confidence in two of the three models.[20] Consistent with H_3, the more politicized civil servants perceived their agency to be, the less likely they are to attend training or seminars (Model 7) and the less likely they are to consult outside policy experts (Model 5). Lastly, the dependent variable in Model 8 is a factor score based on the investment activities in Models 5, 6, and 7.[21] This model shows that politicization is negatively associated with this aggregate measure

[19] This model is not sensitive to excluding extreme responses of less than 40 hours and more than 80 hours.

[20] A particular concern related to statistical inference is that presidents and appointees may concentrate policy influence among appointees because of agency dysfunction. See Section C.14.2 of the Appendix for additional discussion.

[21] The factor loadings from principal components factor analysis suggests a singe dimension and loadings range from 0.43 to 0.64. The Eigen value is 0.95. Given the diversity of activities covered, a single underlying factor suggests that the underlying dimension is investment in policy expertise.

of latent expertise investment.

The bottom quadrants of Figure 3.1 plot the predicted probabilities that a typical senior civil servant reports that they rarely or never discuss policy with outside experts (left quadrant) and that they rarely or never attend training or seminars (right quadrant). Increasing politicization from zero to three increases the predicted probability that a civil servant reports rarely or discussing policy with outside policy experts from 0.9 to 0.14, an increase of over one-half. The same increase in politicization increases the predicted probability that a civil servant reports rarely or never attending training from 0.33 to 0.44, an increase of over one-third. The change in predicted probability for each unit increase politicization is statistically significant at the 95% confidence level.

Attending training may require the approval of superiors in the agency, which raises the question of whether the mechanism leading to less frequent investment is appointees preventing careerists from attending training or a reduction in effort by careerists. My data cannot differentiate between these mechanisms and both may contribute to the observed association. The similar effect sizes for investment behaviors, such as discussion with outside experts, that are less likely to require approval suggests that reduction of effort is at least partly responsible. Importantly, either mechanism leads to less frequent investment in policy expertise.

I do not find that higher levels of perceived politicization are negatively associated with reduced frequency of reading professional or trade journals, attending industry or trade conferences, consulting subject matter experts at state or international agencies, or conducting or reading academic research when analyzing the full sample. There are at least two potential explanations for this finding. First, if an investment activity is low cost, its benefits may continue to exceed its costs for most civil servants despite the negative effect of politicization. Reading professional and trade journals is a particularly low cost activity, and 71% of civil servants report doing it at least monthly.

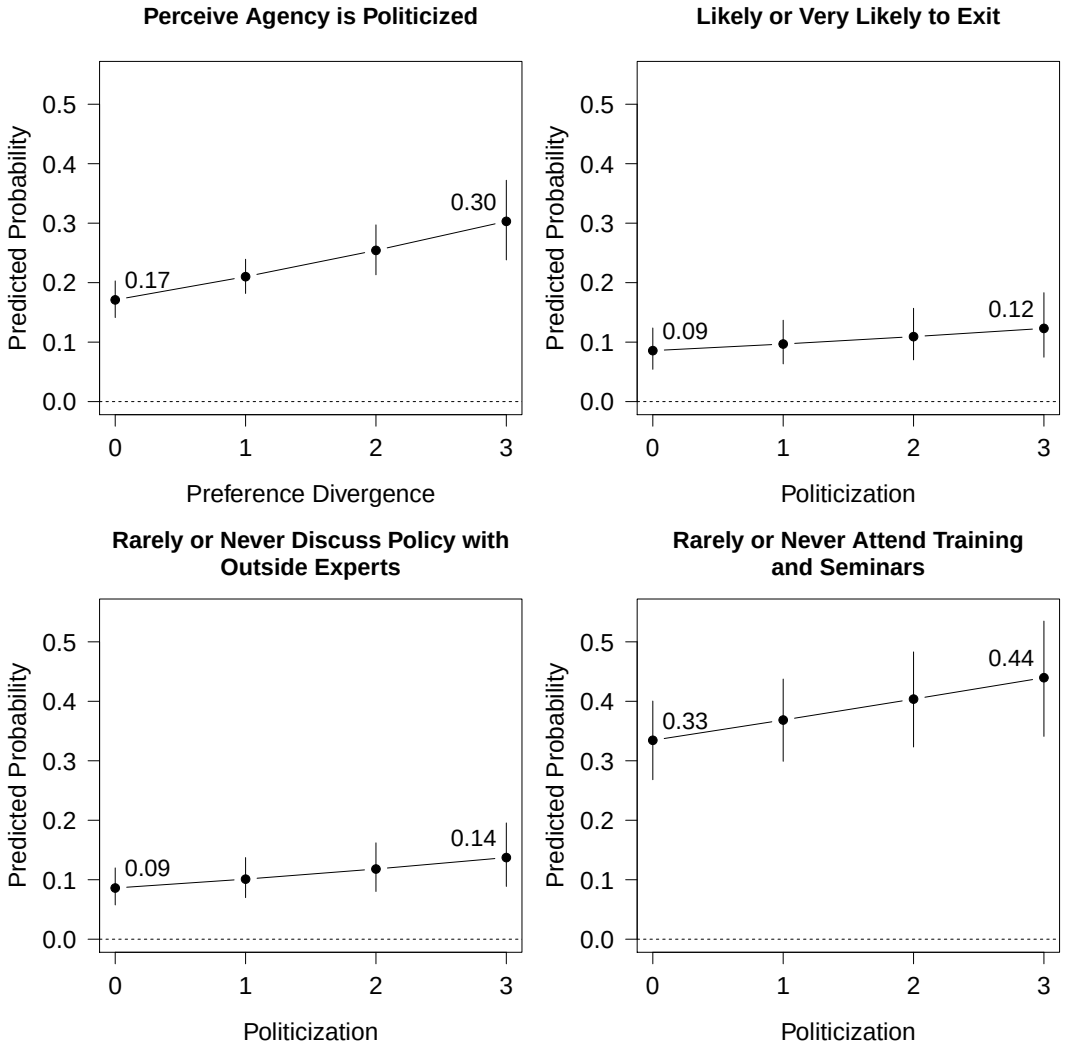
Second, an investment activity is not necessarily useful for every civil servant. For

example, civil servants working in an agency that does not regulate an industry may not attend industry or trade conferences, and there may not be academic research relevant to each civil servants' job. Isolating positions or agencies for which a task is relevant for building expertise is a challenge to measuring expertise investment across agencies. To address this, I examine whether civil servants' investment frequencies vary by position or agency mission. More frequent investment suggests that a task is useful for building expertise. I then examine whether politicization reduces investment frequency in cases where civil servants invest more frequently (see Section C.13 of the Appendix). I find, for example, that civil servants involved in notice-and-comment rulemaking report attending industry and trade conferences more often than other civil servants, and that rulemakers who perceive their agency is politicized attend industry and trade conferences less often. The same is true for consulting subject matter experts. Similarly, I estimate the effect of politicization conditional on whether civil servants working in agencies with a given mission complete a task more frequently than average, and I find find the effect of increasing politicization on the frequency with which civil servants read or conduct academic research is negative conditional on agency mission. Similar to the analysis of rulemakers, the effect of politicization on attending industry or trade conferences is also negative conditional on mission. While the evidence is mixed overall, this analysis demonstrates that isolating observations for which expertise should be more useful can reveal relationships between politicization and investment behavior that are not evident in the pooled analysis. Scholars should be mindful of this variation when designing future research on expertise investment by civil servants across agencies.

3.4 Discussion

Analyzing data from a survey of over 3,500 federal civil servants, I find that greater preference divergence between appointees and senior civil servants is associated with increased likelihood that senior civil servants perceive that appointees have more policy influ-

Figure 3.1: Predicted Probabilities of Politicization, Intent to Exit, and Expertise Investment



Note: Lines denote 95% confidence intervals. Confidence intervals for the predicted probabilities are bootstrapped (N=10,000). Predicted probabilities are based on a typical respondent (see footnote 18 for a definition). The upper left quadrant plots the predicted probability a respondent perceives politicization of 2 or greater.

ence than careerists. This finding is consistent with appointees being less likely to delegate key policymaking tasks to careerists that do not share the appointees' policy views and with these careerists being excluded from policymaking. This loss of policy influence alters careerist incentives in ways that reduce the stock of expertise in federal agencies. Senior civil

servants who perceive their agency is politicized (i.e., senior civil servants have less policy influence than appointees) are more likely to express intent to exit the agency within one year. Furthermore, civil servants who perceive their agency is politicized are less likely to engage behaviors that build policy expertise, namely attending training or seminars or consulting external policy experts. In total, politicization reduces expertise by increasing turnover and reducing investment among careerists that remain in the federal government.

The estimates of the effect of politicization on civil servants' intent to exit and frequency of expertise investment are realistic. Changing jobs is a major decision that affects multiple aspects of civil servants' lives. Therefore, it is not surprising that most civil servants report they are unlikely to exit their agency at all levels of politicization. Civil servants may prefer to stay and wait for the next election which brings the possibility of a president who shares their policy views. Similarly, the effect sizes of politicization on investment frequency are realistic because it is unlikely that dissatisfied career civil servants can exert no effort investing in and applying expertise and retain their job. So, even dissatisfied careerists are likely to report some investment.

The effect of politicization on exit intention is also likely to be underestimated relative to effects temporally nearer to a change in party control of the White House. The survey was in the field six years into the Obama presidency. Employees most affected by politicization are likely to have exited before the survey was administered. Recent research uses data on millions of career civil servants provided by the Office of Personnel Management to analyze the effect of elections on civil servants' career decisions between 1988 and 2011 (Bolton, de Figueiredo, and Lewis 2016). Consistent with my findings that divergent policy views between appointees and careerists leads to politicization which leads to exit, this work finds that senior career civil servants in agencies with policy views that diverge from the president are more likely to exit, particularly at the start of presidential terms.

Prior scholarship, both theoretical (e.g., Gailmard and Patty 2007) and empirical (e.g., Lewis 2008), suggested that appointees exclude civil servants who do not share the pres-

ident's policy views from policymaking, and that this loss of influence should lead to increased turnover and less investment in expertise. This paper provides some of the first systematic, micro-level evidence demonstrating these relationships exist. Survey data are particularly well suited to examine the mechanisms by which politicization affects agency policy expertise because they are able to measure concepts systematically across agencies that are difficult to measure with available objective data (e.g., frequency of expertise investment, perceptions of policy influence). Furthermore, civil servants' perceptions of their work environment are precisely the beliefs that affect their decisions to leave public service or, if they remain, whether to acquire and apply expertise.

Despite these strengths, a single cross-sectional data set is unable to establish the temporal order of events described above: presidents choose an appointee, the appointee excludes careerists with divergent preferences from policymaking, and the excluded careerists then exit the agency or reduce their effort. The ideal research design would use panel data to examine civil servants career decisions across time. While I do not have a large panel data set,[22] I replicate the relationships between preference divergence and perceived politicization as well as perceived politicization and intent to exit using similar data from the adminstration of President George W. Bush in Section C.10 of the Appendix. Most importantly, I also show that Democrats have greater preference divergence and are more likely to perceive that their agency is politicized than Republicans, on average, during the Bush Administration. The converse is true during the Obama Administration (see Section C.11 of the Appendix). The changes in the relationships between partisanship and both preference divergence and politicization concurrent with the change in party of the president clearly demonstrate that this temporal order drives politicization and its effects.

Another concern is that appointees, like presidents, may face a competence-loyalty tradeoff (e.g., Edwards III 2001; Lewis 2008). Appointees may be willing to sacrifice some preference congruence to gain access to a civil servant's **existing** policy expertise,

[22] See Section C.11 of the Appendix for analysis of a small panel data set.

i.e., delegate policymaking to an expert civil servant that does not share their policy preferences rather than an inexpert civil servant with similar preferences (Bendor and Meirowitz 2004). The potential for reverse causality between politicization and expertise investment is something my data cannot address. That said, the correlations I find are consistent with previous theoretical and empirical work on the temporal ordering of the effects of politicization on expertise (e.g., Andersen and Moynihan 2016; Gailmard and Patty 2007; Lewis 2008).

3.5 Conclusion

Federal civil servants need policy expertise to formulate and implement effective public policy. To control agency policymaking, presidents often concentrate policy influence among employees, often political appointees, that share the president's policy preferences. These political appointees prefer to delegate key policymaking tasks to civil servants that share their policy views and to exclude from policymaking those civil servants who do not. Loss of policy influence reduces the value policy-motivated civil servants derive from public service, which increases their incentives to exit and decreases their incentives to invest in and apply policy expertise.

Aggregating the estimated effect of politicization on turnover across the executive branch demonstrates that a small increase in the probability of exit within one year, applied across hundreds of agencies and hundreds of thousands of employees that perceive higher levels of politicization over the four or eight years of a presidency, can result in a large cumulative loss of expertise due to exit. More concretely, there were 7,079 U.S.-based career members of the SES as of December 2014, and about 49% of career SES respondents in the survey report politicization of one or greater.[23] Using Model 3, the predicted probability that a career member of the SES expresses intent to exit increases by 1.3 percentage points as politicization increases from zero to one.[24] Assuming all individuals that express

[23] United States Office of Personnel Management, FedScope

[24] Based on a career member of the SES with divergence of 0.86, that has not been approached about a

intent to exit eventually do so, this increase in politicization translates into an additional 45 members of the SES that depart each year and 180 individuals that depart over a four-year presidential term.[25]

The marginal effects of politicization on the frequency of expertise investment are also concerning when applied across the executive branch. For example, increasing politicization from zero to one is estimated to result in an additional 2 civil servants per 100 who rarely or never discuss policy with outside experts and an addition 3 per 100 who rarely or never attend training or seminars. An increase in politicization from zero to three is estimated to result in an additonal 5 civil servants per 100 who rarely or never discuss policy with outside experts less and an additional 11 civil servants per 100 who rarely or never attend training or seminars. Considering that approximately two million non-postal civilian civil servants work in the executive branch, these small percentages could translate to thousands of people who invest in expertise less frequently.

Increased turnover and reduced expertise investment are likely to be greater at specific agencies because civil servants in the same agency tend to have similar policy preferences, and civil servants who do not share the policy views of the president and the presidents' appointees are more likely to be subject to politicization. The loss of several senior agency managers or senior personnel in charge of major federal programs can be severe at the agency level. Similarly, the harmful effect of reduced expertise investment concentrated at the agency or program level could be significant.

Federal civil servants need policy expertise to develop effective policies. They tackle complex problems and the solutions they develop and implement affect the quality of millions of people's lives. If presidents and political appointees are not mindful of the harmful effects of politicization on policy expertise, then presidents and the public may find that

job, is not eligible to retire, has 18.67 years with the agency, and has daily contact with appointees. For the typical member of the SES, policy influence is very important, promotion within the federal government is important, and moving to the private sector is not too important.

[25]The calculation is 7,079 $\times$ 0.49 $\times$ 0.013 = 45.09. Of course, not all individuals that express intent to exit will in fact leave the agency. However, it is also true that respondents that perceive greater politicization will also have a greater predicted probability of exit.

federal agencies lack the expertise needed to solve the nation's policy problems.

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Appendix A

Appendix to Chapter 1

A.1 Change in Policy, Expected Policy, and Variance of Expected Policy as Insulation Increases

Given that A sets p equal to its ideal point in equilibrium, the derivative of p with respect to λ given the group in power is:

$$\frac{\partial p}{\partial \lambda} = \frac{\partial}{\partial \lambda}(1-\lambda)x_i + \lambda B = -x_i + B, i = \{1,2\}$$

Expected policy is:

$$E[p] = \theta[(1-\lambda)x_1 + \lambda B] + (1-\theta)[(1-\lambda)x_2 + \lambda B]$$

$$= (1-\lambda)[x_2 - \theta(x_2 - x_1)] + \lambda B$$

Derivative of expected policy with respect to λ given the agency is created:

$$\frac{\partial E[p(C = Yes, \lambda)]}{\partial \lambda} = \frac{\partial}{\partial \lambda}\theta[(1-\lambda)x_1 + \lambda B] + (1-\theta)[(1-\lambda)x_2 + \lambda B]$$

$$= \theta[-x_1 + B] + (1-\theta)[-x_2 + B]$$

$$= \theta(x_2 - x_1) - x_2 + B$$

Determine when the derivative of expected policy with respect to λ is decreasing in terms of B:

$$\theta(x_2 - x_1) - x_2 + B < 0 \rightarrow B < x_2 - \theta(x_2 - x_1)$$

Derivative of expected policy given no insulation with respect to x_2:

$$\frac{\partial E[p(C = Yes, \lambda = 0)]}{\partial x_2} = \frac{\partial}{\partial x_2} x_2 - \theta(x_2 - x_1) = 1 - \theta$$

Variance of policy if the agency is created is:

$$Var[p] = E[p^2] - (E[p])^2$$

$$= \theta[(1-\lambda)x_1 + \lambda B]^2 + (1-\theta)[(1-\lambda)x_2 + \lambda B]^2 - [(\theta x_1 + (1-\theta)x_2)(1-\lambda) + \lambda B]^2$$

$$= \theta(1-\theta)(x_1 - x_2)^2(1-\lambda)^2$$

Determine when the derivative of variance of policy with respect to λ is less than 0:

$$\frac{\partial Var[p]}{\partial \lambda} = -2\theta(1-\theta)(x_1 - x_2)^2(1-\lambda) < 0 \text{ if } \theta \in (0,1) \text{ and } \lambda \in [0,1)$$

A.2 Derivation of Optimal Insulation

Isolate λ in G_1's expected utility:

$$E[U_{G_1}] = -\theta[(1-\lambda)x_1 + B\lambda - x_1]^2 - (1-\theta)[(1-\lambda)x_2 + B\lambda - x_1]^2$$

$$= -\theta[\lambda(-x_1 + B)]^2 + (1-\theta)[x_2 - \lambda x_2 + B\lambda - x_1]^2$$

$$= -\theta\lambda^2(x_1 - B)^2 - (1-\theta)[x_2^2 + x_2^2\lambda^2 + B^2\lambda^2 + x_1^2$$

$$= -2x_2^2\lambda + 2x_2B\lambda - 2x_1x_2 - 2x_2B\lambda^2 + 2x_1x_2\lambda - 2x_1B\lambda]$$

$$= -\theta\lambda^2(x_1 - B)^2 - (1-\theta)[(\lambda^2(x_2 - B)^2 - 2\lambda(B - x_2)(x_1 - x_2) + (x_1 - x_2)^2]$$

$$= \lambda^2[-\theta(x_1 - B)^2 - (1-\theta)(x_2 - B)^2] + 2\lambda(1-\theta)(B - x_2)(x_1 - x_2) - (1-\theta)(x_1 - x_2)^2$$

A.2.1 Derivation of Optimal Insulation Unbounded

Take first order conditions of EU_1 with respect to λ:

$$\frac{\partial E[U_{G_1}]}{\partial \lambda} = 2\lambda[-\theta(x_1-B)^2-(1-\theta)(x_2-B)^2]+2(1-\theta)(B-x_2)(x_1-x_2)$$

$$2\lambda[-\theta(x_1-B)^2-(1-\theta)(x_2-B)^2]+2(1-\theta)(B-x_2)(x_1-x_2)=0$$

$$\rightarrow \lambda[-\theta(x_1-B)^2-(1-\theta)(x_2-B)^2] = -(1-\theta)(B-x_2)(x_1-x_2)$$

$$\rightarrow \lambda' = \frac{(1-\theta)(B-x_2)(x_1-x_2)}{\theta(x_1-B)^2+(1-\theta)(x_2-B)^2}$$

A.2.2 Derivation of Optimal Insulation Bounded

$G1$'s choice of insulation is required to lie on $[0,1]$. I next examine when $\lambda' \notin [0,1]$ by evaluating λ' over the range of B. The relevant properties of λ' are:

1. $\lim_{B\rightarrow x_2} \lambda' = 0$
2. If $B = x_1$ or $B = x_2 - \theta(x_2-x_1)$, then $\lambda' = 1$.
3. Given $x_1 < x_2$ and $\theta \in (0,1)$, λ' is increasing in B on the interval $[x_1, x_2 - \sqrt{\theta(x_1-x_2)^2})$.
4. Given $x_1 < x_2$ and $\theta \in (0,1)$, λ' is decreasing in B on the interval $(x_2 - \sqrt{\theta(x_1-x_2)^2}, x_2]$.
5. Given $\theta \in (0,1)$, $x_2 - \theta(x_2-x_1) \geq x_2 - \sqrt{\theta(x_1-x_2)^2}$.

Altogether this shows that $\lambda' = 1$ at $B = x_1$, $\lambda' > 1$ on $B \in (x_1, x_2 - \theta(x_2-x_1))$, and λ' decreases from 1 to 0 on $B \in [x_2 - \theta(x_2-x_1), x_2]$. If follows G_1's optimal insulation decision is:

$$\lambda^* = \begin{cases} 1 & \text{if } B \in [x_1, x_2-\theta(x_2-x_1)] \\ \frac{(1-\theta)(B-x_2)(x_1-x_2)}{\theta(x_1-B)^2+(1-\theta)(x_2-B)^2} & \text{if } B \in [x_2-\theta(x_2-x_1), x_2] \end{cases}$$

Property 1: The limit of λ' as B approaches x_2:

$$\lim_{B \to x_2} \lambda' = \frac{(1-\theta)(x_2-x_2)(x_1-x_2)}{\theta(x_1-x_2)^2+(1-\theta)(x_2-x_2)^2} = 0$$

Property 2: For what value of B does $\lambda' = 1$?

$$\frac{(1-\theta)(B-x_2)(x_1-x_2)}{\theta(x_1-B)^2+(1-\theta)(x_2-B)^2} = 1$$

$$\rightarrow (1-\theta)(B-x_2)(x_1-x_2) = \theta(x_1-B)^2+(1-\theta)(x_2-B)^2$$

$$\rightarrow -B^2+B[(1-\theta)(x_1-x_2)+2(1-\theta)x_2+2\theta x_1]-(1-\theta)(x_1-x_2)x_2-(1-\theta)x_2^2-\theta x_1^2 = 0$$

Applying the quadratic formula gives:

$$\lambda' = 1 \text{ if } B = x_1 \text{ or } B = x_2+\theta(x_1-x_2)$$

Properties 3 & 4: Derivative of λ' with respect to B:

$$\frac{\partial \lambda'}{\partial B} = \frac{(1-\theta)(x_1-x_2)[\theta(x_1-x_2)^2-(x_2-B)^2]}{[\theta(x_1-B)^2+(1-\theta)(x_2-B)^2]^2}$$

Given $x_1 < x_2$ and $\theta \in (0,1)$, this is negative iff:

$$(1-\theta)(x_1-x_2)[\theta(x_1-x_2)^2-(x_2-B)^2] < 0$$

$$\theta(x_1-x_2)^2 > (x_2-B)^2$$

$$\sqrt{\theta(x_1-x_2)^2} > \pm(x_2-B)$$

$$\rightarrow B < x_2+\sqrt{\theta(x_1-x_2)^2} \text{ and } B > x_2-\sqrt{\theta(x_1-x_2)^2}$$

$$\rightarrow B \in (x_2-\sqrt{\theta(x_1-x_2)^2}, x_2+\sqrt{\theta(x_1-x_2)^2})$$

$$\rightarrow B \in (x_2-\sqrt{\theta(x_1-x_2)^2}, x_2] \text{ given } B \leq x_2$$

Property 5: Determine when $x_2 - \theta(x_2 - x_1)$ is greater than or equal to $x_2 - \sqrt{\theta(x_1 - x_2)^2}$:

$$x_2 - \theta(x_2 - x_1) \geq x_2 - \sqrt{\theta(x_1 - x_2)^2}$$

$$\rightarrow -\theta(x_2 - x_1) \geq -\sqrt{\theta}(x_2 - x_1) \text{ given } x_1 < x_2$$

$$\rightarrow -\theta \geq -\sqrt{\theta} \text{ which is true for } \theta \in (0,1)$$

A.2.3 Derivative of λ' with respect to θ

$$\frac{\partial \lambda'}{\partial \theta} = \frac{[\theta(x_1 - B)^2 + (1-\theta)(x_2 - B)^2][-(B - x_2)(x_1 - x_2)]}{[\theta(x_1 - B)^2 + (1-\theta)(x_2 - B)^2]^2}$$

$$\frac{-[(x_1 - B)^2 - (x_2 - B)^2][(1-\theta)(B - x_2)(x_1 - x_2)]}{[\theta(x_1 - B)^2 + (1-\theta)(x_2 - B)^2]^2}$$

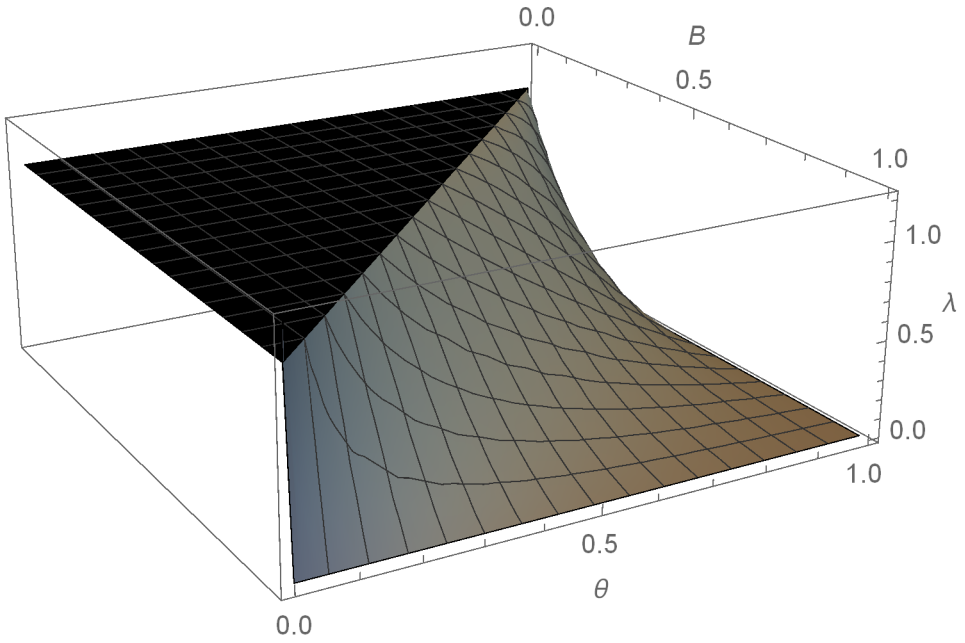
$$= \frac{-\theta(x_1 - B)^2(B - x_2)(x_1 - x_2) - (1-\theta)(x_2 - B)^2(B - x_2)(x_1 - x_2)}{[\theta(x_1 - B)^2 + (1-\theta)(x_2 - B)^2]^2}$$

$$\frac{-(1-\theta)(x_1 - B)^2(B - x_2)(x_1 - x_2) + (1-\theta)(x_2 - B)^2(B - x_2)(x_1 - x_2)}{[\theta(x_1 - B)^2 + (1-\theta)(x_2 - B)^2]^2}$$

$$= \frac{-(x_1 - B)^2(B - x_2)(x_1 - x_2)}{[\theta(x_1 - B)^2 + (1-\theta)(x_2 - B)^2]^2}$$

This is negative for $x_1 < B < x_2$ and $x_1 < x_2$.

Figure A.1: Optimal Insulation



Note: This figure plots λ^* for all values of B and θ with $x_1 = 0$ and $x_2 = 1$. The black portion of the surface is above $B \in [x_1, x_2 - \theta(x_2 - x_1)]$ and the gray portion is above $B \in [x_2 - \theta(x_2 - x_1), x_2]$.

A.3 Optimal Creation Decision

G_1 prefers not to create the agency iff:

$$U_{G_1}(q) > EU_{G_1}(\lambda^*)$$

$$-(q-x_1)^2 > -\theta[(1-\lambda^*)x_1 + B\lambda^* - x_1]^2 - (1-\theta)[(1-\lambda^*)x_2 + B\lambda^* - x_1]^2$$

$$(q-x_1)^2 < \theta[(1-\lambda^*)x_1 + B\lambda^* - x_1]^2 + (1-\theta)[(1-\lambda^*)x_2 + B\lambda^* - x_1]^2$$

$$\pm(q-x_1) < \sqrt{\theta[(1-\lambda^*)x_1 + B\lambda^* - x_1]^2 + (1-\theta)[(1-\lambda^*)x_2 + B\lambda^* - x_1]^2}$$

$$q > x_1 - \sqrt{\theta[(1-\lambda^*)x_1 + B\lambda^* - x_1]^2 + (1-\theta)[(1-\lambda^*)x_2 + B\lambda^* - x_1]^2}$$

or

$$q < x_1 + \sqrt{\theta[(1-\lambda^*)x_1 + B\lambda^* - x_1]^2 + (1-\theta)[(1-\lambda^*)x_2 + B\lambda^* - x_1]^2}$$

Then G_1 prefers to not create the agency for:

$$q \in \Bigg(x_1 - \sqrt{\theta[(1-\lambda^*)x_1 + B\lambda^* - x_1]^2 + (1-\theta)[(1-\lambda^*)x_2 + B\lambda^* - x_1]^2},$$
$$x_1 + \sqrt{\theta[(1-\lambda^*)x_1 + B\lambda^* - x_1]^2 + (1-\theta)[(1-\lambda^*)x_2 + B\lambda^* - x_1]^2}\Bigg)$$

Define q^* as $\sqrt{\theta[(1-\lambda^*)x_1 + B\lambda^* - x_1]^2 + (1-\theta)[(1-\lambda^*)x_2 + B\lambda^* - x_1]^2}$.

If $\lambda^* = 1$, then:

$$q^* = \sqrt{\theta[B - x_1]^2 + (1-\theta)[B - x_1]^2}$$

$$= B - x_1$$

$$\rightarrow (x_1 - q^*, x_1 + q^*) = (2x_1 - B, B)$$

The length of the interval is:

$$B - (2x_1 - B) = 2(B - x_1)$$

The derivative of the length of the interval with respect to B is:

$$\frac{\partial\, 2(B - x_1)}{\partial B} = 2$$

If $\lambda^* = \frac{(1-\theta)(B-x_2)(x_1-x_2)}{\theta(x_1-B)^2 + (1-\theta)(x_2-B)^2}$, then:

$$q^* = \sqrt{\frac{\theta(1-\theta)(B-x_1)^2(x_1-x_2)^2}{B^2 + \theta x_1^2 + (1-\theta)x_2^2 - 2B(\theta x_1 + (1-\theta)x_2)}}$$

$$\rightarrow (x_1 - q^*, x_1 + q^*) = \left(x_1 - \sqrt{\frac{\theta(1-\theta)(B-x_1)^2(x_1-x_2)^2}{B^2+\theta x_1^2+(1-\theta)x_2^2-2B(\theta x_1+(1-\theta)x_2)}}, \right.$$
$$\left. x_1 + \sqrt{\frac{\theta(1-\theta)(B-x_1)^2(x_1-x_2)^2}{B^2+\theta x_1^2+(1-\theta)x_2^2-2B(\theta x_1+(1-\theta)x_2)}} \right)$$

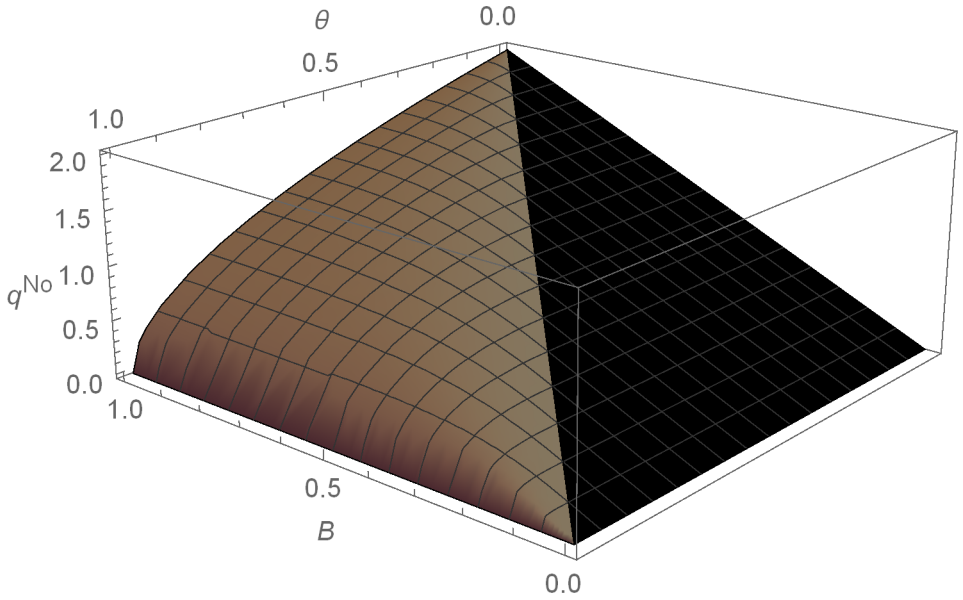
The length of the interval is:

$$x_1 + q^* - (x_1 - q^*) = 2q^* = 2\sqrt{\frac{\theta(1-\theta)(B-x_1)^2(x_1-x_2)^2}{B^2+\theta x_1^2+(1-\theta)x_2^2-2B(\theta x_1+(1-\theta)x_2)}}$$

Taking first order conditions of this term with respect to B yields:

$$\arg\max_B 2\sqrt{\frac{\theta(1-\theta)(B-x_1)^2(x_1-x_2)^2}{B^2+\theta x_1^2+(1-\theta)x_2^2-2B(\theta x_1+(1-\theta)x_2)}} = x_2$$

Figure A.2: Size of the "No-Agency" Interval



Note: This figure plots q^{No} for all values of B and θ with $x_1 = 0$ and $x_2 = 1$. The black portion of the surface is above $B \in [x_1, x_2 - \theta(x_2 - x_1)]$ and the gray portion is above $B \in [x_2 - \theta(x_2 - x_1), x_2]$.

Appendix B

Appendix to Chapter 2

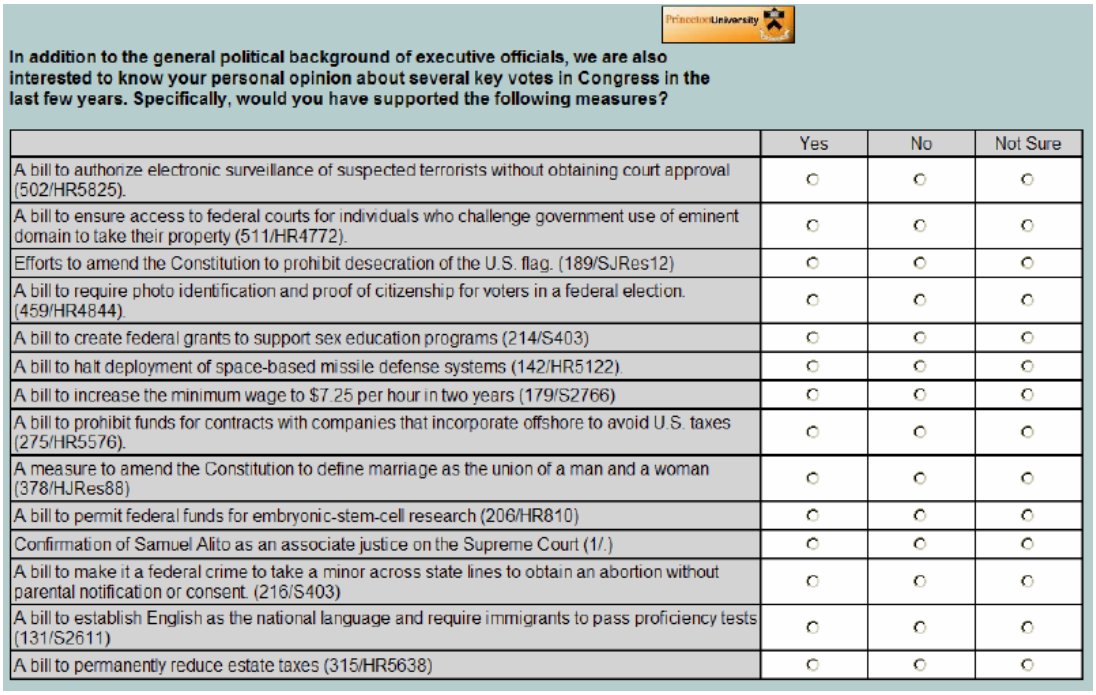
B.1 Estimating Ideology

I used 14 votes to bridge the 109th Congress and 11 votes to bridge the 113th Congress. I used legislators and survey respondents serving over time to create bridges between Congresses. I treated members of the House who represented different Congressional districts due to redistricting as separate legislators to account for the change in constituency influence. Only survey respondents with at least two "votes" were included. I estimated ideal points using R 3.3.3 and the ideal function in the pscl package version 1.4.9. I ran one MCMC chain for 375,000 iterations thinned by 75 with the first 75,000 iterations discarded as burn-in, leaving 4,000 observations for inference. Diagnostics indicated the chain converged. The space was locally identified using a mean of 0 and variance of 1. Figures B.1 and B.2 give the question text. The discrimination parameters of the 25 measures are distinguishable from zero with 95% confidence. This suggests that all 25 measures are useful for inferring ideology. The mean cut points of the 25 parameters range from -2.05 to 1.54, with 10 means greater than zero and 15 less than zero.

B.2 Replication using Self-Reported Ideology

Figures B.3 and B.4 and Table B.1 replicate the analysis in main text using self-reported ideology. Respondents to both surveys were asked, "In general, would you describe your political views as:". Responses were "Very conservative," "Conservative," "Somewhat conservative," "Moderate," "Somewhat liberal," "Liberal," "Very liberal," and "Don't know." Responses are coded 0 to 7 with 0 equal to "Very liberal" and 7 equal to "Very conservative." Findings are reassuringly similar to findings in the main text.

Figure B.1: Measures from the 109th Congress



In addition to the general political background of executive officials, we are also interested to know your personal opinion about several key votes in Congress in the last few years. Specifically, would you have supported the following measures?

	Yes	No	Not Sure
A bill to authorize electronic surveillance of suspected terrorists without obtaining court approval (502/HR5825).	○	○	○
A bill to ensure access to federal courts for individuals who challenge government use of eminent domain to take their property (511/HR4772).	○	○	○
Efforts to amend the Constitution to prohibit desecration of the U.S. flag. (189/SJRes12)	○	○	○
A bill to require photo identification and proof of citizenship for voters in a federal election. (459/HR4844).	○	○	○
A bill to create federal grants to support sex education programs (214/S403)	○	○	○
A bill to halt deployment of space-based missile defense systems (142/HR5122).	○	○	○
A bill to increase the minimum wage to $7.25 per hour in two years (179/S2766)	○	○	○
A bill to prohibit funds for contracts with companies that incorporate offshore to avoid U.S. taxes (275/HR5576).	○	○	○
A measure to amend the Constitution to define marriage as the union of a man and a woman (378/HJRes88)	○	○	○
A bill to permit federal funds for embryonic-stem-cell research (206/HR810)	○	○	○
Confirmation of Samuel Alito as an associate justice on the Supreme Court (1/.)	○	○	○
A bill to make it a federal crime to take a minor across state lines to obtain an abortion without parental notification or consent. (216/S403)	○	○	○
A bill to establish English as the national language and require immigrants to pass proficiency tests (131/S2611)	○	○	○
A bill to permanently reduce estate taxes (315/HR5638)	○	○	○

Figure B.2: Measures from the 113th Congress

In addition to the general political background of executive officials, we are also interested to know your personal opinion about several key votes in Congress during the last few years. These issues have gotten a lot of attention recently in the press and among the public, but no one has asked those responsible for implementing these policies their opinion. We would benefit from knowing the informed views of federal executives in the aggregate to compare with the public.

Specifically, would you have supported the following measures?

	Yes	No	Not sure
Overhaul the CFPB: A bill to replace the Consumer Financial Protection Bureau with an independent Financial Product Safety Commission that, unlike the CFPB, would be subject to the congressional appropriations process.	○	○	○
Repeal the Affordable Care Act: A bill that would repeal the 2010 health care overhaul law, commonly called "Obamacare."	○	○	○
Work Requirements/Drug Testing for SNAP: A bill that would reauthorize the Supplemental Nutrition Assistance Program ("food stamps") allowing drug testing as a condition of receiving benefits and imposition of new work requirements on SNAP recipients.	○	○	○
Congressional Approval of Federal Regulations: A bill that would require Congress to approve executive agency regulatory proposals that are deemed to be "major rules."	○	○	○
Approve the Keystone Pipeline: A bill to approve the construction, operation, and maintenance of the Keystone XL pipeline.	○	○	○
Employment Nondiscrimination: A bill to prohibit employment discrimination on the basis of sexual orientation or gender identity.	○	○	○
Assault Weapons Ban: An amendment that would prohibit the future production, import, sale, transfer or possession of certain firearms considered to be assault weapons.	○	○	○
Immigration Reform: A bill that would overhaul U.S. immigration policies, create an incremental path to citizenship for most illegal immigrants in the country and institute new border security measures.	○	○	○
Limit EPA Authority: A bill that would limit EPA regulation of greenhouse gas emissions from fossil-fueled power plants under the 1963 air pollution control law.	○	○	○
Violence Against Women Act Reauthorization: A bill that would provide protections and assistance programs to victims of domestic violence, sexual assault, and stalking.	○	○	○
Defund NSA Surveillance of U.S. Citizens: An amendment that would bar the use of funds by the National Security Agency to target a U.S. person or acquire and store the content of their communications.	○	○	○

Figure B.3: Self-Reported Ideology of PAS and Non-PAS Appointees by Administration

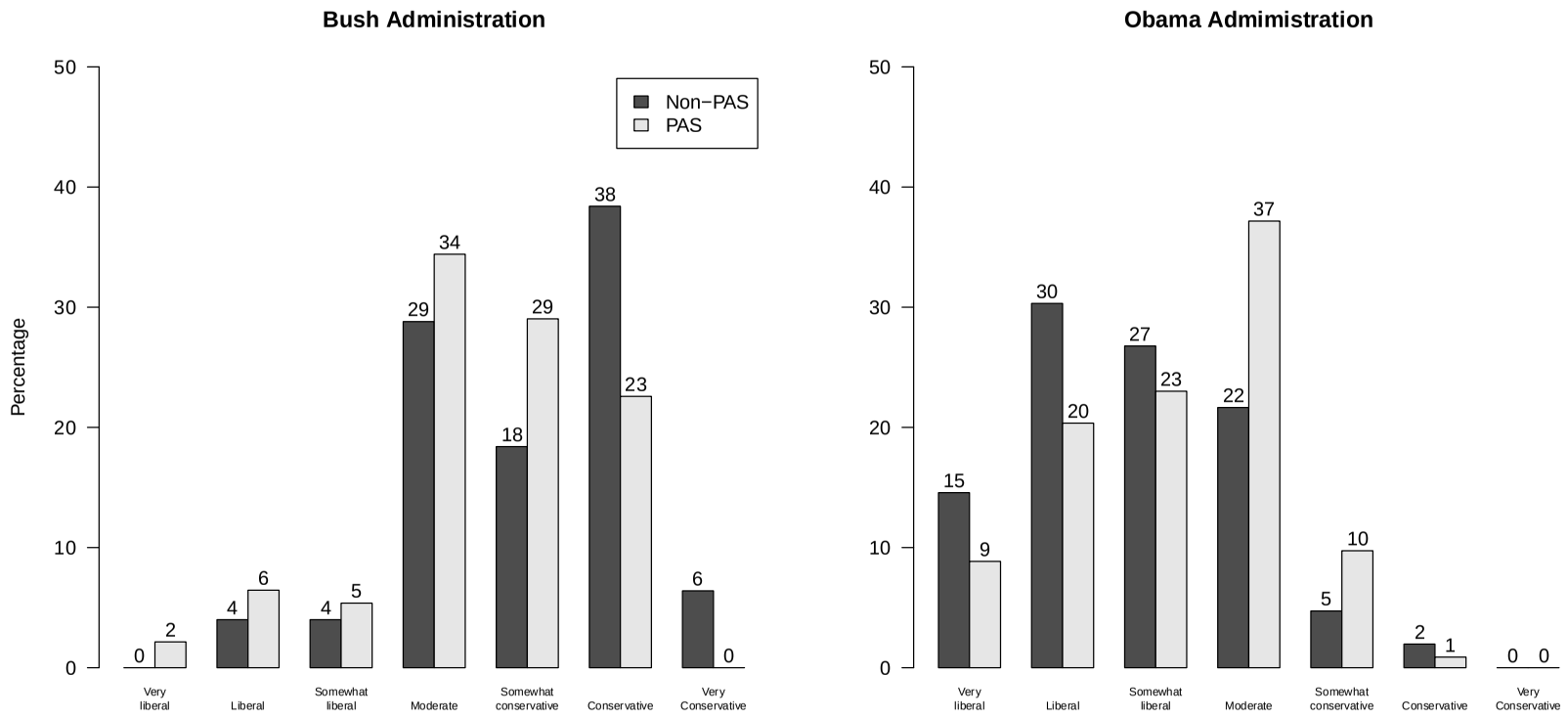


Figure B.4: Self-Reported Ideology of Appointees and Careerists by Administration

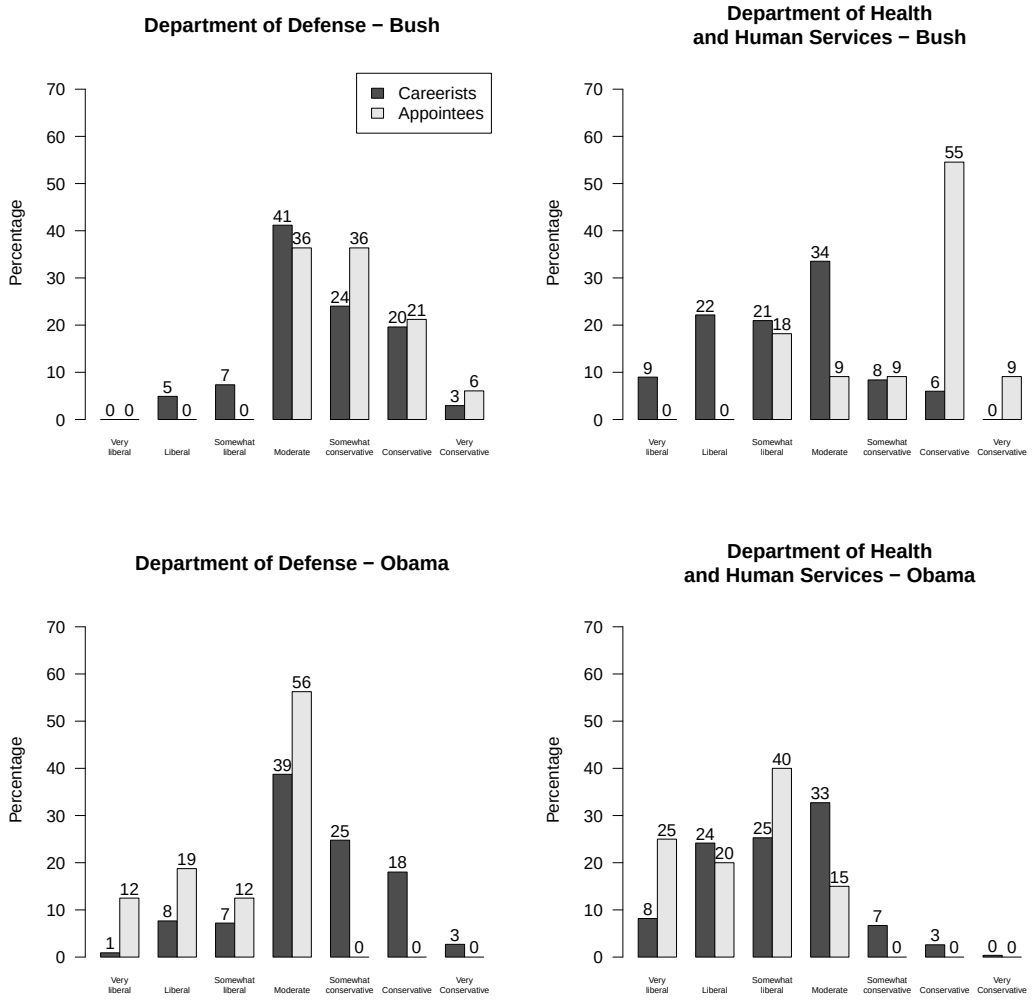


Table B.1: Replication of OLS Models of Appointee Ideology

Model	(B1)	(B2)	(B3)
Obama Appointee	-2.25^{***}	-2.17^{***}	-2.23^{***}
	(0.13)	(0.16)	(0.17)
PAS	-0.53^{***}	-0.49^{***}	-0.46^{***}
	(0.17)	(0.14)	(0.13)
Obama App. $\times$ PAS	0.97^{***}	0.93^{***}	0.98^{***}
	(0.21)	(0.20)	(0.20)
Mean Careerist Ideal Point		0.26^{*}	0.33^{*}
		(0.15)	(0.19)
Mn. Careerist $\times$ Skill			0.30^{*}
			(0.16)
Workforce Skill			-0.97^{**}
			(0.46)
Constant	4.02^{***}	3.25^{***}	3.03^{***}
	(0.11)	(0.46)	(0.57)
N	585	533	497
R^2	0.38	0.40	0.43
N Clusters		64	45

Robust standard errors in parentheses.
Standard errors clustered on agency in Models B2 & B3.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$
in a two-sided test.

Appendix C

Appendix to Chapter 3

C.1 Survey Design

Contact information for the target population (i.e., mailing address, email address, and telephone number) was obtained from the *Leadership Federal Government Premium* database, an online directory that is used to create the *Federal Yellow Book*, both of which are published by Leadership Directories, Inc. The survey was in the field from August 14, 2014 to December 15, 2014. Respondents were sent invitations to take the survey by regular mail and email when available. Email addresses were obtained for 79 percent of the target population. The database was also used to identify appointed positions.

Agencies of the United States government that were headed by Senate-confirmed appointees and whose functions were not exclusively advisory in nature were targeted. This includes 155 agencies within the fifteen executive departments, 66 independent agencies, and seven agencies within the Executive Office of the President. The *Sourcebook of United States Executive Agencies* (Lewis and Selin 2012) was used to create a list of workplaces. Respondents were asked to select their workplace from a list of prominent bureaus in cabinet departments, including offices of the secretaries, and independent agencies. The selected workplace was inserted in question text. If no workplace was selected or "Other" was selected because a respondent's workplace inside a cabinet department was not listed, "your agency" was inserted. If a respondent selected the relevant Office of the Secretary or Attorney General, the executive department was inserted for "[your agency]." This removes uncertainty about what the respondents considers her agency when answering questions.

Agencies in the Executive Office of the President were identified using Table 1 of the *Sourcebook*. The Executive Residence, Office of Administration, and White House Office

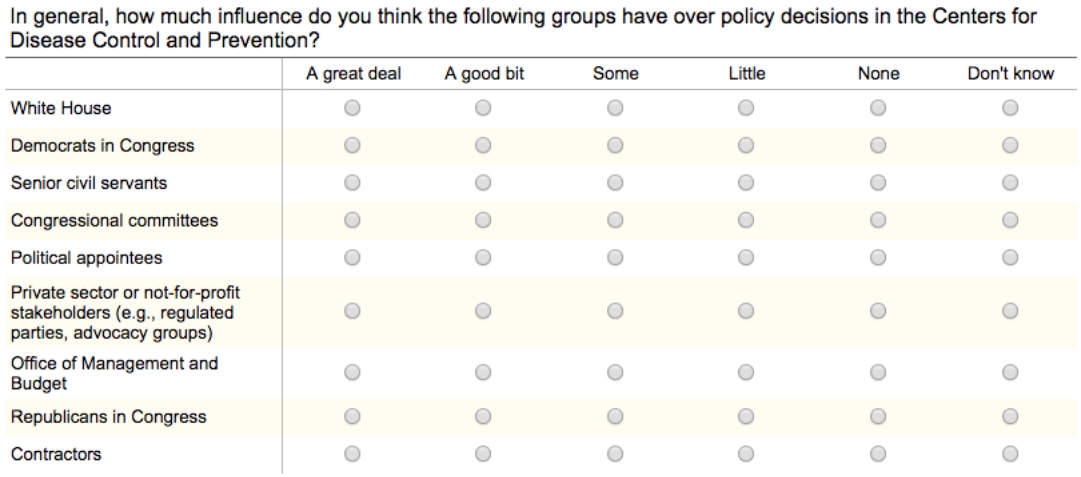
were excluded. Prominent bureaus and agencies within executive departments were identified using Table 2 of the *Sourcebook*. Limited adjustments were made to this list based on which agencies and bureaus the research team wanted to be able to analyze separately from the executive department as a whole. Agencies outside the executive departments were identified using Table 5 of the *Sourcebook*. Scholarship agencies, regional agencies, and non-profits and cooperatives were excluded because they do not play a prominent role in policymaking. Respondents were asked to select their workplace from the list of prominent bureaus in cabinet departments, including offices of the secretaries, and independent agencies.

The target population was political appointees (appointees with Senate confirmation, appointees without Senate confirmation, non-career members of the Senior Executive Service (SES), and Schedule C appointees), career members of the SES, members of the Senior Foreign Service, and other senior career executives (e.g., at the GS-14 or GS-15 level) with responsibility for policymaking, who were based in the United States. The response rate to the survey was 24 percent (3,551 of 14,698). The response rate among appointees was 18 percent (429 of 2,444) compared to 25 percent among careerists (3,122 of 12,254). The survey was offered online and on paper. Of the 3,551 respondents, 586 chose the paper survey. Nineteen respondents submitted both the online and paper surveys. The earlier completed response was kept in these cases. These cases are not counted in the 586 respondents that chose the paper survey.

C.2 Question Screen Shots

This section contains screen shots of relevant questions from the 2014 Survey on the Future of Government Service. The Centers for Disease Control and Prevention is used here to show where the respondents' agencies appeared in the text.

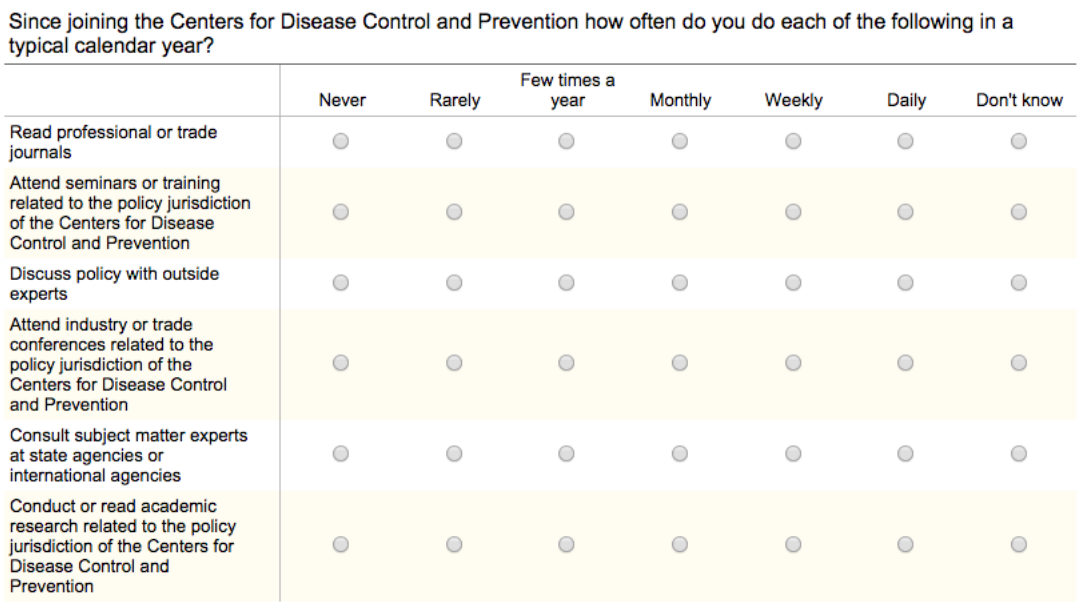
Figure C.1: Perceptions of Relative Influence



In general, how much influence do you think the following groups have over policy decisions in the Centers for Disease Control and Prevention?

	A great deal	A good bit	Some	Little	None	Don't know
White House	○	○	○	○	○	○
Democrats in Congress	○	○	○	○	○	○
Senior civil servants	○	○	○	○	○	○
Congressional committees	○	○	○	○	○	○
Political appointees	○	○	○	○	○	○
Private sector or not-for-profit stakeholders (e.g., regulated parties, advocacy groups)	○	○	○	○	○	○
Office of Management and Budget	○	○	○	○	○	○
Republicans in Congress	○	○	○	○	○	○
Contractors	○	○	○	○	○	○

Figure C.2: Self-Reported Frequency of Specific Investment Behaviors



Since joining the Centers for Disease Control and Prevention how often do you do each of the following in a typical calendar year?

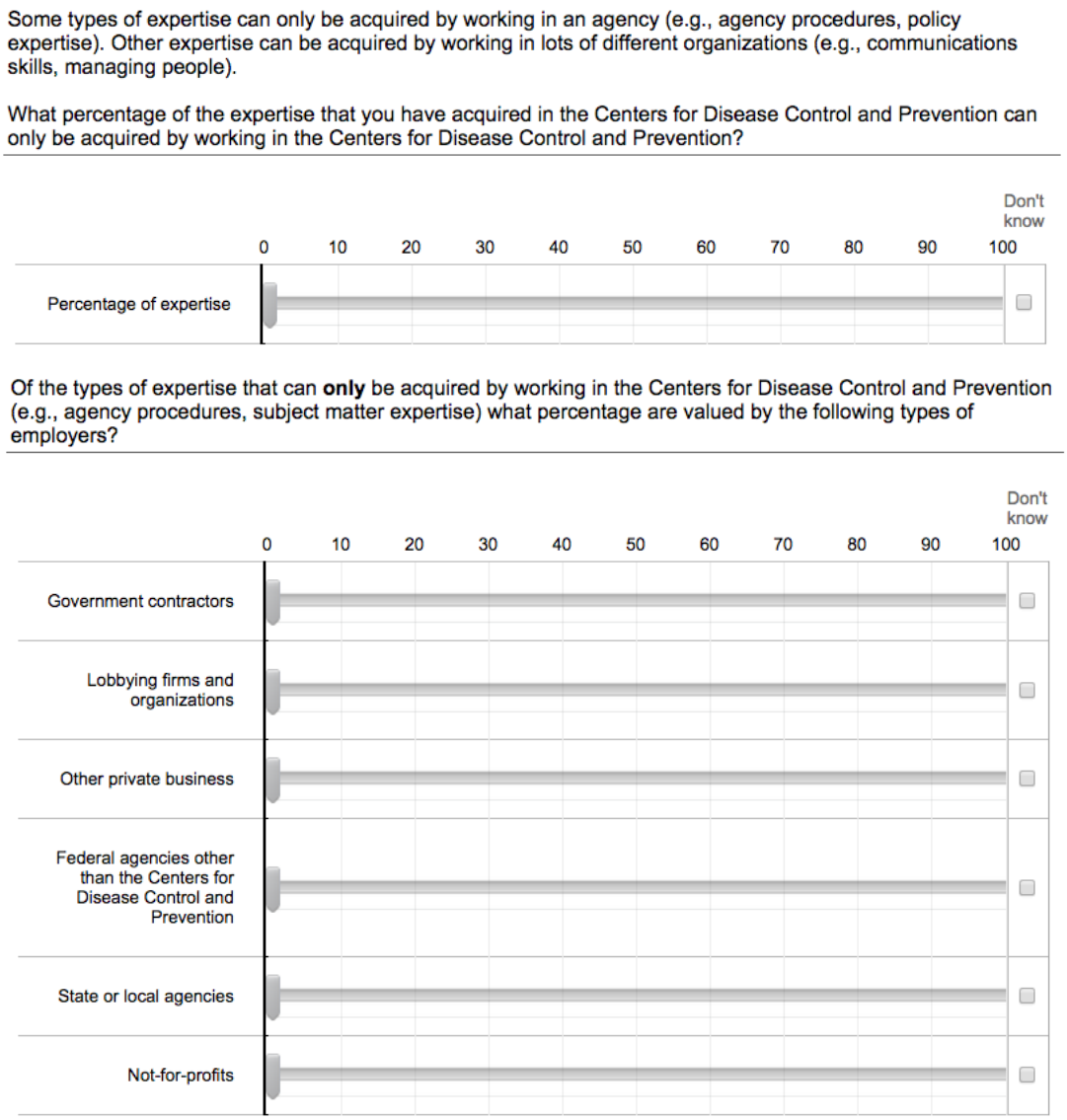
	Never	Rarely	Few times a year	Monthly	Weekly	Daily	Don't know
Read professional or trade journals	○	○	○	○	○	○	○
Attend seminars or training related to the policy jurisdiction of the Centers for Disease Control and Prevention	○	○	○	○	○	○	○
Discuss policy with outside experts	○	○	○	○	○	○	○
Attend industry or trade conferences related to the policy jurisdiction of the Centers for Disease Control and Prevention	○	○	○	○	○	○	○
Consult subject matter experts at state agencies or international agencies	○	○	○	○	○	○	○
Conduct or read academic research related to the policy jurisdiction of the Centers for Disease Control and Prevention	○	○	○	○	○	○	○

Figure C.3: Questions about Intrinsic Motivations

We'd like to understand what you value about your job. How important are each of the following job attributes to you?

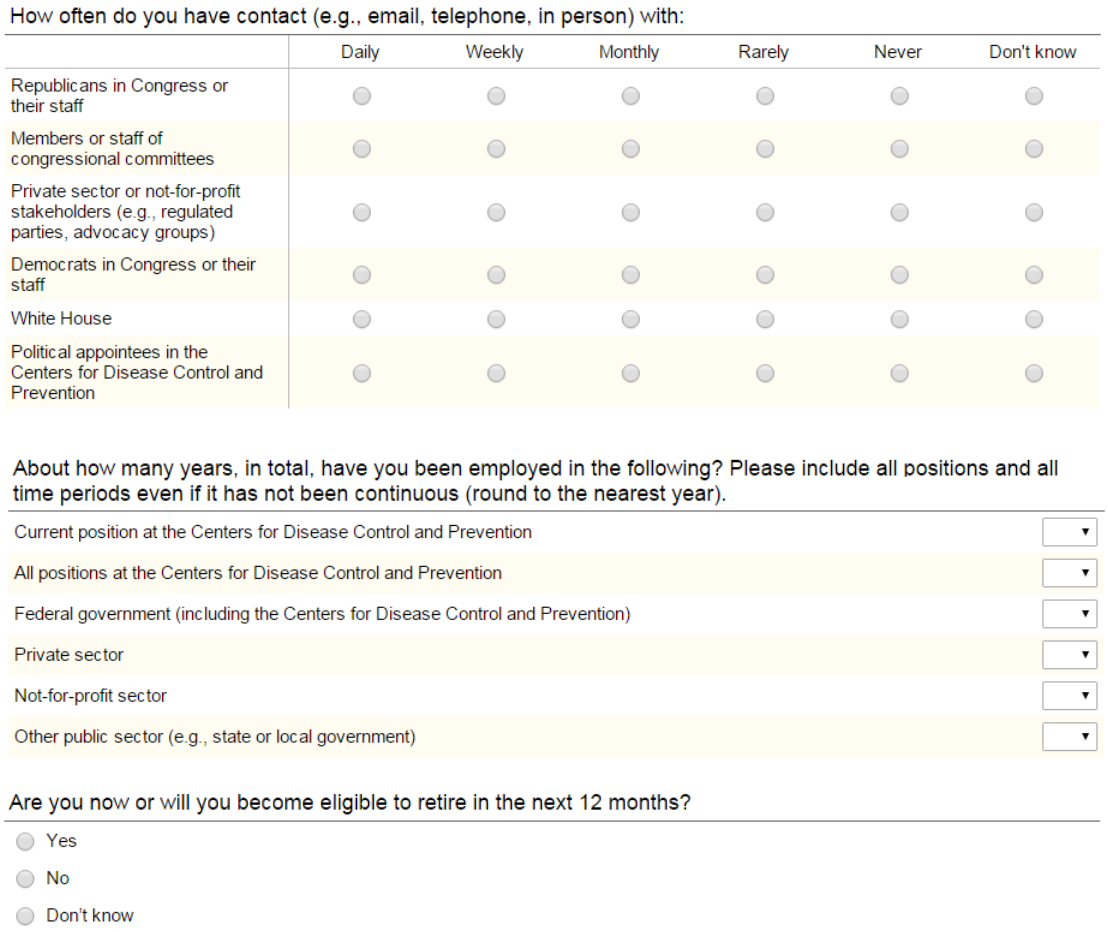
	Not at all important	Not too important	Somewhat important	Important	Very important
Work-life balance	○	○	○	○	○
Opportunities to develop professional skills to move to a higher job in the federal government	○	○	○	○	○
Opportunities to develop professional skills to move to a job in the private sector	○	○	○	○	○
Opportunities to influence public policies that are important to me	○	○	○	○	○
Salary and benefits	○	○	○	○	○
Opportunities to support the mission of the Centers for Disease Control and Prevention	○	○	○	○	○
Job security	○	○	○	○	○

Figure C.4: Perceptions of the Market Value of Expertise



Note: If the respondent was a U.S. Attorney or Assistant U.S. Attorney, this question included law firms as an employer.

Figure C.5: Contact with Appointees, Years of Service, and Retirement Eligibility



How often do you have contact (e.g., email, telephone, in person) with:

	Daily	Weekly	Monthly	Rarely	Never	Don't know
Republicans in Congress or their staff	○	○	○	○	○	○
Members or staff of congressional committees	○	○	○	○	○	○
Private sector or not-for-profit stakeholders (e.g., regulated parties, advocacy groups)	○	○	○	○	○	○
Democrats in Congress or their staff	○	○	○	○	○	○
White House	○	○	○	○	○	○
Political appointees in the Centers for Disease Control and Prevention	○	○	○	○	○	○

About how many years, in total, have you been employed in the following? Please include all positions and all time periods even if it has not been continuous (round to the nearest year).

Current position at the Centers for Disease Control and Prevention	▾
All positions at the Centers for Disease Control and Prevention	▾
Federal government (including the Centers for Disease Control and Prevention)	▾
Private sector	▾
Not-for-profit sector	▾
Other public sector (e.g., state or local government)	▾

Are you now or will you become eligible to retire in the next 12 months?

- ○ Yes
- ○ No
- ○ Don't know

C.3 Distributions of Key Variables

This sections contains plots of the distributions of key variables. For each variable, I plot the distribution for all respondents and the distribution for a relevant regression model in the tables in the main text. Please note that questions measuring intent to exit, perceived politicization, and preference divergence were asked of all respondents while certain control variables were asked of a random half-sample which causes a reduction in observations between the full sample and the regression models.

Figure C.6: Distributions of Intent to Exit

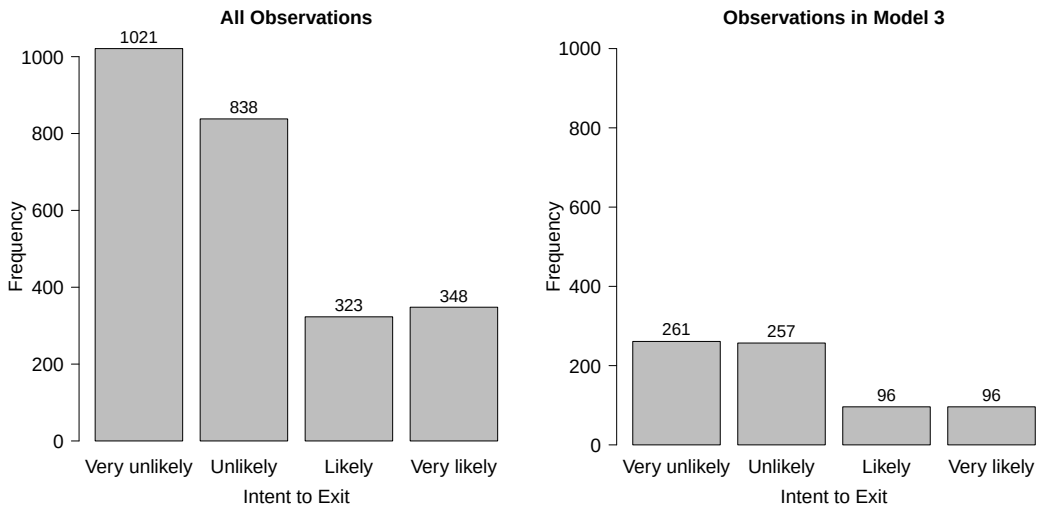
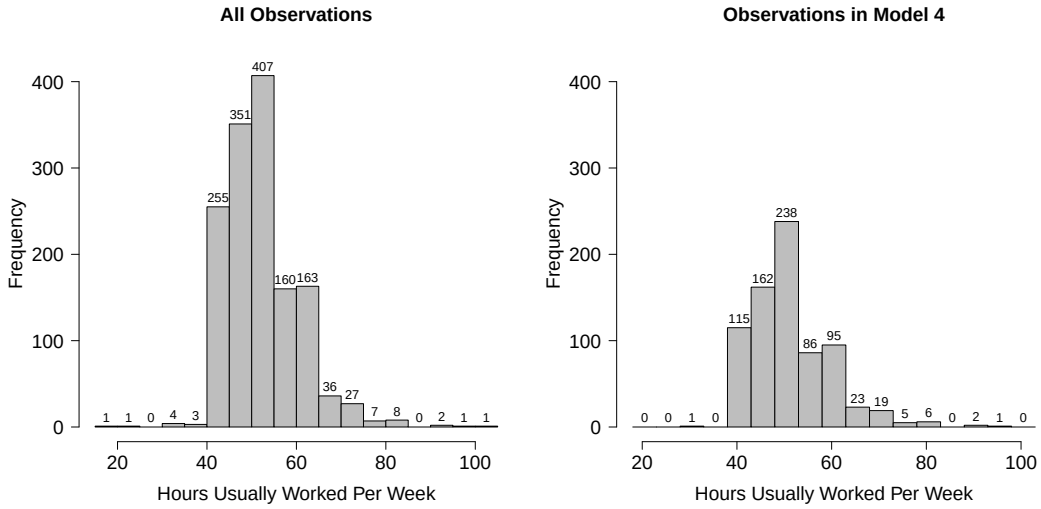


Figure C.7: Distributions of Effort



Note: Hours worked are divided into 5-hour bins. Bins include the lower bound, for example, the bin to the right of 40 on the x-axis includes responses of at least 40 and less than 45.

Figure C.8: Distributions of Politicization

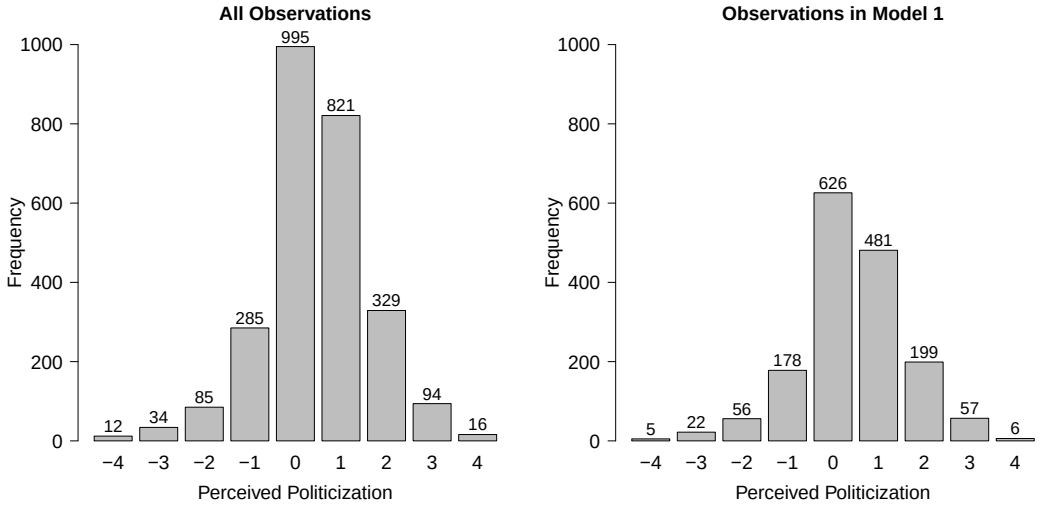


Figure C.9: Distributions of Preference Divergence

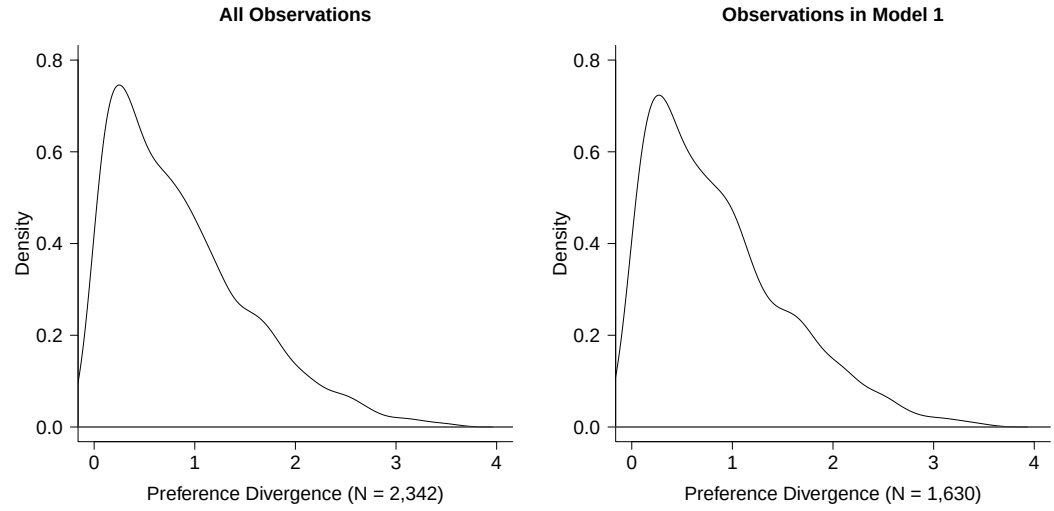


Figure C.10: Distribution of Investment by Civil Servants (All Observations)

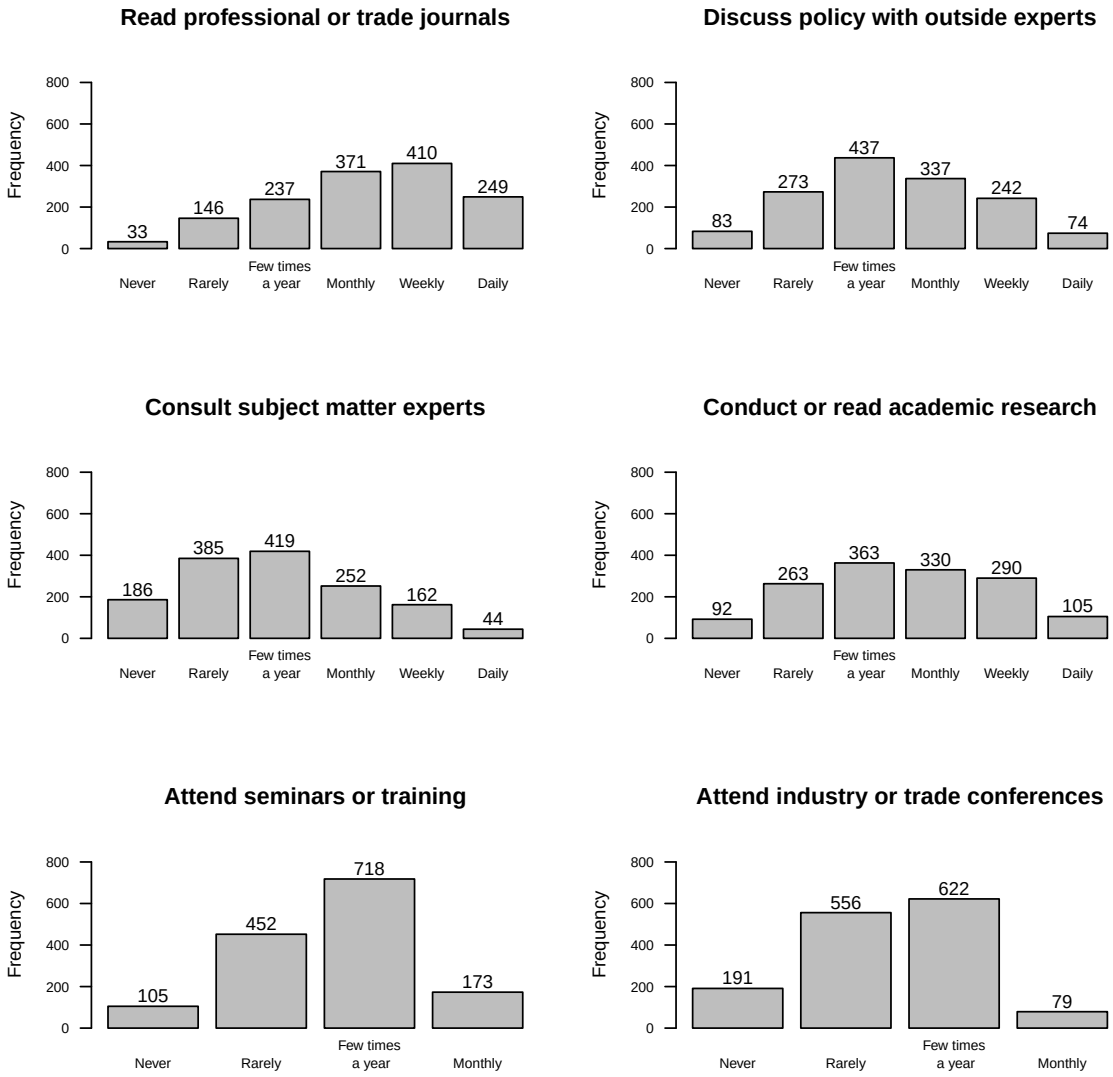
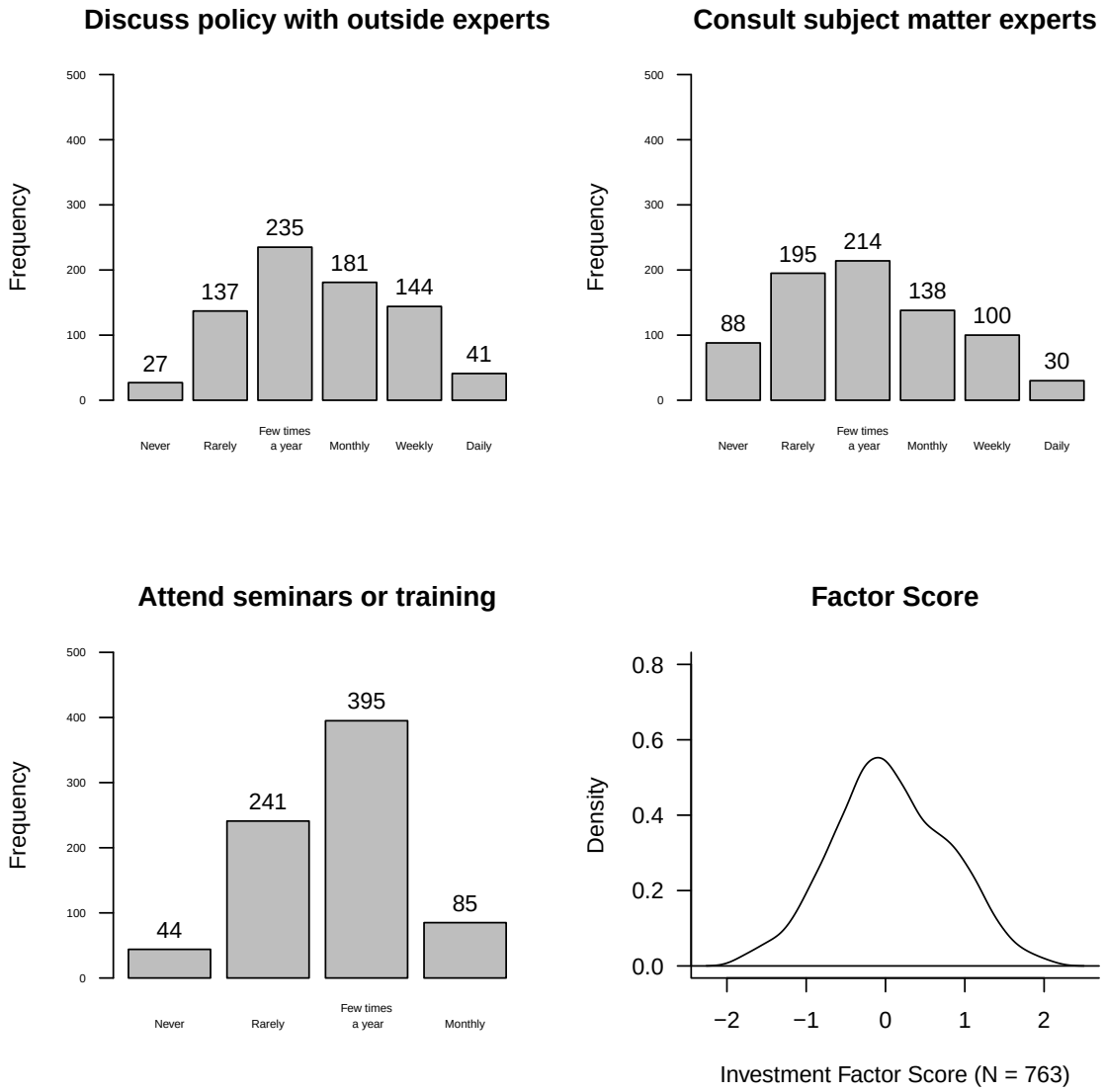


Figure C.11: Distribution of Investment by Civil Servants (Observations in Models in Table 2)



C.4 Scatter Plots and Joint Distributions

This section contains scatter plots and, when both variables are categorical, joint distribution tables for each bivariate relationship relevant for the hypotheses in the paper. Again, I present one plot of all observations and second plot of only observations from regression

models. If I estimated the relationship using an ordered probit model, I include a LOESS line in the plot to account for non-linearity in the relationship. If I estimated the relationship using an OLS model, I include a fitted line in the plot. The plots generally support the relationships described in the main text.

The joint distribution tables are particularly useful for understanding bivariate relationships estimated using an ordered probit model. For example, the seventh row of Table C.1 gives $Pr(Exit = i|Politicization = 2),$ where $i = \{$Very unlikely, Unlikely, Likely, Very likely$\}$. Table C.1 can be used to compare the probability of exit intention at various levels of politicization. The third column shows that $Pr(Exit = \text{Likely}|Politicization = 0) = 0.1171$ and $Pr(Exit = \text{Likely}|Politicization = 2) = 0.1563$, which demonstrates the basic bivariate relationship - as politicization increases the likelihood of exit increases. I do not use a χ^2 test of independence to determine whether the conditional distributions are statistically distinguishable because the small sample sizes in some cells, particularly cases where the cell sample size is zero, make this test unreliable. These tables generally support the relationships described in the main text.

Figure C.12: Preference Divergence and Politicization

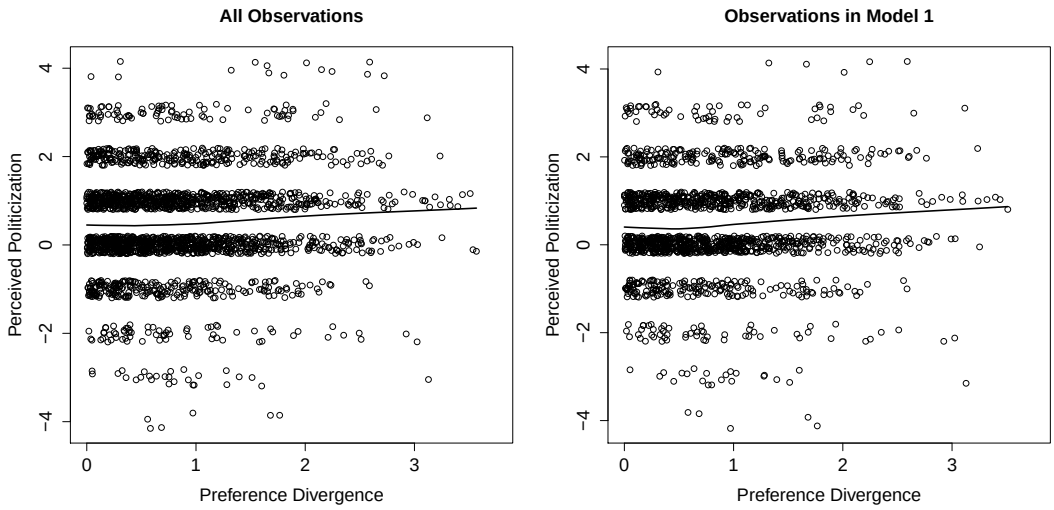


Figure C.13: Politicization and Intent to Exit

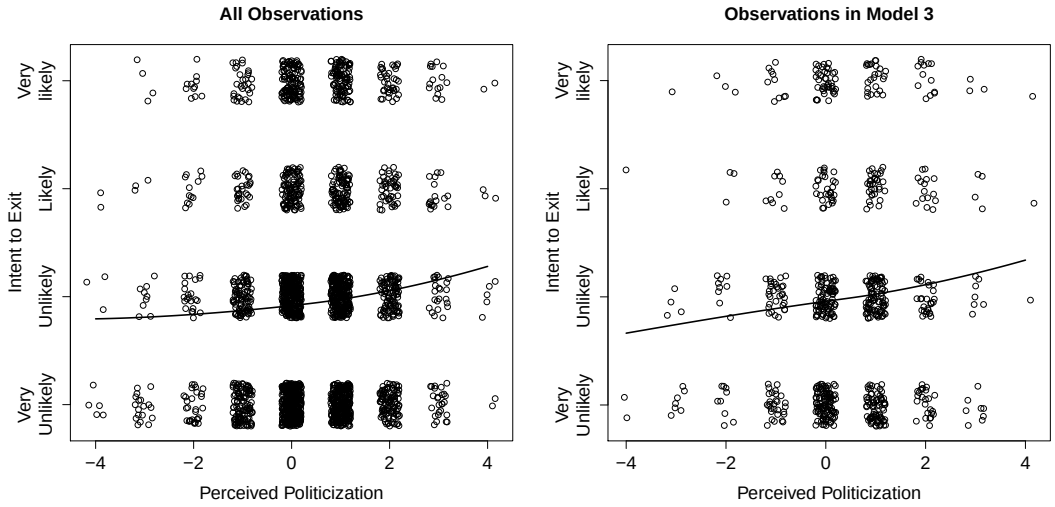


Table C.1: Joint Distribution of Politicization and Exit Intention (Full Sample)

	Exit intention				
Politicization	Very unlikely	Unlikely	Likely	Very likely	Total
-4	5	3	2	0	10
Row Pct.	50.00	30.00	20.00	0.00	100
-3	18	9	3	4	34
	52.94	26.47	8.82	11.76	100
-2	29	22	12	11	74
	39.19	29.73	16.22	14.86	100
-1	117	89	29	30	265
	44.15	33.58	10.94	11.32	100
0	370	303	106	126	905
	40.88	33.48	11.71	13.92	100
1	274	252	98	104	728
	37.64	34.62	13.46	14.29	100
2	106	100	45	37	288
	36.81	34.72	15.63	12.85	100
3	26	23	17	15	81
	32.1	28.4	20.99	18.52	100
4	2	5	3	2	12
	16.67	41.67	25.00	16.67	100
Total	947	806	315	329	2,397
	39.51	33.63	13.14	13.73	100

Table C.2: Joint Distribution of Politicization and Exit Intention (Observations in Model 3)

	Exit intention				
Politicization	Very unlikely	Unlikely	Likely	Very likely	Total
-4	2	0	1	0	3
Row pct.	66.67	0.00	33.33	0.00	100
-3	7	4	0	1	12
	58.33	33.33	0.00	8.33	100
-2	9	9	3	3	24
	37.50	37.50	12.50	12.50	100
-1	29	32	9	10	80
	36.25	40.00	11.25	12.50	100
0	107	86	30	40	263
	40.68	32.70	11.41	15.21	100
1	74	90	33	25	222
	33.33	40.54	14.86	11.26	100
2	25	28	15	13	81
	30.86	34.57	18.52	16.05	100
3	8	7	4	3	22
	36.36	31.82	18.18	13.64	100
4	0	1	1	1	3
	0.00	33.33	33.33	33.33	100
Total	261	257	96	96	710
	36.76	36.2	13.52	13.52	100

Figure C.14: Politicization and Work Hours

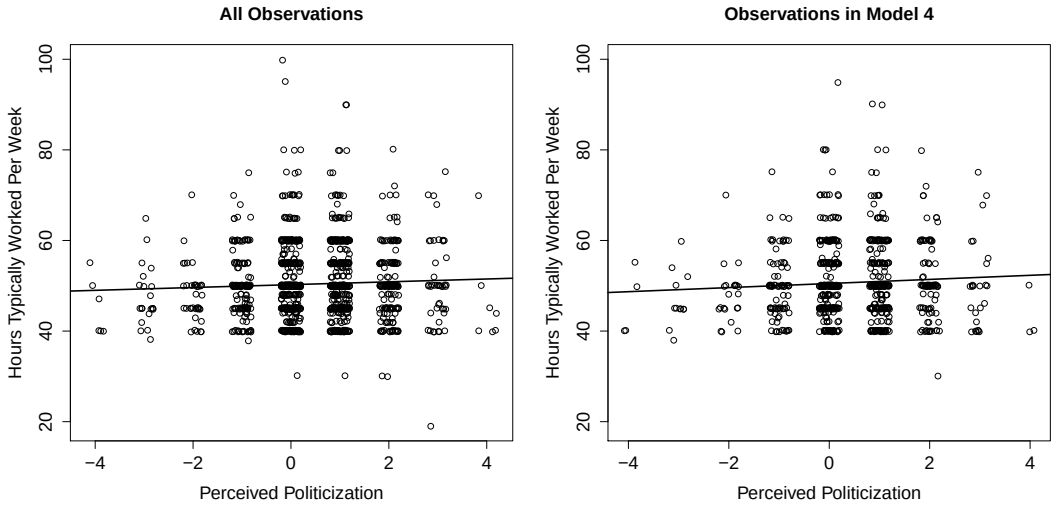
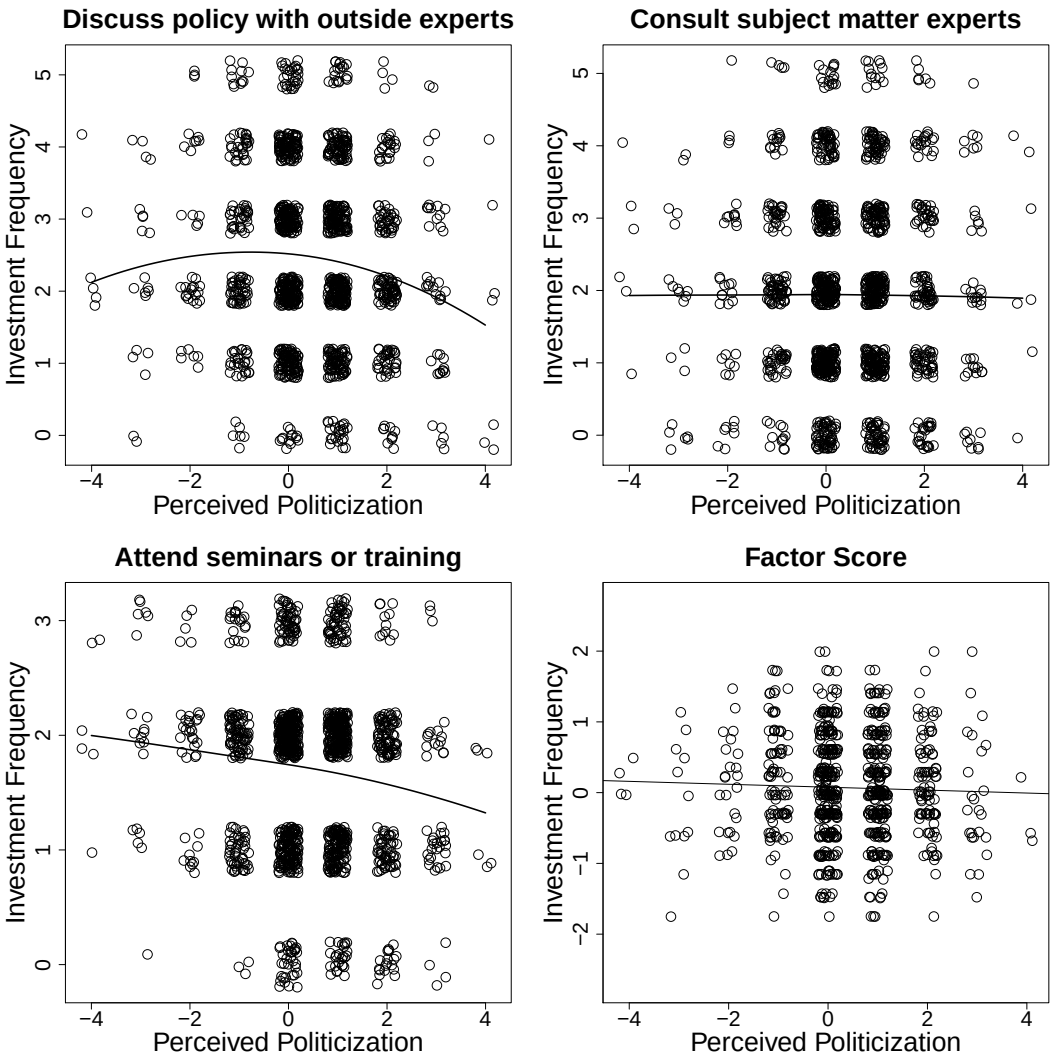


Figure C.15: Politicization and Investment Frequency (Full Sample)



Note: Categorical responses for frequency of investment are coded as follows: 0 - "Never", 1 - "Rarely", 2 - "Few times a year", 3 - "Monthly", 4 - "Weekly", and 5 - "Daily."

Table C.3: Joint Distribution of Politicization and Investment Frequency

	Discuss policy with outside experts						
Politicization	Never	Rarely	Few times a year	Monthly	Weekly	Daily	Total
-4	0	0	4	1	1	0	6
Row Pct.	0.00	0.00	66.67	16.67	16.67	0.00	100
-3	2	4	6	5	4	0	21
	9.52	19.05	28.57	23.81	19.05	0.00	100
-2	0	6	17	5	7	3	38
	0	15.79	44.74	13.16	18.42	7.89	100
-1	6	26	42	31	27	11	143
	4.2	18.18	29.37	21.68	18.88	7.69	100
0	13	95	132	116	95	28	479
	2.71	19.83	27.56	24.22	19.83	5.85	100
1	23	74	128	108	70	19	422
	5.45	17.54	30.33	25.59	16.59	4.5	100
2	10	34	58	36	22	4	164
	6.1	20.73	35.37	21.95	13.41	2.44	100
3	5	11	12	11	3	2	44
	11.36	25	27.27	25	6.82	4.55	100
4	3	0	2	1	1	0	7
	42.86	0.00	28.57	14.29	14.29	0.00	100
Total	62	250	401	314	230	67	1,324
	4.68	18.88	30.29	23.72	17.37	5.06	100

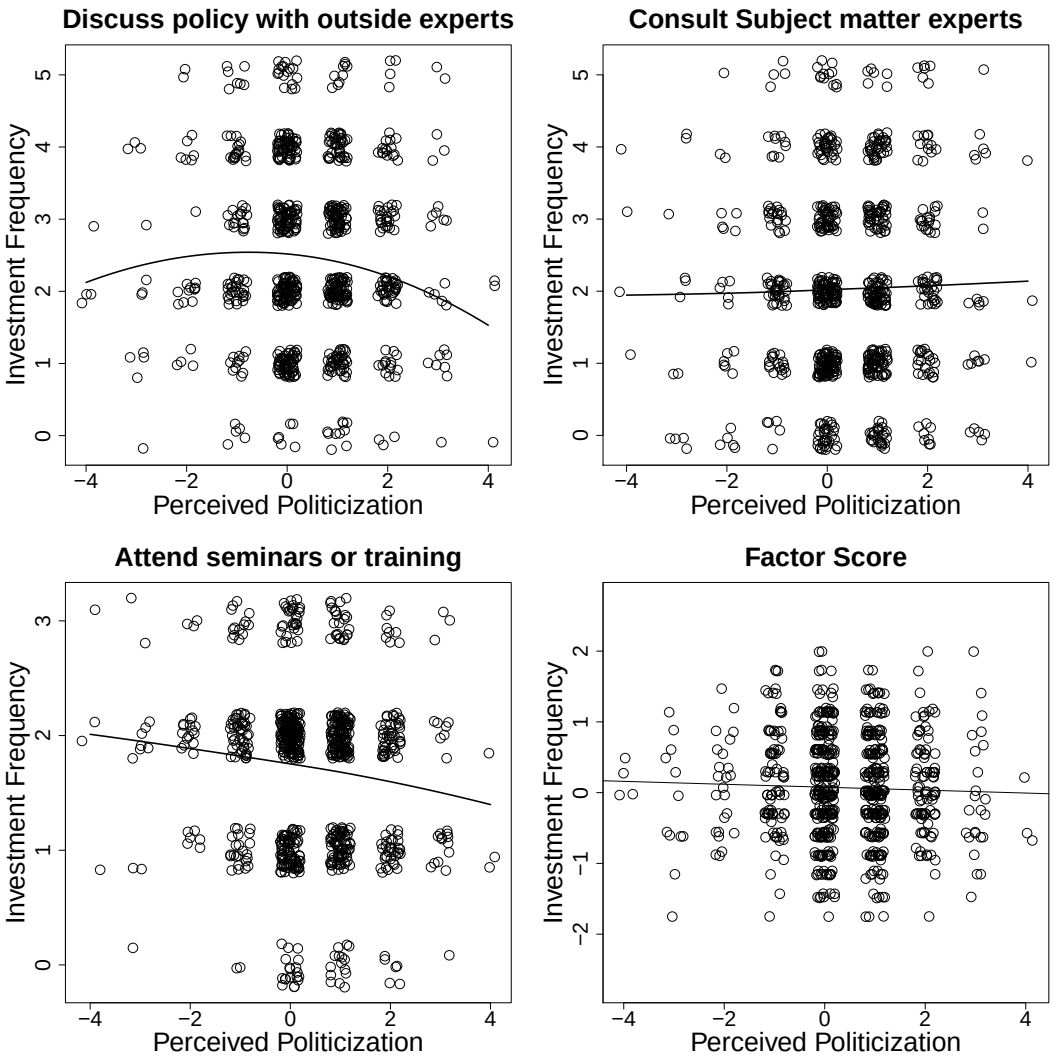
Table C.4: Joint Distribution of Politicization and Investment Frequency

	Consult subject matter experts						
Politicization	Never	Rarely	Few times a year	Monthly	Weekly	Daily	Total
-4	0	1	2	2	1	0	6
Row Pct.	0.00	16.67	33.33	33.33	16.67	0.00	100
-3	6	3	7	3	2	0	21
	28.57	14.29	33.33	14.29	9.52	0.00	100
-2	7	7	11	9	3	1	38
	18.42	18.42	28.95	23.68	7.89	2.63	100
-1	12	32	54	28	13	4	143
	8.39	22.38	37.76	19.58	9.09	2.8	100
0	58	139	134	84	51	16	482
	12.03	28.84	27.8	17.43	10.58	3.32	100
1	49	110	123	74	53	13	422
	11.61	26.07	29.15	17.54	12.56	3.08	100
2	24	42	44	28	19	6	163
	14.72	25.77	26.99	17.18	11.66	3.68	100
3	8	11	12	6	6	1	44
	18.18	25	27.27	13.64	13.64	2.27	100
4	1	1	2	1	2	0	7
	14.29	14.29	28.57	14.29	28.57	0.00	100
Total	165	346	389	235	150	41	1,326
	12.44	26.09	29.34	17.72	11.31	3.09	100

Table C.5: Joint Distribution of Politicization and Investment Frequency

	Attend training or seminars				
Politicization	Never	Rarely	Few times a year	Monthly	Total
-4	0	1	3	2	6
Row Pct.	0.00	16.67	50.00	33.33	100
-3	1	5	9	6	21
	4.76	23.81	42.86	28.57	100
-2	0	10	23	5	38
	0.00	26.32	60.53	13.16	100
-1	3	46	75	19	143
	2.1	32.17	52.45	13.29	100
0	34	147	243	57	481
	7.07	30.56	50.52	11.85	100
1	26	133	207	56	422
	6.16	31.52	49.05	13.27	100
2	18	54	81	11	164
	10.98	32.93	49.39	6.71	100
3	4	24	13	3	44
	9.09	54.55	29.55	6.82	100
4	0	3	3	0	6
	0.00	50.00	50.00	0.00	100
Total	86	423	657	159	1,325
	6.49	31.92	49.58	12	100

Figure C.16: Politicization and Investment Frequency (Models in Table 2)



Note: Frequency of investment is coded as follows: 0 - "Never", 1 - "Rarely", 2 - "Few times a year", 3 - "Monthly", 4 - "Weekly", and 5 - "Daily."

Table C.6: Joint Distribution of Politicization and Investment Frequency (Observations in Model 5)

	Discuss policy with outside experts						
Politicization	Never	Rarely	Few times a year	Monthly	Weekly	Daily	Total
-4	0	0	3	1	0	0	4
Row Pct.	0.00	0.00	75.00	25.00	0.00	0.00	100
-3	1	4	3	1	3	0	12
	8.33	33.33	25.00	8.33	25.00	0.00	100
-2	0	4	11	1	6	2	24
	0.00	16.67	45.83	4.17	25.00	8.33	100
-1	5	11	27	18	18	7	86
	5.81	12.79	31.40	20.93	20.93	8.14	100
0	6	58	76	67	59	17	283
	2.12	20.49	26.86	23.67	20.85	6.01	100
1	10	39	75	63	40	9	236
	4.24	16.53	31.78	26.69	16.95	3.81	100
2	3	14	33	24	15	4	93
	3.23	15.05	35.48	25.81	16.13	4.30	100
3	1	7	5	6	3	2	24
	4.17	29.17	20.83	25.00	12.50	8.33	100
4	1	0	2	0	0	0	3
	33.33	0.00	66.67	0.00	0.00	0.00	100
Total	27	137	235	181	144	41	765
	3.53	17.91	30.72	23.66	18.82	5.36	100

Table C.7: Joint Distribution of Politicization and Investment Frequency (Observations in Model 6)

	Consult subject matter experts						
Politicization	Never	Rarely	Few times a year	Monthly	Weekly	Daily	Total
-4	0	1	1	1	1	0	4
Row Pct.	0.00	25.00	25.00	25.00	25.00	0.00	100
-3	4	2	3	1	2	0	12
	33.33	16.67	25.00	8.33	16.67	0.00	100
-2	5	6	5	5	2	1	24
	20.83	25.00	20.83	20.83	8.33	4.17	100
-1	5	17	32	19	9	4	86
	5.81	19.77	37.21	22.09	10.47	4.65	100
0	34	78	78	49	33	12	284
	11.97	27.46	27.46	17.25	11.62	4.23	100
1	27	63	62	43	35	6	236
	11.44	26.69	26.27	18.22	14.83	2.54	100
2	8	21	27	18	12	6	92
	8.70	22.83	29.35	19.57	13.04	6.52	100
3	5	6	5	2	5	1	24
	20.83	25.00	20.83	8.33	20.83	4.17	100
4	0	1	1	0	1	0	3
	0.00	33.33	33.33	0.00	33.33	0.00	100
Total	88	195	214	138	100	30	765
	11.5	25.49	27.97	18.04	13.07	3.92	100

Table C.8: Joint Distribution of Politicization and Investment Frequency (Observations in Model 7)

	Attend training or seminars				
Politicization	Never	Rarely	Few times a year	Monthly	Total
-4	0	1.00	2	1.00	4
Row Pct.	0.00	25.00	50.00	25.00	100
-3	1	2	7	2	12
	8.33	16.67	58.33	16.67	100
-2	0	6	15	3	24
	0.00	25.00	62.50	12.50	100
-1	2	23	47	14	86
	2.33	26.74	54.65	16.28	100
0	19	87.00	147	30.00	283
	6.71	30.74	51.94	10.60	100
1	15	75	122	24	236
	6.36	31.78	51.69	10.17	100
2	6	32	47	8	93
	6.45	34.41	50.54	8.60	100
3	1	13	7	3	24
	4.17	54.17	29.17	12.50	100
4	0	2	1	0	3
	0.00	66.67	33.33	0.00	100
Total	44	241	395	85	765
	5.75	31.50	51.63	11.11	100

C.5 Additional Discussion of Concept Measurement: Preference Divergence and Agency Politicization

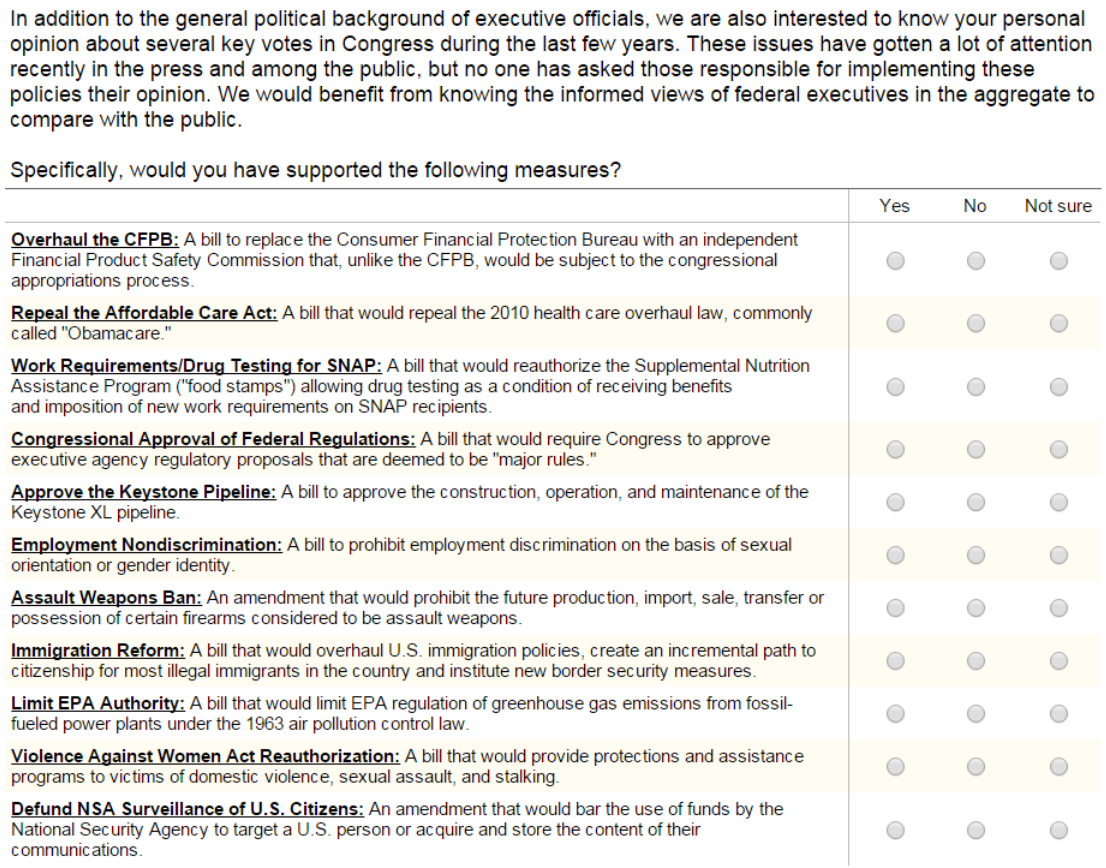
The measure of preference divergence is individual-level while the measure of politicization is individual-level perception of the relative influence of senior civil servants, not the influence of the individual senior civil servant answering the question, and political appointees in the agency. Respondents were not asked about their individual influence because they are less likely to give a truthful answer if they are not influential. A senior civil servant's policy influence will be correlated with their perception of the influence of

all senior civil servants for two reasons. First, the individual's experience is likely to be heavily weighted in their perception of all senior civil servants. Second, civil servants' policy preferences and, therefore, their preference divergence with appointees are correlated within agencies. One-way Analysis of Variance of individual ideal points and preference divergence by agency rejects the null hypothesis that mean ideology or mean divergence is equivalent across agencies ($p < .01$).

C.6 Ideal Point Estimates

Final passage or conference votes from the 113^{th} Congress that were used for "bridging" are HR 325, S 47, HR 1911, HR 2775, HR 2642, and HR 83. The estimates were computed using the `ideal` function in the `pscl` package version 1.4.9 and R version 3.2.1. The space was locally identified using a mean of 0 and variance of 1. Estimates are computed using 100,000 iterations thinned by 25 with the first 10,000 iterations used as "burn-in."

Figure C.17: Civil Servants' Positions on Congressional Measures



In addition to the general political background of executive officials, we are also interested to know your personal opinion about several key votes in Congress during the last few years. These issues have gotten a lot of attention recently in the press and among the public, but no one has asked those responsible for implementing these policies their opinion. We would benefit from knowing the informed views of federal executives in the aggregate to compare with the public.

Specifically, would you have supported the following measures?

	Yes	No	Not sure
Overhaul the CFPB: A bill to replace the Consumer Financial Protection Bureau with an independent Financial Product Safety Commission that, unlike the CFPB, would be subject to the congressional appropriations process.	○	○	○
Repeal the Affordable Care Act: A bill that would repeal the 2010 health care overhaul law, commonly called "Obamacare."	○	○	○
Work Requirements/Drug Testing for SNAP: A bill that would reauthorize the Supplemental Nutrition Assistance Program ("food stamps") allowing drug testing as a condition of receiving benefits and imposition of new work requirements on SNAP recipients.	○	○	○
Congressional Approval of Federal Regulations: A bill that would require Congress to approve executive agency regulatory proposals that are deemed to be "major rules."	○	○	○
Approve the Keystone Pipeline: A bill to approve the construction, operation, and maintenance of the Keystone XL pipeline.	○	○	○
Employment Nondiscrimination: A bill to prohibit employment discrimination on the basis of sexual orientation or gender identity.	○	○	○
Assault Weapons Ban: An amendment that would prohibit the future production, import, sale, transfer or possession of certain firearms considered to be assault weapons.	○	○	○
Immigration Reform: A bill that would overhaul U.S. immigration policies, create an incremental path to citizenship for most illegal immigrants in the country and institute new border security measures.	○	○	○
Limit EPA Authority: A bill that would limit EPA regulation of greenhouse gas emissions from fossil-fueled power plants under the 1963 air pollution control law.	○	○	○
Violence Against Women Act Reauthorization: A bill that would provide protections and assistance programs to victims of domestic violence, sexual assault, and stalking.	○	○	○
Defund NSA Surveillance of U.S. Citizens: An amendment that would bar the use of funds by the National Security Agency to target a U.S. person or acquire and store the content of their communications.	○	○	○

C.7 Controlling for the Value of Salary and Benefits

Table C.9 replicates models in Table 2 in the main text controlling for the value of salary and benefits to a civil servant rather than the value of promotion within the federal government or taking a job in the private sector. See Figure C.3 for question text.

Table C.9: Models of Intent to Exit, Effort, and Expertise Investment

Model	(C1)	(C2)	(C3)	(C4)	(C5)	(C6)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization	0.07^{**}	0.02	-0.09^{**}	-0.00	-0.09^{***}	-0.05^{**}
	(0.03)	(0.22)	(0.04)	(0.04)	(0.03)	(0.02)
Preference Divergence	0.01	1.06^{*}	0.08	0.05	-0.10^{*}	0.03
	(0.06)	(0.57)	(0.05)	(0.08)	(0.06)	(0.04)
Value Salary & Benefits	-0.08	-1.10^{***}	-0.12^{***}	0.00	-0.03	-0.04
	(0.05)	(0.41)	(0.04)	(0.05)	(0.05)	(0.03)
Value Policy Influence	-0.06	0.28	0.32^{***}	0.18^{***}	0.20^{***}	0.20^{***}
	(0.05)	(0.35)	(0.04)	(0.04)	(0.04)	(0.03)
Approached about a Job	0.36^{***}	3.48^{***}	0.12	0.14^{*}	0.05	0.10^{**}
	(0.09)	(0.68)	(0.08)	(0.08)	(0.08)	(0.05)
Agency-Specific Expertise	0.26	-4.09^{*}	-0.61^{*}	-0.16	-0.07	-0.30
	(0.36)	(2.08)	(0.34)	(0.34)	(0.33)	(0.22)
SES	0.15	2.78^{***}	0.03	-0.13	0.14	-0.01
	(0.10)	(0.66)	(0.08)	(0.09)	(0.09)	(0.06)
Agency Tenure	-0.01^{***}	0.09^{***}	0.00	0.00	0.00	0.00
	(0.005)	(0.03)	(0.003)	(0.004)	(0.004)	(0.002)
Frequency of Contact	0.00	0.71^{***}	0.17^{***}	0.09^{**}	-0.02	0.08^{***}
with Appointees	(0.04)	(0.24)	(0.03)	(0.04)	(0.03)	(0.02)
Eligible to Retire	0.80^{***}					
	(0.09)					
τ_1 (C1, C3-C5) & Con. (C2, C6)	-0.36	46.47^{***}	-0.93^{***}	-0.43^{**}	-1.12^{***}	-0.66^{***}
	(0.26)	(1.97)	(0.22)	(0.20)	(0.25)	(0.14)
τ_2	0.67^{***}		0.21	0.46^{**}	0.19	
	(0.26)		(0.23)	(0.20)	(0.25)	
τ_3	1.20^{***}		1.15^{***}	1.21^{***}	1.78^{***}	
	(0.26)		(0.22)	(0.20)	(0.26)	
τ_4			1.88^{***}	1.80^{***}		
			(0.21)	(0.21)		
τ_5			2.88^{***}	2.62^{***}		
			(0.22)	(0.22)		
N	712	755	767	767	767	765
N Clusters	159	160	161	160	161	160
R^2		0.13				0.16
Pct. Correctly Predicted	42%		35%	30%	52%	
Wald χ^2	105.63		212.40	48.70	41.40	

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test.
χ^2 tests significant at $p < .01$.
Models C1 and C3 - C5 are ordered probit models. Models C2 and C6 are OLS models.

C.8 Models of Investment Not in the Main Text

Table C.10 provides models of investment for the tasks not included in Table 2 in the main text. Controlling for the value of salary and benefits rather than the value of promotion

yields identical conclusions to the models in Table C.10.

Table C.10: Models of Expertise Investment

Model	(C7)	(C8)	(C9)
Dependent Variable	Read	Academic	Conferences
Politicization	0.00	0.02	0.00
(Std. Err.)	(0.04)	(0.04)	(0.03)
Preference Divergence	0.01	0.01	0.01
	(0.06)	(0.05)	(0.05)
Value Policy Influence	0.13***	0.30***	0.16***
	(0.04)	(0.04)	(0.04)
Value Pvt. Sector Job	0.06	0.00	0.07
	(0.04)	(0.04)	(0.05)
Value Gov't Promotion	−0.01	0.02	0.01
	(0.03)	(0.03)	(0.04)
Approached about a Job	0.06	0.11	0.01
	(0.08)	(0.09)	(0.09)
Agency-Specific Expertise	0.01	−0.42	0.12
	(0.36)	(0.33)	(0.38)
SES	0.24***	−0.02	0.14*
	(0.08)	(0.08)	(0.08)
Agency Tenure	0.00	0.00	0.01*
	(0.00)	(0.00)	(0.00)
Frequency of Contact	0.02	0.02	0.03
with Appointees	(0.04)	(0.03)	(0.03)
τ_1	−1.38***	−0.75***	−0.36*
	(0.23)	(0.21)	(0.21)
τ_2	−0.51**	0.24	0.88***
	(0.24)	(0.20)	(0.20)
τ_3	0.03	0.95***	2.46***
	(0.23)	(0.20)	(0.20)
τ_4	0.75***	1.65***	
	(0.23)	(0.21)	
τ_5	1.65***	2.53***	
	(0.24)	(0.22)	
N	763	763	765
N Clusters	161	161	161
Pct. Correctly Predicted	14%	21%	48%
Wald χ^2	29.82	83.72	32.68

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, ** $p < .05$, *** $p < .01$ in a two-sided test.
χ^2 tests significant at $p < .01$.
Models are ordered probit models.

C.9 Question Wording from the 2007-2008 Survey

This section provides screen shots of questions from the 2007-2008 survey used to replicate the models in the main text.

Figure C.18: Intent to Exit

Figure C.19: Perceptions of Relative Influence

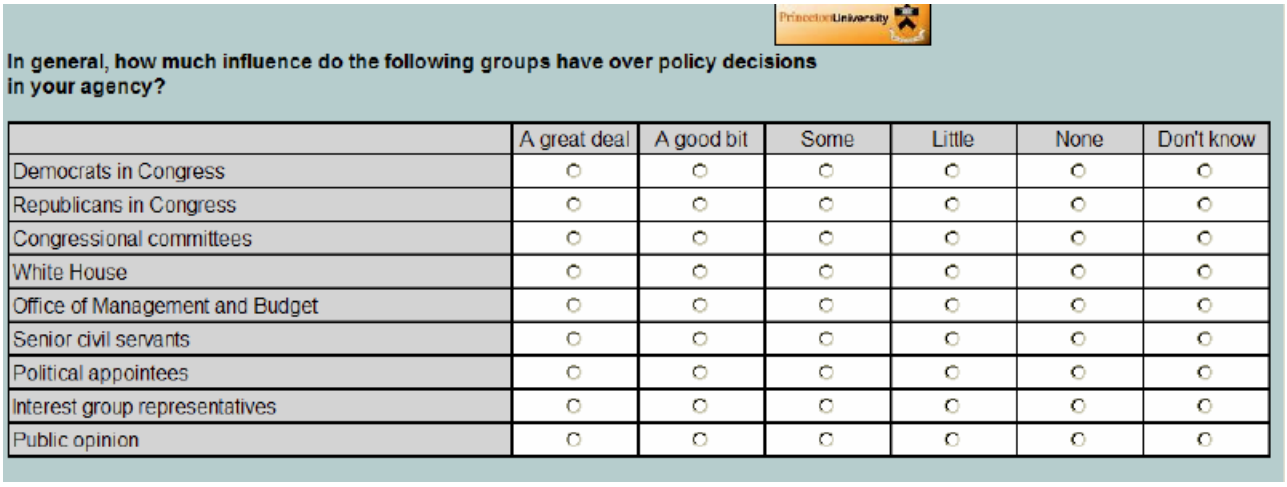
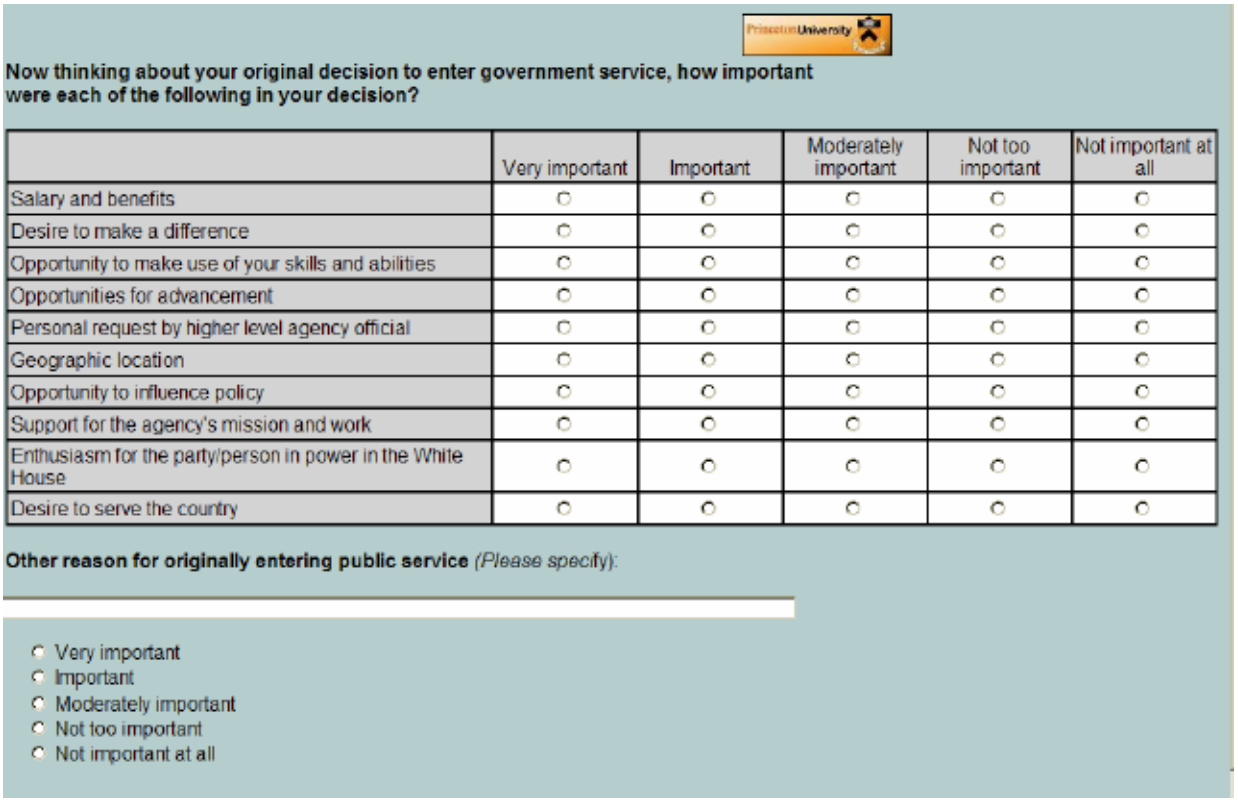


Figure C.20: Questions about Intrinsic Motivation



Now thinking about your original decision to enter government service, how important were each of the following in your decision?

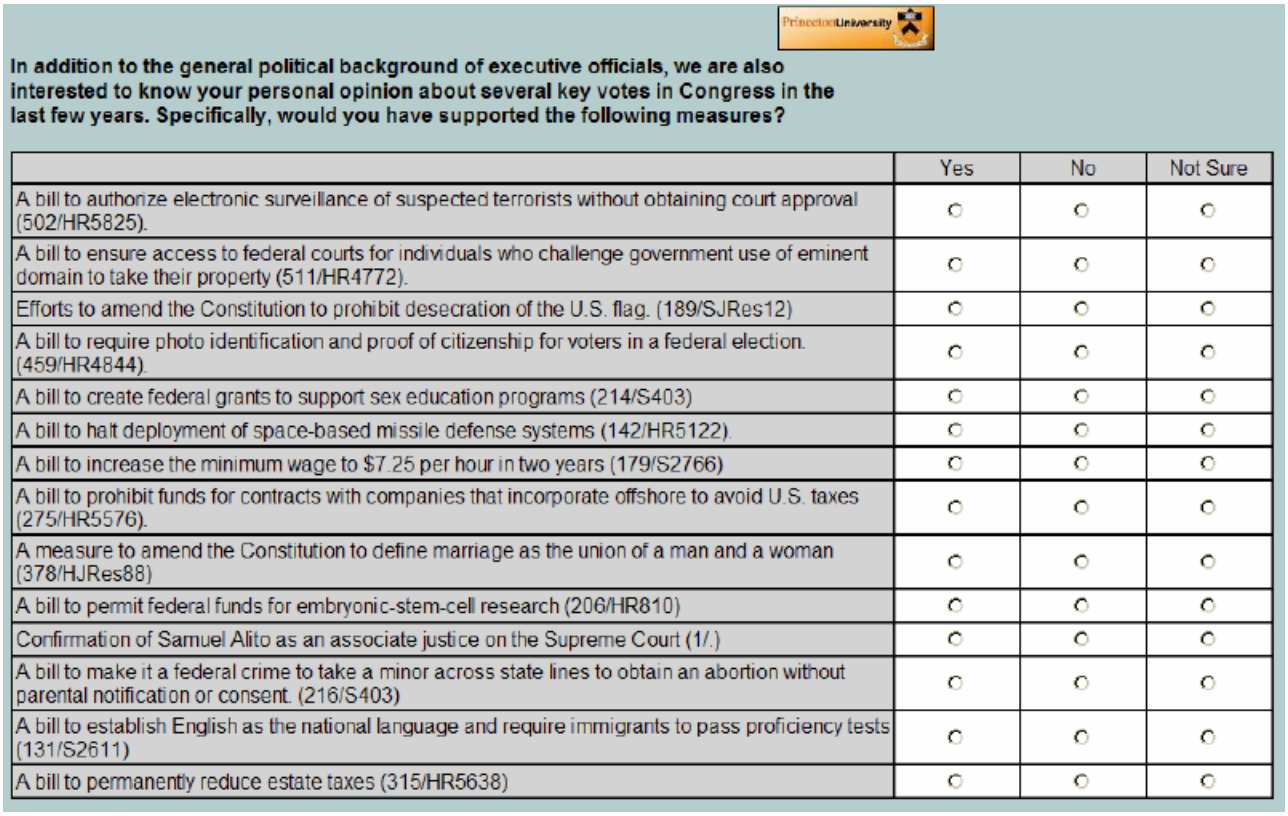
	Very important	Important	Moderately important	Not too important	Not important at all
Salary and benefits	○	○	○	○	○
Desire to make a difference	○	○	○	○	○
Opportunity to make use of your skills and abilities	○	○	○	○	○
Opportunities for advancement	○	○	○	○	○
Personal request by higher level agency official	○	○	○	○	○
Geographic location	○	○	○	○	○
Opportunity to influence policy	○	○	○	○	○
Support for the agency's mission and work	○	○	○	○	○
Enthusiasm for the party/person in power in the White House	○	○	○	○	○
Desire to serve the country	○	○	○	○	○

Other reason for originally entering public service *(Please specify)*:

○ Very important
○ Important
○ Moderately important
○ Not too important
○ Not important at all

The items in Figure C.20 asking about salary and benefits, opportunities to influence policy, and opportunities for advancement were used as controls in Table C.12.

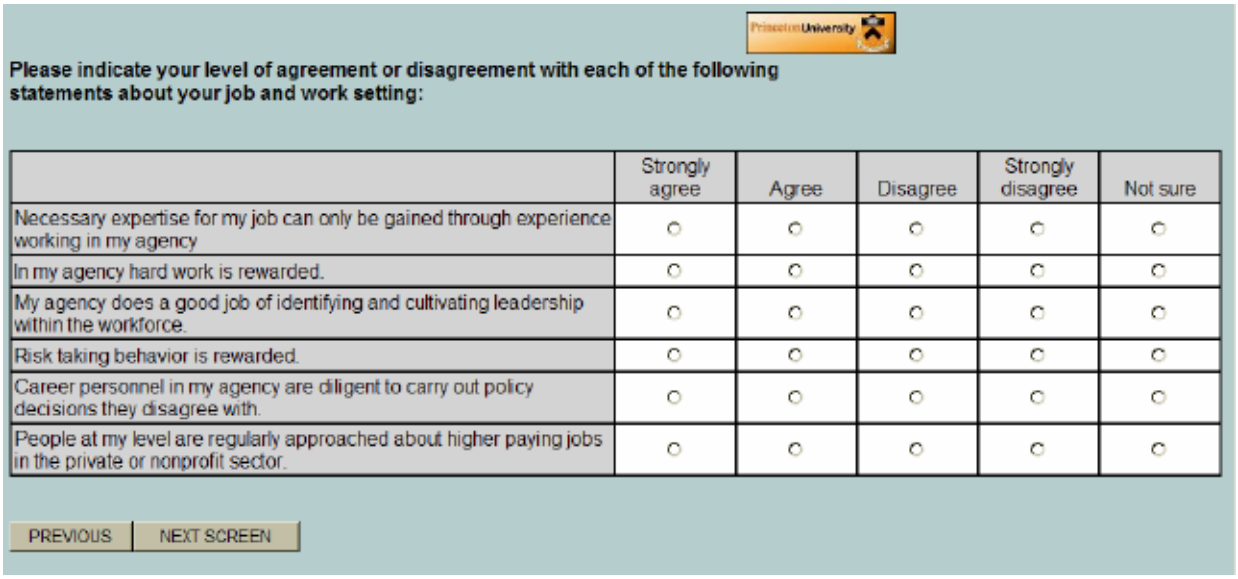
Figure C.21: Civil Servants' Positions on Congressional Measures



In addition to the general political background of executive officials, we are also interested to know your personal opinion about several key votes in Congress in the last few years. Specifically, would you have supported the following measures?

	Yes	No	Not Sure
A bill to authorize electronic surveillance of suspected terrorists without obtaining court approval (502/HR5825).	○	○	○
A bill to ensure access to federal courts for individuals who challenge government use of eminent domain to take their property (511/HR4772).	○	○	○
Efforts to amend the Constitution to prohibit desecration of the U.S. flag. (189/SJRes12)	○	○	○
A bill to require photo identification and proof of citizenship for voters in a federal election. (459/HR4844).	○	○	○
A bill to create federal grants to support sex education programs (214/S403)	○	○	○
A bill to halt deployment of space-based missile defense systems (142/HR5122).	○	○	○
A bill to increase the minimum wage to $7.25 per hour in two years (179/S2766)	○	○	○
A bill to prohibit funds for contracts with companies that incorporate offshore to avoid U.S. taxes (275/HR5576).	○	○	○
A measure to amend the Constitution to define marriage as the union of a man and a woman (378/HJRes88)	○	○	○
A bill to permit federal funds for embryonic-stem-cell research (206/HR810)	○	○	○
Confirmation of Samuel Alito as an associate justice on the Supreme Court (1/.)	○	○	○
A bill to make it a federal crime to take a minor across state lines to obtain an abortion without parental notification or consent. (216/S403)	○	○	○
A bill to establish English as the national language and require immigrants to pass proficiency tests (131/S2611)	○	○	○
A bill to permanently reduce estate taxes (315/HR5638)	○	○	○

Figure C.22: Agency Specific Expertise and Approached About a Job



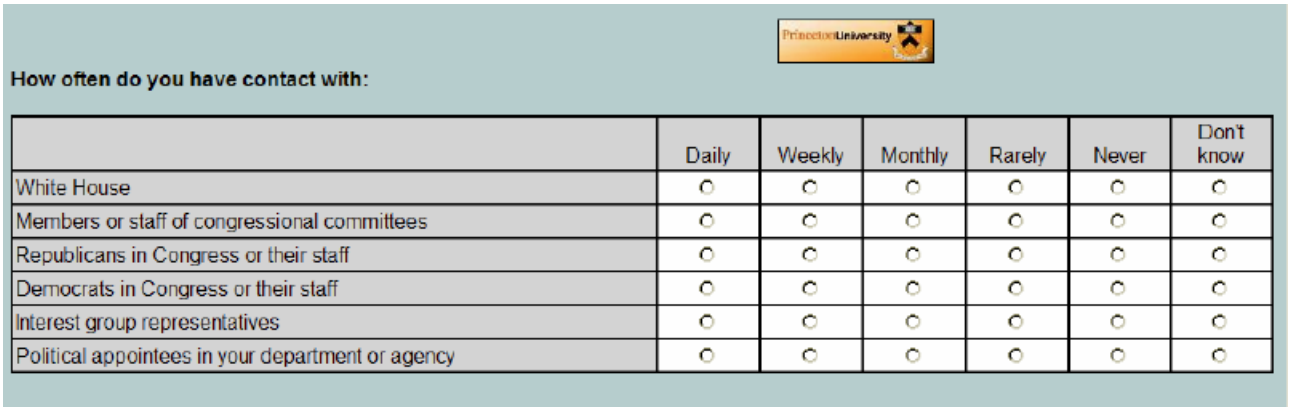
Please indicate your level of agreement or disagreement with each of the following statements about your job and work setting:

	Strongly agree	Agree	Disagree	Strongly disagree	Not sure
Necessary expertise for my job can only be gained through experience working in my agency	○	○	○	○	○
In my agency hard work is rewarded.	○	○	○	○	○
My agency does a good job of identifying and cultivating leadership within the workforce.	○	○	○	○	○
Risk taking behavior is rewarded.	○	○	○	○	○
Career personnel in my agency are diligent to carry out policy decisions they disagree with.	○	○	○	○	○
People at my level are regularly approached about higher paying jobs in the private or nonprofit sector.	○	○	○	○	○

PREVIOUS | NEXT SCREEN

The items in Figure C.22 asking whether necessary expertise can only be gained through on-the-job experience (agency-specific expertise) and how often people are approached about high paying jobs are used as controls in Table C.12.

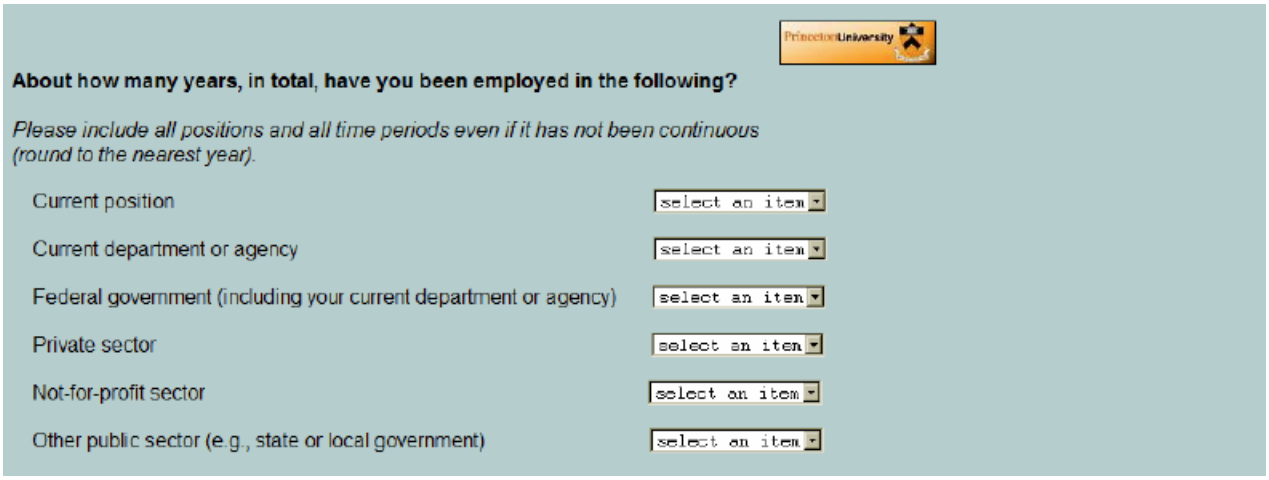
Figure C.23: Frequency of Contact with Appointees



How often do you have contact with:

	Daily	Weekly	Monthly	Rarely	Never	Don't know
White House	○	○	○	○	○	○
Members or staff of congressional committees	○	○	○	○	○	○
Republicans in Congress or their staff	○	○	○	○	○	○
Democrats in Congress or their staff	○	○	○	○	○	○
Interest group representatives	○	○	○	○	○	○
Political appointees in your department or agency	○	○	○	○	○	○

Figure C.24: Agency Tenure



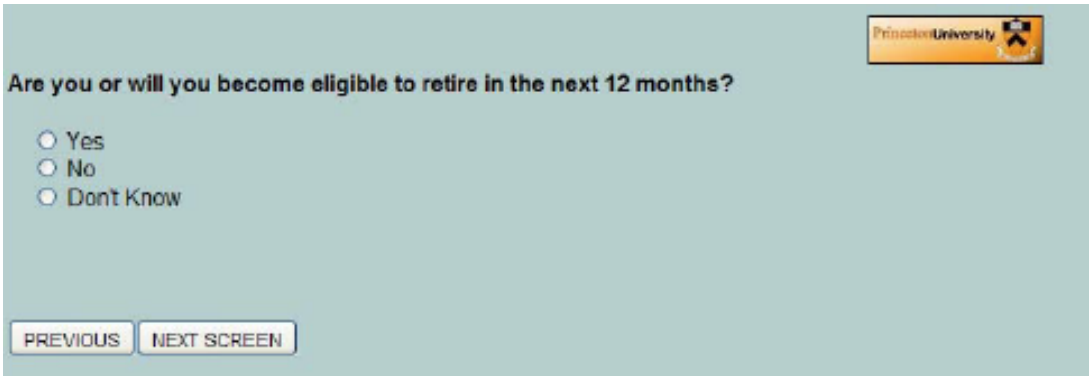
About how many years, in total, have you been employed in the following?

Please include all positions and all time periods even if it has not been continuous (round to the nearest year).

Current position	select an item
Current department or agency	select an item
Federal government (including your current department or agency)	select an item
Private sector	select an item
Not-for-profit sector	select an item
Other public sector (e.g., state or local government)	select an item

The item in Figure C.24 asking about tenure in the respondents current department or agency was used to measure agency tenure.

Figure C.25: Retirement Eligibility



C.10 Replication of Cross-Sectional Analysis using the 2007-2008 Survey

Table C.11 replicates models 1 & 2 from the main text using data from a survey of career and appointed senior government employees fielded in late 2007 and early 2008 (see Clinton et al. (2012) for details about the survey and estimation of ideal points). The 2007-2008 survey does not identify employees that work in Offices of the Secretary or the Office of the Attorney General, therefore, estimates of average appointee ideology only includes appointees that work in the same agency as the career respondent and there are fewer agencies that have a 15% response rate of political appointees with ideal points (which is the threshold applied in the main text to improve the reliability of the estimate of preference divergence). I also estimate models of preference divergence with President Bush because this allows inclusion of all respondents regardless of appointee response rate and whether the respondents' agency is categorized as "Other" in an executive department. These models better estimate preference divergence if appointees are attempting to faithfully implement the policy preferences of the president, rather than the appointees' personal policy preferences.

Overall, the ordered porbit models in Table C.11 provide additional evidence that there is a positive association between preference divergence and perceived politicization. While the estimated coefficient on preference divergence in model C10 is not sufficiently precise

to be distinguished from zero with a high degree of confidence, it is positive and would likely achieve statistical significance with a sample size similar to Model 1 in the main text. Model C11 provides evidence that perceived politicization increases at an increasing rate, similar to Model 2 in the main text. Finally, while model C13 does not provide evidence for a non-linear relationship, model C12 (similar to models in Table C.29) again shows a positive relationship between preference divergence (with the president) and perceived politicization.

Each ordered probit model in Table C.12 demonstrates a positive relationship between perceived politicization and intent to exit. Given that these data were collected during a Republican administration when, as shown below, the relationship between partisanship and politicization was inverted from the Obama Administration, these models provide convincing evidence that the cross sectional data capture the relevant temporal dynamics. Please note that questions measuring agency-specific expertise, intrinsic motivation, being approached about a job differ between the two surveys. There is also a slight difference in response categories for the question about exit intention. See Section C.9 of Appendix C for question wording.

C.11 Comparing the Two Surveys

The change in party control of the presidency between the two surveys allows me to analyze temporal dynamics of the relationships between preference divergence and perceived politicization and perceived politicization and civil servants' intent to exit. Broadly, the theory I present in the paper suggests that Democrats should be more likely to be excluded from policymaking during the Bush Administration and that Republicans should should be more likely to be excluded from policymaking during the Obama Administration. Therefore, Democratic civil servants should be more likely to perceive politicization during the Bush Administration and Republicans should be more likely to perceive politicization during the Obama Administration. Demonstrating this inversion of the relationship between

Table C.11: Replication of Models of Politicization

Model	(C10)	(C11)	(C12)	(C13)
Dependent Variable	Pol.	Pol.	Pol.	Pol.
Preference Divergence	0.09	−0.36		
(Std. Error)	(0.09)	(0.25)		
Divergence^2		0.22*		
		(0.13)		
Divergence from Pres. Bush			0.12***	0.02
			(0.04)	(0.14)
Divergence from Pres. Bush^2				0.05
				(0.06)
SES	−0.01	−0.02	0.04	0.04
	(0.08)	(0.08)	(0.05)	(0.05)
Agency Tenure	0.00	0.00	0.00	0.00
	(0.004)	(0.004)	(0.002)	(0.002)
Frequency of Contact	0.26***	0.26***	0.31***	0.31***
with Appointees	(0.03)	(0.03)	(0.02)	(0.02)
τ_1	−1.76***	−1.9***	−1.65***	−1.68***
	(0.17)	(0.18)	(0.12)	(0.13)
τ_2	−1.64***	−1.81***	−1.32***	−1.35***
	(0.17)	(0.18)	(0.12)	(0.12)
τ_3	−1.01***	−1.17***	−0.76***	−0.79***
	(0.14)	(0.14)	(0.10)	(0.11)
τ_4	−0.52***	−0.68***	−0.23***	−0.26***
	(0.11)	(0.11)	(0.09)	(0.10)
τ_5	1.07***	0.91***	1.29***	1.26***
	(0.10)	(0.11)	(0.09)	(0.10)
τ_6	1.93***	1.78***	2.17***	2.14***
	(0.11)	(0.11)	(0.09)	(0.10)
τ_7	2.71***	2.56***	3.02***	2.99***
	(0.13)	(0.14)	(0.11)	(0.12)
τ_8	3.44***	3.31***	3.73***	3.70***
	(0.18)	(0.21)	(0.15)	(0.16)
N	709	709	1,737	1,737
N Clusters	60	60	201	201
Pct. Correctly Predicted	50%	49%	47%	47%
Wald χ^2	93.85	99.35	234.18	238.01

Standard errors clustered on agencies in parentheses.
* significant at $p \leq .10$, ** $p < .05$, *** $p < .01$ in a two-sided test.
χ^2 tests significant at $p < .01$.
p = 0.10 for the coef. on Divergence^2

partisanship and politicization is sufficient to demonstrate the temporal dynamics I argue in the paper do exist.

The distributions of perceived politicization among Republicans and Democrats, including leaners, for each survey are plotted in Figures C.26 and C.27, respectively. The pro-

Table C.12: Replication of Models of Exit

Model	(C14)	(C15)	(C16)	(C17)
Dependent Variable	Exit	Exit	Exit	Exit
Politicization	0.11**	0.10**	0.10***	0.10***
(Std. Error)	(0.05)	(0.05)	(0.03)	(0.03)
Preference Divergence	−0.05	−0.05		
	(0.09)	(0.09)		
Divergence from Pres. Bush			−0.05	−0.05
			(0.05)	(0.06)
Value Policy	−0.04	−0.03	0.01	0.01
	(0.04)	(0.04)	(0.03)	(0.03)
Value Salary & Benefits	−0.07		−0.05	
	(0.06)		(0.04)	
Value Advancement		−0.03		−0.03
		(0.05)		(0.04)
SES	−0.06	−0.06	0.02	0.02
	(0.15)	(0.15)	(0.09)	(0.09)
Agency Tenure	−0.01**	−0.01**	−0.01***	−0.01***
	(0.01)	(0.01)	(0.003)	(0.003)
Frequency of Contact	−0.02	−0.01	0.02	0.02
with Appointees	(0.04)	(0.04)	(0.03)	(0.03)
Agency-Specific Exp.	−0.10	−0.10	−0.09**	−0.09**
	(0.08)	(0.08)	(0.04)	(0.04)
Often Approached about a Job	0.03	0.03	0.04	0.04
	(0.06)	(0.06)	(0.04)	(0.04)
Eligible to Retire	0.84***	0.83***	0.89***	0.89***
	(0.13)	(0.14)	(0.07)	(0.08)
τ_1	−0.27	−0.14	0.14	0.22
	(0.22)	(0.18)	(0.20)	(0.19)
τ_2	0.21	0.34*	0.62***	0.69***
	(0.22)	(0.19)	(0.20)	(0.19)
τ_3	0.84***	0.97***	1.24***	1.32***
	(0.24)	(0.20)	(0.21)	(0.19)
N	524	525	1,275	1,278
N Clusters	55	55	182	182
Pct. Correctly Predicted	49%	50%	53%	53%
Wald χ^2	74.12	94.91	195.87	195.68

Standard errors clustered on agencies in parentheses.
* significant at $p < .10$, ** $p < .05$, *** $p < .01$ in a two-sided test.
χ^2 tests significant at $p < .01$.

portion of Republicans and Democrats that perceive politicization of one increase from 2007-2008 to 2014; however, the proportion of Republicans that perceive politicization of two or greater increases while the proportion of Democrats declines slightly. The distributions of perceived politicization among Republicans across surveys, among Democrats across surveys, and among Republicans and Democrats within each survey are statistically

different.[1]

Overall, the differences among the distributions demonstrates that, while there is a general increase in perceived politicization from 2007-2008 to 2014, the increase is greater among Republicans. Furthermore, the Ordinary Least Squares models (C18, C19, C21, and C22) and ordered probit models (C20 and C23) in Table C.13 show that the directions of the relationships between partisanship and preference divergence, preference divergence with the president, and perceived polarization are opposite in 2007-2008 and 2014.[2] (Republicans and Independents who lean Republican are coded 1, Independents are coded 0, and Democrats and Independents who lean Democrat are coded -1.) Republicans and those who lean Republican have less divergent preferences, on average, and are less likely to perceive politicization during the Bush Administration than during the Obama Administration. On the other hand, Democrats and those who lean Democrat have more divergent preferences, on average, and are more likely to perceive politicization during the Bush Administration than during the Obama Administration. Coupled with the relationships between preference divergence and politicization and politicization and intent to exit that exist in both cross sectional data sets, the change in the relationship between these key measures and partisanship across the surveys clearly demonstrates the temporal dynamic of politicization.

Some individuals completed both the 2007-2008 and 2014 surveys, providing the opportunity for analysis of changes in individual preferences overtime. Measures of intrinsic motivation, agency-specific expertise, and whether a respondent was approached about a job

[1]Tests of independence for each combination of distributions gives $p < 0.01$ comparing Republicans in 2007-2008 to Republicans in 2014 and comparing Democrats in 2007-2008 to Democrats in 2014. The χ^2 test of independence gives $p < 0.03$ comparing Republicans to Democrats in 2007-2008 and comparing Republicans to Democrats in 2014. I collapsed politicization of greater than 2 and less than -2 into 2 and -2, respectively, to prevent the χ^2 tests from being invalid due to small cell size.

[2]I use a measure of preference divergence based on "votes" of bureaucrats from both surveys so that the measure of preference divergence is on the same scale across surveys. I do not include appointees in the Offices of the Secretary or the Office of the Attorney General in average of ideal points of political appointees to ensure the measures of divergence are comparable across surveys. I continue to exclude cases with a response rate for appointees with ideal points of less than 15% and respondents that selected "Other" as their workplace.

Figure C.26: Distributions of Perceived Politicization Among Republicans

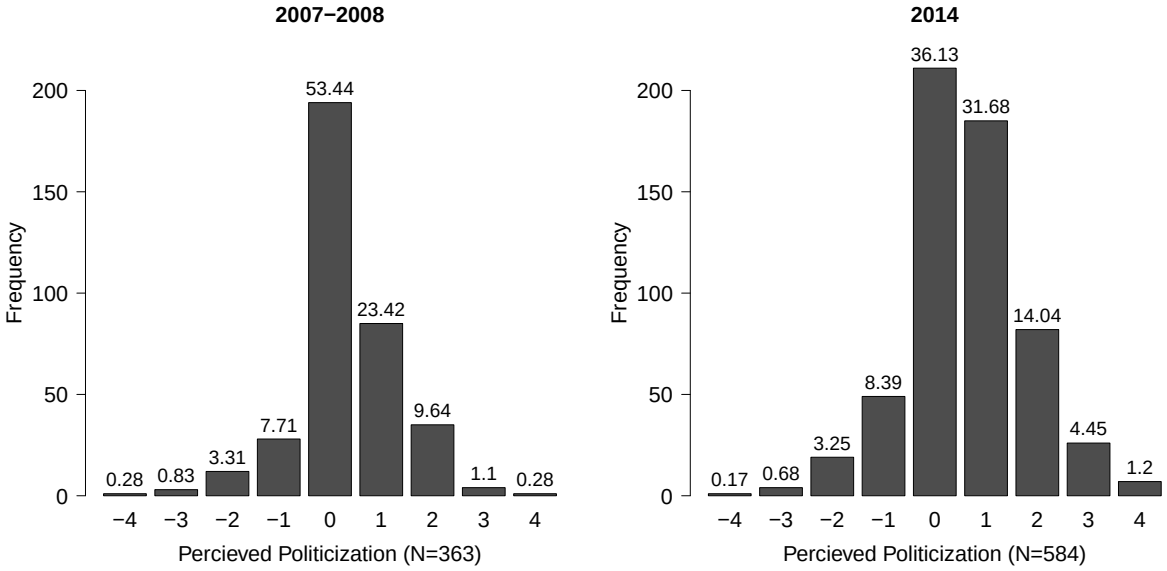
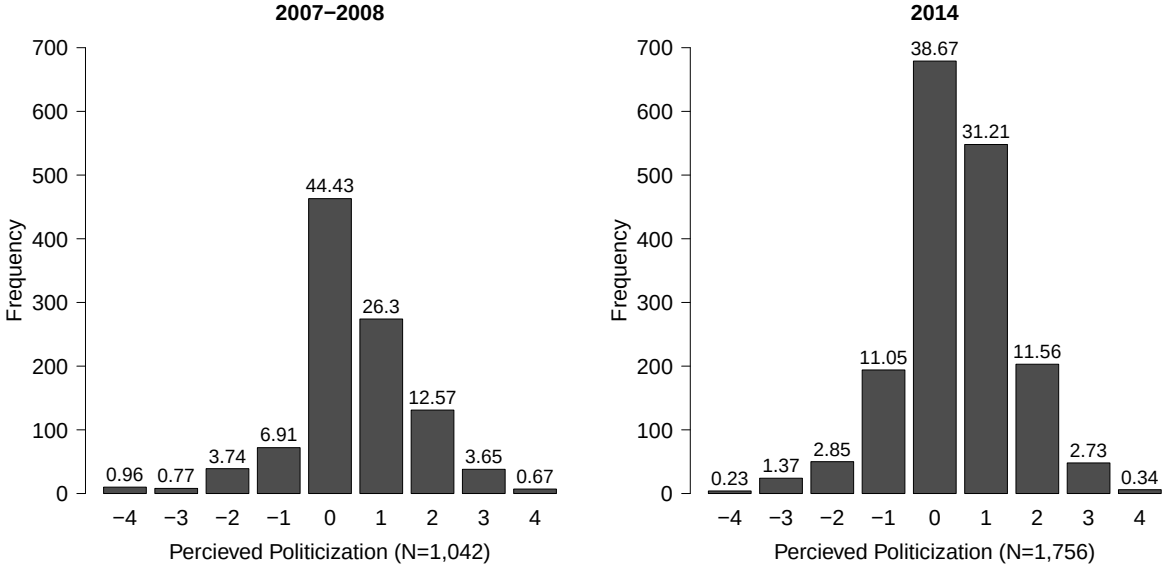


Figure C.27: Distributions of Perceived Politicization Among Democrats



are omitted because these questions differ between the two surveys. I also omitted agency tenure because it would be constant for respondents who remained in the same agency or negative for respondents who moved to another agency. I used sets of questions asking respondents to "vote" on certain bills considered by the 109th and 113th Congresses to

estimate ideal points for survey respondents, members of Congress, President George W. Bush, and President Obama on the same scale to provide estimates of preference divergence that are comparable across time. I do not place any restriction on appointee response rate for ideal points to limit loss of observations; however, respondents whose workplace is "Other" on either survey are omitted in models using preference divergence based on appointee averages.

Individual-level first-difference ordered probit models are provided in Table C.14. While the sample sizes are too small to provide much statistical power, the coefficients on the key independent variables are generally correctly signed. The coefficients on change in preference divergence are positive in models C25-C27 and the coefficients on politicization are negative in models C28 and C29. To be clear, this evidence is suggestive but lacks statistical support. First, the χ^2 tests for models C24 - C28 are not statistically significant; therefore, I cannot reject the null hypothesis that all of the coefficients are equal to zero. It is particulary difficult to find evidence of a relationship between politicization and exit using this data because respondents who remain in public service across administrations are likely to either not experience politicization or, if they do, to be the least sensitive to politicization and least likely to exit. This limited sensitivity is reflected in the limited change in exit intention among respondents that took both surveys.

Table C.13: Relationships with Party Identification Across Surveys

Model	(C18)	(C19)	(C20)	(C21)	(C22)	(C23)
Survey		2007-2008			2014	
Dependent Variable	Div.	Div. Pres.	Pol.	Div.	Div. Pres.	Pol.
Party Identification	-0.16^{***}	-0.64^{***}	-0.06^{**}	0.36^{***}	0.60^{***}	0.08^{***}
(Std. Error)	(0.05)	(0.02)	(0.03)	(0.04)	(0.01)	(0.03)
τ_1 (C20, C23) & Con.	0.84^{***}	1.44^{***}	-2.43^{***}	0.90^{***}	1.11^{***}	-2.80^{***}
	(0.04)	(0.02)	(0.11)	(0.04)	(0.01)	(0.11)
τ_2			-2.17^{***}			-2.20^{***}
			(0.09)			(0.08)
τ_3			-1.68^{***}			-1.73^{***}
			(0.07)			(0.06)
τ_4			-1.19^{***}			-1.08^{***}
			(0.05)			(0.05)
τ_5			0.23^{***}			0.02
			(0.04)			(0.04)
τ_6			1.08^{***}			0.93^{***}
			(0.04)			(0.04)
τ_7			1.87^{***}			1.72^{***}
			(0.06)			(0.06)
τ_8			2.55^{***}			2.50^{***}
			(0.13)			(0.10)
N	851	1,986	1,918	1,198	2,769	2,778
N Clusters	70	208	205	94	227	227
R^2	0.04	0.43		0.22	0.51	
Pct. Correctly Predicted			47%			37%
Wald χ^2			4.40			9.42

Standard errors clustered on agencies in parentheses.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test.
χ^2 tests significant at $p < .05$.

Table C.14: Individual Level First Difference Models

Model	(C24)	(C25)	(C26)	(C27)	(C28)	(C29)
Dependent Variable	Pol.	Pol.	Pol.	Pol.	Exit	Exit
Δ Politicization					−0.10	−0.06
					(0.11)	(0.07)
Δ Pref. Div.	−0.06	−0.03			0.01	
	(0.14)	(0.14)			(0.19)	
Δ Pref. Div.^{2}		0.11				
		(0.13)				
Δ Pref. Div. from Pres.			0.03	0.03		0.13**
			(0.05)	(0.05)		(0.06)
Δ Pref. Div. from Pres.^{2}				0.00		
				(0.04)		
Δ SES	−0.09	−0.07	0.20	0.20	0.44*	0.19
	(0.24)	(0.25)	(0.17)	(0.17)	(0.23)	(0.17)
Δ Freq. Contact w. Appointees	−0.08	−0.09	0.01	0.01	−0.21	0.03
	(0.16)	(0.16)	(0.07)	(0.07)	(0.18)	(0.07)
Δ Retirement Eligibility					0.15	0.49***
					(0.32)	(0.17)
τ_1	−2.23***	−2.16***	−2.58***	−2.58***	−2.15***	−2.08***
	(0.37)	(0.39)	(0.34)	(0.35)	(0.43)	(0.28)
τ_2	−1.31***	−1.23***	−2.33***	−2.34***	−1.40***	−1.79***
	(0.22)	(0.25)	(0.26)	(0.28)	(0.29)	(0.23)
τ_3	−0.40**	−0.32	−1.45***	−1.46***	0.14	−1.16***
	(0.16)	(0.19)	(0.14)	(0.18)	(0.24)	(0.16)
τ_4	0.37**	0.46**	−0.57***	−0.58***	1.24***	0.09
	(0.16)	(0.19)	(0.11)	(0.14)	(0.27)	(0.13)
τ_5	1.23***	1.33***	0.41***	0.40***	1.32***	1.02***
	(0.20)	(0.23)	(0.10)	(0.14)	(0.27)	(0.15)
τ_6	1.93***	2.02***	1.22***	1.21***		1.39***
	(0.29)	(0.34)	(0.12)	(0.15)		(0.17)
τ_7			1.88***	1.87***		
			(0.19)	(0.21)		
N	73	73	198	198	62	171
Wald χ^2	0.67	1.84	1.64	1.64	7.66	17.22

Robust standard errors in parentheses.
* significant at $p < .10$, ** $p < .05$, *** $p < .01$ in a two-sided test.
χ^2 tests significant at $p < .01$ for model C29 only.

C.12 Partisan Response Rates to the 2014 Survey on the Future of Government Service

A general concern in survey research is that respondents select into the survey via a mechanism that causes the sample to be unrepresentative of the population with respect to the measures of interest. With regard to my findings, a specific concern is that respondents in politicized agencies take the survey to express their dissatisfaction with their work

environment, resulting in a sample that experiences greater politicization and is more dissatisfied, on average, than the population.

In terms of partisanship, Republicans are more likely than Democrats to have divergent preferences and, therefore, to perceive that their agency is politicized in a Democratic administration. Therefore, the selection concern is that Republicans are more likely to respond to the survey than Democrats. Comparing partisanship in the population to partisanship in the sample, I do not find evidence that the distribution of partisanship among respondents is substantively different from the target population. There is mixed statistical evidence indicating that Democrats are slightly more likely to respond than Republicans.

A private firm was provided contact information for the target population to identify their partisanship. Of the 14,698 individuals in the target population, 6,855 (47%) were determined to be Republican, Democrat, or unaffiliated (i.e., independent). The firm labeled individuals as "Inferred Democrat" if they voted more times in a Democratic primary than a Republican primary between 2000 and 2013. If no primary voting history exists, individuals are labeled an "Inferred Democrat" if they donated to Democratic or liberal organizations including groups that are pro-choice or support "Obamacare." Individuals are labeled "Inferred Republican" if they voted more times in a Republican primary than a Democratic primary between 2000 and 2013. If no primary voting history exists, individuals are labeled an "Inferred Republican" if they donated to Republican or conservative organizations including groups that are pro-life, oppose "Obamacare," or oppose gun control.

Table C.15 contains the frequency of each categorization by the private firm and the self-reported party identification of survey respondents with percentages for each row. Eighty-nine percent of respondents identified as Democrat by the private firm self-identify as a Democrat or leaning Democrat. Similarly, 78 percent of the respondents identified as "Inferred Democrat" by the private firm self-identify as a Democrat or leaning Democrat. Identification of Republicans is less accurate. Seventy percent of the respondents identi-

Table C.15: Self-Reported Partisanship versus Private Firm Categorization

	Private Firm					
Self-Reported	Dem.	Inferred Dem.	Ind.	Inferred Rep.	Rep.	Total
Democrat	499	184	66	31	13	793
Column Pct.	82.89	66.43	23.24	19.25	12.38	55.49
Lean Democrat	39	32	70	8	4	153
	6.48	11.55	24.65	4.97	3.81	10.71
Independent	26	32	77	34	14	183
	4.32	11.55	27.11	21.12	13.33	12.81
Lean Republican	10	9	24	23	14	80
	1.66	3.25	8.45	14.29	13.33	5.6
Republican	14	12	36	61	59	182
	2.33	4.33	12.68	37.89	56.19	12.74
Don't know	14	8	11	4	1	38
	2.33	2.89	3.87	2.48	0.95	2.66
Total	602	277	284	161	105	1,429

fied as Republican by the private firm self-identify as a Republican or leaning Republican. However, only 52 percent of the respondents identified as "Inferred Republican" by the private firm self-identify as a Republican or leaning Republican. Independents as identified by the private firm are more likely to identify as partisan, particularly as a Democrat or leaning Democrat, than independent.

Table C.16 contains the response rate for each category identified by the private firm. The proportions of Democrats, Republicans, and Inferred Republicans differ only slightly among respondents and non-respondents while Inferred Democrats are slightly over-represented and independents are slightly under-represented among respondents. While these difference are sufficient to make the distributions of partisanship among respondents and non-respondents statistically distinguishable using a χ^2 test of independence ($Pr(\chi^2 > \widehat{\chi}^2) < 0.01$), it is difficult to draw a conclusion about what this difference means for partisan selection into the survey given the large proportion of "Independents" that self-identify as Democrat or leaning Democrat in Table C.15. Due to the high classification error rate among independents, I also analyzed the distribution of partisanship excluding indepen-

dents. As shown in the right half of Table C.16, there is little substantive difference in the distribution of partisanship among respondents and the target population. Omitting the problematic category of independents does not materially reduce the confidence that the distribution of partisanship is statistically distinguishable among respondents and non-respondents ($Pr(\chi^2 > \widehat{\chi}^2) = 0.02$). If independents are omitted and "inferred" partisans are combined with partisans ($Pr(\chi^2 > \widehat{\chi}^2) = 0.44$) or "inferred" partisans are also omitted ($Pr(\chi^2 > \widehat{\chi}^2) = 0.90$), the distributions are not statistically distinguishable.

In sum, the distributions of partisanship among respondents and the target population are not substantively different. If there is a selection effect based on partisanship, the statistical evidence suggests it is Democrats who are over-represented among survey respondents. Given that Democrats are less likely to perceive partisanship, any selection bias should create a sample that experiences less politicization, on average, than the population.

Table C.16: Response Rate by Partisanship

	Responded			**Responded**		
Partisanship	No	Yes	Total	No	Yes	Total
Democrat	2,138	711	2,849	2,138	711	2,849
	41.52	41.68	41.56	54.2	52.01	53.63
Inferred Dem.	809	327	1,136	809	327	1,136
	15.71	19.17	16.57	20.51	23.92	21.39
Independent	1,204	339	1,543			
	23.38	19.87	22.51			
Inferred Rep.	595	197	792	595	197	792
	11.56	11.55	11.55	15.08	14.41	14.91
Republican	403	132	535	403	132	535
	7.83	7.74	7.8	10.22	9.66	10.07
Total	5,149	1,706	6,855	3,945	1,367	5,312

C.13 The Usefulness of Expertise: Agency and Position Characteristics

The expertise needed to be competent varies significantly across jobs in the federal government. This may be due to differences in the missions of agencies or differences in

specific positions. If a task is not useful for acquiring the expertise needed to perform civil servants' jobs at their agency, then civil servants should report completing the task infrequently regardless of politicization. Identifying expertise that is useful across all positions and agencies or subsetting agencies and positions to isolate cases for which a given investment task is useful are challenges to measuring expertise investment, and, therefore, to measuring the effect of politicization on expertise investment. In this section, I isolate cases by position and agency mission to control for variation in the usefulness of expertise. I find evidence that isolating cases where expertise should be more useful can reveal relationships between politicization and investment behavior that are not evident in the pooled analysis.

C.13.1 Position: Rulemakers

The survey asked respondents to identify whether their job involved "[d]eveloping Notices of Proposed Rulemaking, summarizing related comments, writing final rules." Rulemaking is the process through which civil servants proscribe and implement policy that has the force of law under authority delegated in statute. Subsetting the data to civil servants involved in rulemaking isolates positions that require expertise needed to formulate policy at each agency, which may isolate particular types of expertise that are not useful for all civil servants. For example, Table C.17 shows that rulemakers are more likely than other civil servants to atttend industry or trade conferences at least a few times per year. Specifically, 60% of rulemakers report that they attend industry or trade conferences at least a few times a year, while 43% of other civil servants report that they attend with the same frequency. The difference in proportions is statistically significant at the 95% level of confidence.

Table C.17: Response Rate by Partisanship

	Never	Rarely	Few times per year	Monthly	Weekly	Daily	Total
	Read professional or trade journals						
Others	22	104	161	250	255	147	939
Row Pct.	2.34	11.08	17.15	26.62	27.16	15.65	100
Rulemakers	9	33	69	113	142	100	466
	1.93	7.08	14.81	24.25	30.47	21.46	100
Total	31	137	230	363	397	247	1,405
	Discuss policy with outside experts						
Others	62	213	289	211	128	35	938
	6.61	22.71	30.81	22.49	13.65	3.73	100
Rulemakers	13	49	136	121	111	37	467
	2.78	10.49	29.12	25.91	23.77	7.92	100
Total	75	262	425	332	239	72	1,405
	Consult subject matter experts						
Others	142	268	265	138	104	23	940
	15.11	28.51	28.19	14.68	11.06	2.45	100
Rulemakers	40	110	137	103	57	20	467
	8.57	23.55	29.34	22.06	12.21	4.28	100
Total	182	378	402	241	161	43	1,407
	Conduct or read academic research						
Others	70	168	251	208	175	62	934
	7.49	17.99	26.87	22.27	18.74	6.64	100
Rulemakers	17	82	104	114	109	42	468
	3.63	17.52	22.22	24.36	23.29	8.97	100
Total	87	250	355	322	284	104	1,402
	Attend training or seminars						
Others	78	300	459	102			939
	8.31	31.95	48.88	10.86			100
Rulemakers	22	135	246	66			469
	4.69	28.78	52.45	14.07			100
Total	100	435	705	168			1,408
	Attend industry or trade conferences						
Others	141	397	364	38			940
	15	42.23	38.72	4.04			100
Rulemakers	42	143	246	37			468
	8.97	30.56	52.56	7.91			100
Total	183	540	610	75			1,408

A χ^2 test finds that the distributions of investment frequency differs between rulemakers and others ($p < 0.02$). Non-response to the question asking whether a respondent is involved in rulemaking reduces the sample size from number of respondents in Figure C.10.

Table C.18 shows models of investment for rulemakers. Politicization is associated with less frequent attendance of industry and trade conferences (Model C34) among rulemakers, as evidenced by the negative coefficient on politicization that is distinguishable from zero with moderate confidence, despite the significant decrease in the number of observations. Model C9 in Table C.10 shows that the coefficient on politicization rounds to zero when the same model is estimated on the full sample. Similarly, 68% of rulemakers contact subject matter experts at least a few times a year compared to 56% of other civil servants, and the difference in proportions is statistically significant at the 95% level of confidence. The coefficient on politicization is negative and distinguishable from zero with a high degree of confidence if the dependent variable is frequency of consulting subject matter experts (Model C31), but rounds to zero when the same model is estimated on the full sample in Model 6 in the main text. Looking at the other tasks, except discussing policy with outside experts, the difference in the proportions of rulemakers and non-rulemakers that complete the task at least a few times a year is less than 7%. While the porportion of rulemakers who report discussing policy with outside experts at least monthly is 16 percentage points higher than among other civil servants, 70% of other civil servants report that they have such discussions at least a few times a year, which suggests discussions with outside experts are important for both groups.

The patterns in Table C.18 are replicated if the effect of politicization is conditioned on whether the respondent is a rulemaker (Table C.19). On average, rulemakers are more likely to discuss policy with outside experts, consult subject matter experts, and attend industry or trade conference as evidenced by the statistically significant coefficients on the rulemaker indicator variable. The effect of politicization is negative among rulemakers for consulting subject matter experts and attending industry or trade conferences, and coefficients on the interaction between rulemaker and politicization are statistically distinguishable from zero with a high degree of confidence in models when the frequency of completing these two investment tasks are the dependent variables.

Overall, the analysis in this section provides suggestive evidence that consulting subject matter experts and attending industry and trade conferences are useful tasks for rulemakers to build expertise, but less important for other civil servants. This explains why models of investment (Table C.18) estimated using only rulemakers or conditioning the effect of politicization on whether the respondent is a rulemaker (Table C.19) finds that higher perceived levels of politicization are associated with less frequent investment, while models estimated on all respondents (Tables C.10 and Table 2 in the main text) find no relationship.

Model C35 is a factor score estimated using all investment tasks and among rulemakers. Factor loadings range from 0.50 to 0.68 with an Eigen value of 2.02 on the first factor and 0.30 on the second factor. This suggests a single underlying dimension among all of these behaviors among rulemakers. The coefficient on politicization is negative and distinguishable from zero with a moderate degree of confidence. If the restriction on appointee response rate is eliminated to increase the sample size, the coefficient is statistically significant at the 90% level of confidence using a one-tailed test. While the usefulness of tasks for building expertise may vary, this models suggests that increased politicization is negatively associated with this measure of latent expertise investment among rulemakers.

Figure C.28: Distribution of Investment by Civil Servants involved in Rulemaking (All Observations)

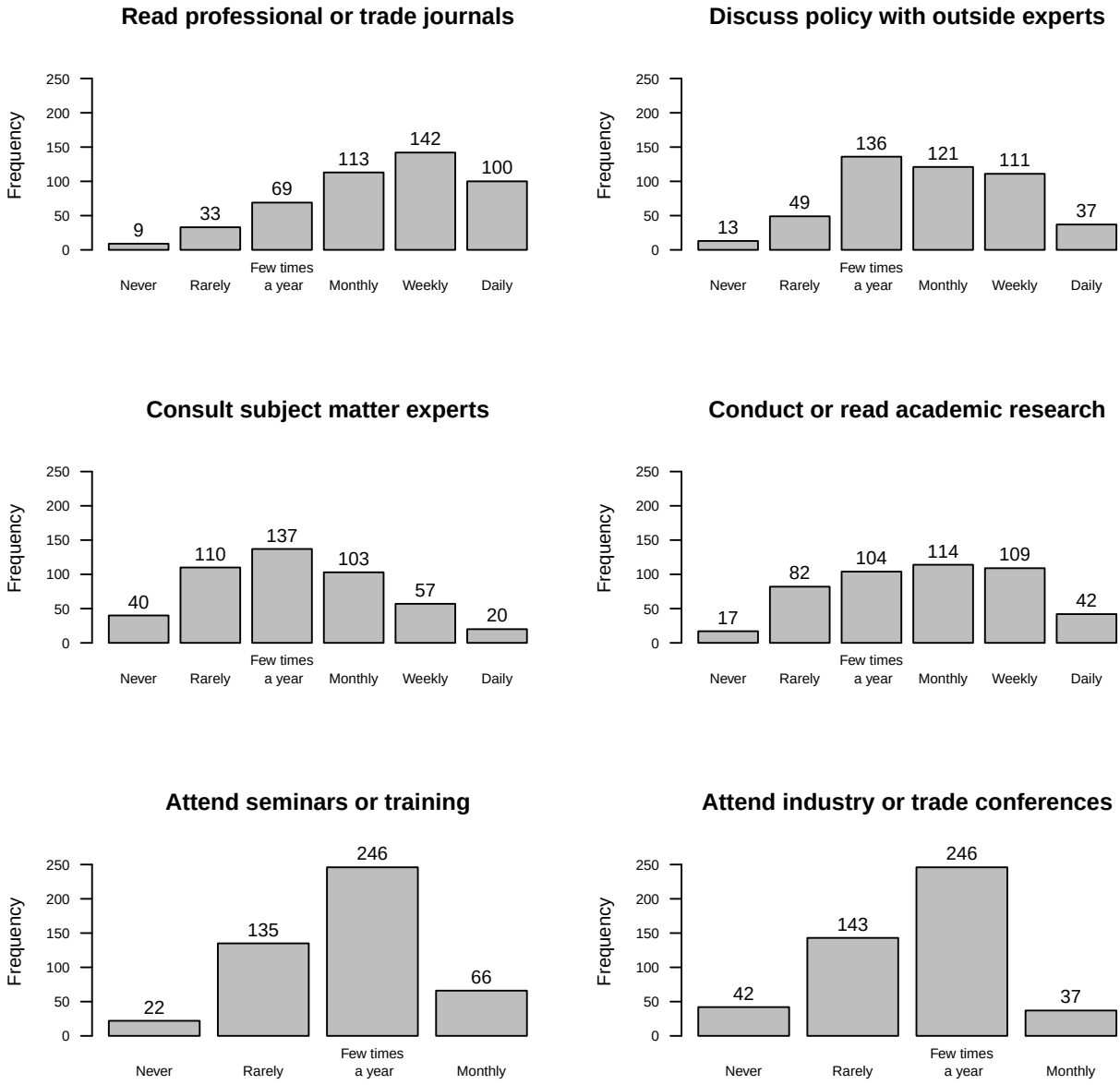


Table C.18: Models of Investment by Rulemakers

Model	(C29)	(C30)	(C31)	(C32)	(C33)	(C34)	(C35)
Dependent Variable	Read	Outside	SME	Academic	Training	Conferences	Factor
Politicization	0.01	$-0.09^{\dagger}$	-0.12^{**}	0.03	-0.12^{**}	$-0.08^{\dagger}$	$-0.07^{\dagger}$
	(0.08)	(0.08)	(0.06)	(0.06)	(0.06)	(0.06)	(0.05)
Preference Divergence	$0.10^{\dagger}$	-0.03	0.01	-0.03	-0.01	-0.09	-0.02
	(0.10)	(0.11)	(0.13)	(0.11)	(0.12)	(0.10)	(0.08)
Value Policy Influence	0.22^{**}	0.31^{***}	0.04	0.46^{***}	0.18^{**}	$0.11^{\dagger}$	0.25^{***}
	(0.09)	(0.09)	(0.09)	(0.11)	(0.09)	(0.10)	(0.08)
Value Pvt. Sector Job	0.17^{**}	$0.11^{\dagger}$	0.13^{*}	$0.11^{\dagger}$	0.08	0.19^{**}	0.14^{**}
	(0.08)	(0.07)	(0.07)	(0.07)	(0.08)	(0.09)	(0.06)
Value Gov't Promotion	0.01	-0.03	0.06	0.11^{*}	-0.02	-0.04	0.01
	(0.07)	(0.06)	(0.06)	(0.06)	(0.06)	(0.07)	(0.05)
Approached about a Job	-0.15	-0.04	$0.13^{\dagger}$	-0.09	-0.17	0.00	-0.05
	(0.17)	(0.12)	(0.12)	(0.14)	(0.13)	(0.13)	(0.10)
Agency-Specific Expertise	0.09	-1.29^{**}	-0.90	0.04	0.03	-0.44	-0.55
	(0.79)	(0.61)	(0.56)	(0.57)	(0.62)	(0.60)	(0.45)
SES	0.15	-0.06	-0.10	0.08	$0.26^{\dagger}$	$0.20^{\dagger}$	0.09
	(0.16)	(0.16)	(0.17)	(0.14)	(0.16)	(0.19)	(0.13)
Agency Tenure	-0.01	0.00	0.00	-0.01^{*}	0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)	(0.004)
Frequency of Contact	0.13^{**}	0.18^{***}	0.11^{*}	$0.11^{\dagger}$	$0.08^{\dagger}$	0.04	0.12^{***}
with Appointees	(0.06)	(0.06)	(0.06)	(0.07)	(0.06)	(0.06)	(0.04)
τ_1 & Con. (C35)	-0.84^{*}	-1.02^{**}	-0.82^{**}	-0.36	-1.02^{***}	-0.83^{**}	-1.25^{***}
	(0.45)	(0.48)	(0.40)	(0.57)	(0.40)	(0.41)	(0.32)
τ_2	-0.04	0.17	0.02	1.09^{**}	0.41	0.42	
	(0.48)	(0.38)	(0.41)	(0.55)	(0.38)	(0.39)	
τ_3	0.61	1.20^{***}	0.80^{*}	1.82^{***}	2.09^{***}	2.13^{***}	
	(0.46)	(0.36)	(0.42)	(0.56)	(0.41)	(0.41)	
τ_4	1.43^{***}	1.89^{***}	1.52^{***}	2.62^{***}			
	(0.46)	(0.36)	(0.41)	(0.57)			
τ_5	2.33^{***}	2.92^{***}	2.32^{***}	3.59^{***}			
	(0.48)	(0.38)	(0.44)	(0.60)			
N	245	245	246	246	246	245	243
N Clusters	108	108	108	108	108	107	107
Pct. Correctly Predicted	27%	32%	26%	26%	58%	57%	
Wald χ^2	39.10	47.29	17.33	64.33	20.39	14.73	
R^2							0.17

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test
† significant at $p < .15$ in a one-sided test of H_A: $\beta < 0$.
χ^2 tests significant at $p < .05$, excluding models C31 ($p < 0.07$) and C35 ($p < 0.15$).
Models C29-C34 are ordered probit models. Model C35 is an OLS models.

Table C.19: Models of Investment Conditional on Position: Rulemakers

Model	(C36)	(C37)	(C38)	(C39)	(C40)	(C41)
Dependent Variable	Read	Outside	SME	Academic	Training	Conferences
Politicization	-0.02	-0.08^{*}	0.04	0.01	-0.08^{*}	0.04
	(0.05)	(0.04)	(0.05)	(0.05)	(0.04)	(0.04)
Pol. $\times$ Rulemaker	0.06	-0.00	-0.12^{*}	0.03	-0.00	$-0.09^{\dagger}$
	(0.08)	(0.08)	(0.06)	(0.07)	(0.07)	(0.07)
Rulemaker	0.09	0.29^{***}	0.15^{*}	0.03	0.16	0.33^{***}
	(0.09)	(0.09)	(0.09)	(0.09)	(0.10)	(0.09)
Preference Divergence	0.00	0.05	0.05	-0.00	$-0.12**$	0.00
	(0.06)	(0.05)	(0.08)	(0.05)	(0.05)	(0.05)
Value Policy Influence	0.12^{***}	0.30^{***}	0.16^{***}	0.30^{***}	0.19^{***}	0.12^{***}
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)
Value Pvt. Sector Job	0.06	0.01	0.05	-0.00	0.04	0.06
	(0.04)	(0.04)	(0.04)	(0.04)	(0.05)	(0.05)
Value Gov't Promotion	-0.02	-0.00	0.06	0.02	0.02	0.02
	(0.04)	(0.03)	(0.04)	(0.03)	(0.04)	(0.04)
Approached about a Job	0.04	0.13	$0.16**$	0.12	0.07	0.01
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.09)
Agency-Specific Expertise	0.02	-0.57^{*}	-0.04	$-0.45^{\dagger}$	-0.03	0.05
	(0.36)	(0.34)	(0.33)	(0.33)	(0.35)	(0.38)
SES	0.24^{***}	0.03	-0.13	-0.03	0.13	0.14
	(0.08)	(0.08)	(0.09)	(0.08)	(0.09)	(0.09)
Agency Tenure	0.00	0.00	0.00	0.00	0.01	0.01^{*}
	(0.004)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)
Frequency of Contact	0.01	0.16^{***}	0.08^{*}	0.02	-0.03	0.01
with Appointees	(0.04)	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)
τ_1	-1.42^{***}	-0.61^{***}	-0.27	-0.77^{***}	-1.00^{***}	$-0.39*$
	(0.23)	(0.21)	(0.21)	(0.22)	(0.21)	(0.21)
τ_2	$-0.55**$	0.55^{***}	0.64^{***}	0.22	0.34	0.86^{***}
	(0.23)	(0.20)	(0.21)	(0.20)	(0.21)	(0.20)
τ_3	-0.01	1.50^{***}	1.39^{***}	0.94^{***}	1.94^{***}	2.46^{***}
	(0.23)	(0.19)	(0.22)	(0.21)	(0.22)	(0.20)
τ_4	0.72^{***}	2.23^{***}	1.97^{***}	1.64^{***}		
	(0.23)	(0.18)	(0.23)	(0.22)		
τ_5	1.61^{***}	3.26^{***}	2.83^{***}	2.52^{***}		
	(0.23)	(0.19)	(0.24)	(0.22)		
N	753	755	755	753	755	755
N Clusters	161	161	160	161	161	161
Pct. Correctly Predicted	22%	36%	28%	32%	53%	49%
Wald χ^2	28.64	203.19	55.84	83.57	53.32	46.49

Robust standard errors clustered on agencies in parentheses.

* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test

† significant at $p < .10$ in a one-sided test of H_A: $\beta < 0$.

χ^2 tests significant at $p < .01$

C.13.2 Agency Mission

The technical expertise required to perform a job certainly varies by agency. Diplomats at the Department of State need different expertise than scientists at NASA. Economists at the Federal Reserve need different expertise than lawyers at the Department of Justice. I categorized agencies by mission to control for this variation in the usefulness of investment tasks across agencies. Categorizing agencies by mission creates groups that require similar skill sets across cabinet departments and independent agencies. For example, the Natural Resources Conservation Service (USDA), the Forest Service (USDA), National Oceanic and Atmospheric Administration (Commerce), and the Environmental Protection Agency all have a mission related to Natural Resources and Environment, despite being in different executive departments or no executive department at all. Similarly, categorizing by mission groups agencies in the Department of State with independent agencies like the United States Agency for International Development and the United States African Development Foundation.

I identified agency mission using a report by the General Accountability Office that reported spending by budget function at the agency-level.[3] Per the report, budget functions are designed to group spending by mission area or "national need." The classification system is used primarily by Budget Committee for the Congressional budget process.

I calculated the proportion of each agency's budget in each of the 17 main functions. I then coded each agency's mission as the budget function with the largest proportion of the agency's budget. While agency's budgets often fall into more than one function, only 8 cases have less than 80% of their spending in a single category. For agencies that were not identified in the data, I coded their mission based on spending in the executive deparment overall or the categorization of agencies with a similar mission. For example, the Departments of Defense, State, and Veterans Affairs categorize spending by program or purpose

[3]The report is titled "Federal Budget: Agency Obligations by Budget Function and Object Classification for Fiscal Year 2003." The report number is GAO-04-834. The report is available at http://www.gao.gov/products/GAO-04-834.

not agency. However, 92% of spending at DOD is in the National Defense function, 95% of spending at DOS is in the International Affairs function, and 100% of spending at VA is in the Veterans Benefits and Services. Therefore, I code all agencies in these departments according to total spending. Offices of the Secretary or the Office of the Attorney General were coded as having the mission most prevalent in the executive department. As another exmaple, the Board of Governors of the Federal Reserve System is not identified in the GAO report, so I code it the same as the Securities and Exchange Commission, Federal Trade Commission, and the Office of the Comptroller of the Currency which are identifed in the GAO report and have similar missions to the Federal Reserve.

As a final step, I recategorized certain agencies. The Centers for Medicare and Medicaid Services, Social Security Administration, and the Social Security Advisory Board would be the only agencies in their function (Medicare and Social Security, respectively). Therefore, I recategorize CMS into Health and SSA and SSAB into Income Security. Finally, the Internal Revenue Service is categorized in the Income Security function, presumably due to tax credits and refunds. The Office of Personnel Management is also categorized in the Income Security function due to its federal employee retirement spending. I recategorize them to the General Government category that includes "provision of central fiscal, personnel, and property activities," which I think better captures these agencies' missions.

Table C.20 contains agencies and, if applicable, the executive department they are in. The GAO report used fiscal year 2003 data and I could not find a more recent data sources that provides agency-level detail. Bold text denotes an agency that was explicitly identified in the report or that could be clearly linked to a line item in the executive department's budget categorization. Otherwise, I coded the agency as described above. Not all agencies are in the models in the main text due to restrictions on response rates by agency.

Table C.20: Agencies Categorized by Mission

Agency	Department	Mission
Bureau of Alcohol, Tobacco, Firearms and Explosives	Department of Justice	Administration of Justice
Bureau of Prisons	Department of Justice	Administration of Justice
Drug Enforcement Administration	Department of Justice	Administration of Justice
Equal Employment Opportunity Commission		Administration of Justice
Executive Office for United States Attorneys	Department of Justice	Administration of Justice
Federal Bureau of Investigation	Department of Justice	Administration of Justice
Financial Crimes Enforcement Network	Department of the Treasury	Administration of Justice
Legal Services Corporation		Administration of Justice
Office of Justice Programs	Department of Justice	Administration of Justice
Office of Legal Counsel	Department of Justice	Administration of Justice
Office of National Drug Control Policy		Administration of Justice
Office of the Attorney General	Department of Justice	Administration of Justice
Office of the Secretary of Homeland Security	Department of Homeland Security	Administration of Justice
Office of the United States Attorney	Department of Justice	Administration of Justice
Secret Service	Department of Homeland Security	Administration of Justice
Transportation Security Administration	Department of Homeland Security	Administration of Justice
U.S. Marshals Service	Department of Justice	Administration of Justice
United States Citizenship and Immigration Services	Department of Homeland Security	Administration of Justice
United States Customs and Border Protection	Department of Homeland Security	Administration of Justice
United States Immigration and Customs Enforcement	Department of Homeland Security	Administration of Justice
Agricultural Research Service	Department of Agriculture	Agriculture
Animal and Plant Health Inspection Service	Department of Agriculture	Agriculture
Economic Research Service	Department of Agriculture	Agriculture
Farm Credit Administration		Agriculture
Farm Service Agency	Department of Agriculture	Agriculture
Grain Inspection, Packers and Stockyards Administration	Department of Agriculture	Agriculture
National Agricultural Statistics Service	Department of Agriculture	Agriculture
National Institute of Food and Agriculture	Department of Agriculture	Agriculture

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Table C.20 – *Continued from previous page*

Agency	**Department**	**Mission**
Office of the Secretary of Agriculture	Department of Agriculture	Agriculture
Risk Management Agency	Department of Agriculture	Agriculture
Board of Governors of the Federal Reserve System		Commerce and Housing Credit
Bureau of Economic Analysis	Department of Commerce	Commerce and Housing Credit
Bureau of Industry and Security	Department of Commerce	Commerce and Housing Credit
Commodity Futures Trading Commission		Commerce and Housing Credit
Consumer Financial Protection Bureau		Commerce and Housing Credit
Council of Economic Advisers		Commerce and Housing Credit
Economics and Statistics Administration	Department of Commerce	Commerce and Housing Credit
Federal Communications Commission		Commerce and Housing Credit
Federal Deposit Insurance Corporation		Commerce and Housing Credit
Federal Home Loan Mortgage Corporation		Commerce and Housing Credit
Federal Housing Administration	Department of Housing and Urban Development	Commerce and Housing Credit
Federal Housing Finance Agency		Commerce and Housing Credit
Federal National Mortgage Association		Commerce and Housing Credit
Federal Trade Commission		Commerce and Housing Credit
Government National Mortgage Association	Department of Housing and Urban Development	Commerce and Housing Credit
International Trade Administration	Department of Commerce	Commerce and Housing Credit
Minority Business Development Agency	Department of Commerce	Commerce and Housing Credit
National Credit Union Administration		Commerce and Housing Credit
National Institute of Standards and Technology	Department of Commerce	Commerce and Housing Credit
National Technical Information Service	Department of Commerce	Commerce and Housing Credit
Office of Housing	Department of Housing and Urban Development	Commerce and Housing Credit
Office of the Comptroller of the Currency	Department of the Treasury	Commerce and Housing Credit
Office of the Secretary of Commerce	Department of Commerce	Commerce and Housing Credit
Office of the United States Trade Representative		Commerce and Housing Credit

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Table C.20 – *Continued from previous page*

Agency	Department	Mission
Postal Regulatory Commission		Commerce and Housing Credit
Rural Housing Service	Department of Agriculture	Commerce and Housing Credit
Securities and Exchange Commission		Commerce and Housing Credit
Small Business Administration		Commerce and Housing Credit
U.S. Census Bureau	Department of Commerce	Commerce and Housing Credit
U.S. Patent and Trademark Office	Department of Commerce	Commerce and Housing Credit
United States Postal Service		Commerce and Housing Credit
Bureau of Indian Affairs	Department of the Interior	Community and Regional Development
Economic Development Administration	Department of Commerce	Community and Regional Development
Federal Emergency Management Agency	Department of Homeland Security	Community and Regional Development
Administration on Aging	Department of Health and Human Services	Education, Training, Employment, and Social Services
Bureau of International Labor Affairs	Department of Labor	Education, Training, Employment, and Social Services
Bureau of Labor Statistics	Department of Labor	Education, Training, Employment, and Social Services
Corporation for National and Community Service		Education, Training, Employment, and Social Services
Federal Mediation and Conciliation Service		Education, Training, Employment, and Social Services
Institute of Education Sciences	Department of Education	Education, Training, Employment, and Social Services
Institute of Museum and Library Services		Education, Training, Employment, and Social Services
National Council on Disability		Education, Training, Employment, and Social Services
National Endowment for the Arts		Education, Training, Employment, and Social Services

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Table C.20 – *Continued from previous page*

Agency	Department	Mission
National Endowment for the Humanities		Education, Training, Employment, and Social Services
National Foundation on the Arts and the Humanities		Education, Training, Employment, and Social Services
National Labor Relations Board		Education, Training, Employment, and Social Services
National Mediation Board		Education, Training, Employment, and Social Services
National Telecommunications and Information Administration	Department of Commerce	Education, Training, Employment, and Social Services
Office of Elementary and Secondary Education	Department of Education	Education, Training, Employment, and Social Services
Office of Federal Contract Compliance Programs	Department of Labor	Education, Training, Employment, and Social Services
Office of Federal Student Aid	Department of Education	Education, Training, Employment, and Social Services
Office of Labor-Management Standards	Department of Labor	Education, Training, Employment, and Social Services
Office of Postsecondary Education	Department of Education	Education, Training, Employment, and Social Services
Office of Special Education and Rehabilitative Services	Department of Education	Education, Training, Employment, and Social Services
Office of the Secretary of Education	Department of Education	Education, Training, Employment, and Social Services
Office of the Secretary of Labor	Department of Labor	Education, Training, Employment, and Social Services
Wage and Hour Division	Department of Labor	Education, Training, Employment, and Social Services

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Table C.20 – *Continued from previous page*

Agency	**Department**	**Mission**
Women's Bureau	Department of Labor	Education, Training, Employment, and Social Services
Energy Information Administration	Department of Energy	Energy
Federal Energy Regulatory Commission	Department of Energy	Energy
Nuclear Regulatory Commission		Energy
Office of Electricity Delivery and Energy Reliability	Department of Energy	Energy
Office of Energy Efficiency and Renewable Energy	Department of Energy	Energy
Office of Environmental Management	Department of Energy	Energy
Office of Fossil Energy	Department of Energy	Energy
Office of Nuclear Energy	Department of Energy	Energy
Office of Science	Department of Energy	Energy
Office of the Secretary of Energy	Department of Energy	Energy
Rural Utilities Service	Department of Agriculture	Energy
Tennessee Valley Authority		Energy
Administrative Conference of the United States		General Government
Alcohol and Tobacco Tax and Trade Bureau	Department of the Treasury	General Government
Bureau of Engraving and Printing	Department of the Treasury	General Government
Bureau of the Fiscal Service	Department of the Treasury	General Government
Federal Election Commission		General Government
Federal Labor Relations Authority		General Government
General Services Administration		General Government
Internal Revenue Service	Department of the Treasury	General Government
Merit Systems Protection Board		General Government
National Archives and Records Administration		General Government
National Indian Gaming Commission	Department of the Interior	General Government
Office of Government Ethics		General Government
Office of Management and Budget		General Government
Office of Personnel Management		General Government
Office of Special Counsel		General Government

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Table C.20 – *Continued from previous page*

Agency	Department	Mission
Office of the Secretary of the Treasury	Department of the Treasury	General Government
U.S. Mint	Department of the Treasury	General Government
United States Election Assistance Commission		General Government
National Aeronautics and Space Administration		General Science, Space, and Technology
National Science Foundation		General Science, Space, and Technology
Office of Science and Technology Policy		General Science, Space, and Technology
Agency for Healthcare Research and Quality	Department of Health and Human Services	Health
Agency for Toxic Substances and Disease Registry	Department of Health and Human Services	Health
Centers for Disease Control and Prevention	Department of Health and Human Services	Health
Centers for Medicare and Medicaid Services	Department of Health and Human Services	Health
Consumer Product Safety Commission		Health
Federal Mine Safety and Health Review Commission		Health
Food Safety and Inspection Service	Department of Agriculture	Health
Food and Drug Administration	Department of Health and Human Services	Health
Health Resources and Services Administration	Department of Health and Human Services	Health
Indian Health Service	Department of Health and Human Services	Health
Mine Safety and Health Administration	Department of Labor	Health
National Institutes of Health	Department of Health and Human Services	Health
Occupational Safety and Health Administration	Department of Labor	Health
Occupational Safety and Health Review Commission		Health

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Table C.20 – *Continued from previous page*

Agency	Department	Mission
Office of the Secretary of Health and Human Services	Department of Health and Human Services	Health
Substance Abuse and Mental Health Services Administration	Department of Health and Human Services	Health
Administration for Children and Families	Department of Health and Human Services	Income Security
Agricultural Marketing Service	Department of Agriculture	Income Security
Employee Benefits Security Administration	Department of Labor	Income Security
Employment and Training Administration	Department of Labor	Income Security
Federal Retirement Thrift Investment Board		Income Security
Food and Nutrition Service	Department of Agriculture	Income Security
Office of Public and Indian Housing	Department of Housing and Urban Development	Income Security
Office of the Secretary of Housing and Urban Development	Department of Housing and Urban Development	Income Security
Railroad Retirement Board		Income Security
Social Security Administration		Income Security
Social Security Advisory Board		Income Security
Arms Control and International Security	Department of State	International Affairs
Broadcasting Board of Governors		International Affairs
Bureau of Consular Affairs	Department of State	International Affairs
Bureau of Diplomatic Security	Department of State	International Affairs
Bureau of International Narcotics and Law Enforcement Affairs	Department of State	International Affairs
Civilian Security, Democracy, and Human Rights	Department of State	International Affairs
Economic Growth, Energy, and the Environment	Department of State	International Affairs
Export-Import Bank of the U.S.		International Affairs
Foreign Agricultural Service	Department of Agriculture	International Affairs
Inter-American Foundation		International Affairs
Millennium Challenge Corporation		International Affairs

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Table C.20 – *Continued from previous page*

Agency	Department	Mission
Office of the Secretary of State	Department of State	International Affairs
Overseas Private Investment Corporation		International Affairs
Peace Corps		International Affairs
Political Affairs	Department of State	International Affairs
Public Diplomacy and Public Affairs	Department of State	International Affairs
United States African Development Foundation		International Affairs
United States Agency for International Development		International Affairs
United States International Trade Commission		International Affairs
United States Trade and Development Agency		International Affairs
Air Force	Department of Defense	National Defense
Army	Department of Defense	National Defense
Central Intelligence Agency		National Defense
Combatant Commands	Department of Defense	National Defense
Defense Advanced Research Projects Agency	Department of Defense	National Defense
Defense Commissary Agency	Department of Defense	National Defense
Defense Contract Audit Agency	Department of Defense	National Defense
Defense Contract Management Agency	Department of Defense	National Defense
Defense Finance and Accounting Service	Department of Defense	National Defense
Defense Health Agency	Department of Defense	National Defense
Defense Information Systems Agency	Department of Defense	National Defense
Defense Nuclear Facilities Safety Board		National Defense
Defense Security Service	Department of Defense	National Defense
Defense Technical Information Center	Department of Defense	National Defense
Defense Threat Reduction Agency	Department of Defense	National Defense
Joint Chiefs of Staff	Department of Defense	National Defense
Missile Defense Agency	Department of Defense	National Defense
National Guard Bureau	Department of Defense	National Defense
National Nuclear Security Administration	Department of Energy	National Defense
National Security Staff		National Defense

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Table C.20 – *Continued from previous page*

Agency	Department	Mission
Navy	Department of Defense	National Defense
Office of the Director of National Intelligence		National Defense
Office of the Secretary of Defense	Department of Defense	National Defense
Selective Service System		National Defense
Bureau of Land Management	Department of the Interior	Natural Resources and Environment
Bureau of Ocean Energy Management	Department of the Interior	Natural Resources and Environment
Bureau of Reclamation	Department of the Interior	Natural Resources and Environment
Bureau of Safety and Environmental Enforcement	Department of the Interior	Natural Resources and Environment
Chemical Safety and Hazard Investigation Board		Natural Resources and Environment
Council on Environmental Quality		Natural Resources and Environment
Environmental Protection Agency		Natural Resources and Environment
Forest Service	Department of Agriculture	Natural Resources and Environment
National Oceanic and Atmospheric Administration	Department of Commerce	Natural Resources and Environment
National Park Service	Department of the Interior	Natural Resources and Environment
Natural Resources Conservation Service	Department of Agriculture	Natural Resources and Environment
Office of Surface Mining Reclamation and Enforcement	Department of the Interior	Natural Resources and Environment
Office of the Secretary of the Interior	Department of the Interior	Natural Resources and Environment
U.S. Fish and Wildlife Service	Department of the Interior	Natural Resources and Environment
U.S. Geological Survey	Department of the Interior	Natural Resources and Environment
Coast Guard	Department of Homeland Security	Transportation
Federal Aviation Administration	Department of Transportation	Transportation
Federal Highway Administration	Department of Transportation	Transportation
Federal Maritime Commission		Transportation
Federal Motor Carrier Safety Administration	Department of Transportation	Transportation
Federal Railroad Administration	Department of Transportation	Transportation
Federal Transit Administration	Department of Transportation	Transportation
Maritime Administration	Department of Transportation	Transportation
National Highway Traffic Safety Administration	Department of Transportation	Transportation
National Railroad Passenger Corporation (AMTRAK)		Transportation

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Table C.20 – *Continued from previous page*

Agency	Department	Mission
National Transportation Safety Board		Transportation
Office of the Secretary of Transportation	Department of Transportation	Transportation
Pipeline and Hazardous Materials Safety Administration	Department of Transportation	Transportation
Research and Innovative Technology Administration	Department of Transportation	Transportation
Surface Transportation Board	Department of Transportation	Transportation
National Cemetery Administration	Department of Veterans Affairs	Veterans Benefits and Services
Office of the Secretary of Veterans Affairs	Department of Veterans Affairs	Veterans Benefits and Services
Veterans Benefits Administration	Department of Veterans Affairs	Veterans Benefits and Services
Veterans Health Administration	Department of Veterans Affairs	Veterans Benefits and Services
Veterans' Employment and Training Service	Department of Labor	Veterans Benefits and Services

Figure C.29 plots the mean level of frequency for each investment task by mission. Variation in investment frequency by mission has face validity. The frequency with which civil servants attend training and seminars varies the least across missions. This makes sense given the generality of the question. Attending training is a more general task than reading or conducting academic research, for example. Similarly, medical professionals at the Department of Veterans Affairs or civil servants working in General Science, Space, and Technology are likely to read or conduct academic research. Similarly, civil servants working in International Affairs contact subject matter experts at international agencies quite often.

Table C.21 shows that the models from Table 2 in the main text are robust to controlling for mission.[4] I also estimate the model of exit with mission fixed effects to provide an additional control for the market value of skills sets associated with each mission. I use non-clustered robust standard errors in the ordered probit models so that the Wald tests are valid. Standard errors are clustered on mission in the OLS models.

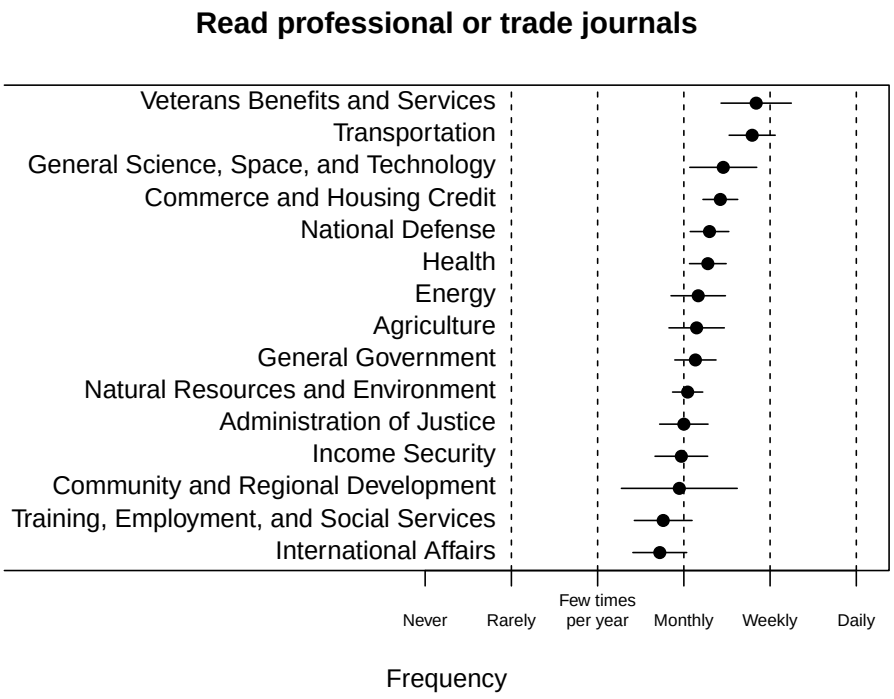
Similar to the analysis of rulemakers above, tasks that are not useful for building expertise should not be affected by politicization because frequency is low for all civil servants. Therefore, I can exploit variation in frequency of investment by mission to isolate agencies where each expertise investment type is useful. There are too few respondents per mission to analyze them separately. Therefore, I subtract the mean investment frequency pooled across missions from the mean frequency of investment by mission to create a measure of whether civil servants working in agencies with a given mission invest more or less than average. I then interact this difference with politicization to evaluate whether civil servants in agencies with a mission that makes an investment task more useful are affected by

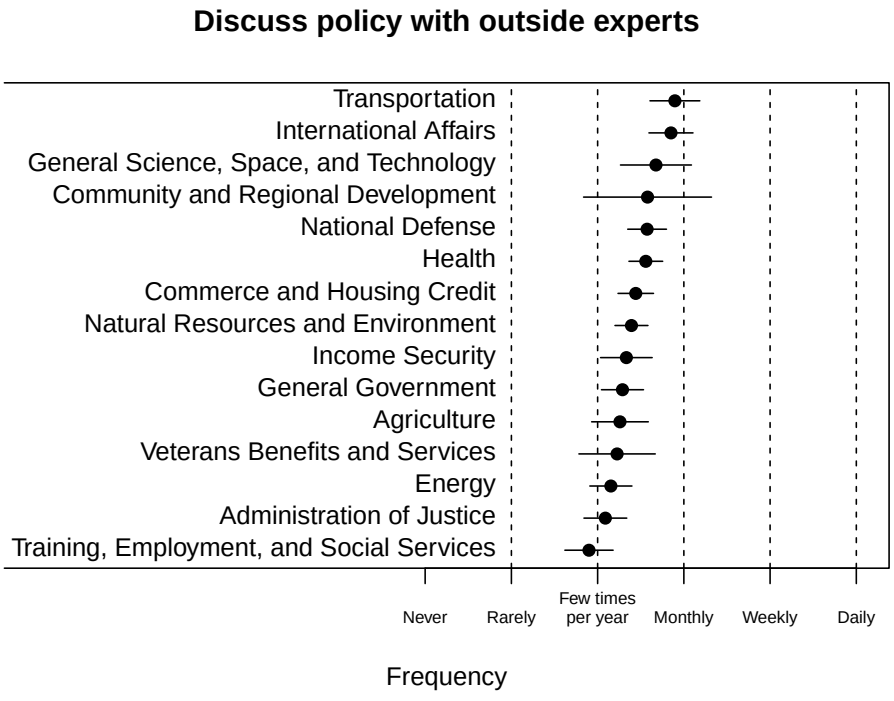
[4]One concern about using fixed effects in a maximum likelihood model is that both the number of observations and the number of fixed effects must approach infinity for estimates to be consistent. See Greene, William. 2004 "The behaviour of the maximum likelihood estimator of limited dependent variable models in the presence of fixed effects". *Econometrics Journal* 7: 98-119. Using Monte Carlo methods, Greene finds that once the number of fixed effects is greater than 3 bias decreases rapidly. The models in Table C.21 have 15 fixed effects and, moreover, the coefficient estimates hardly differ form the estimates in Table 2. Overall, there is little concern that the fixed effects are causing bias.

politicization. The evidence is mixed. The coefficient on the interaction term is negative and distinguishable from zero with a high degree of confidence for reading or conducting academic research and attending industry or trade conferences. Otherwise, I do not find a conditional effect.

Overall, this analysis coupled with the analysis of investment behavior among rulemakers suggests that the types of tasks that build expertise vary across positions and missions. Isolating cases where expertise should be more useful can reveal relationships between politicization and investment behavior that are not evident in the pooled analysis. Scholars should be mindful of this when designing future research on expertise investment by civil servants.

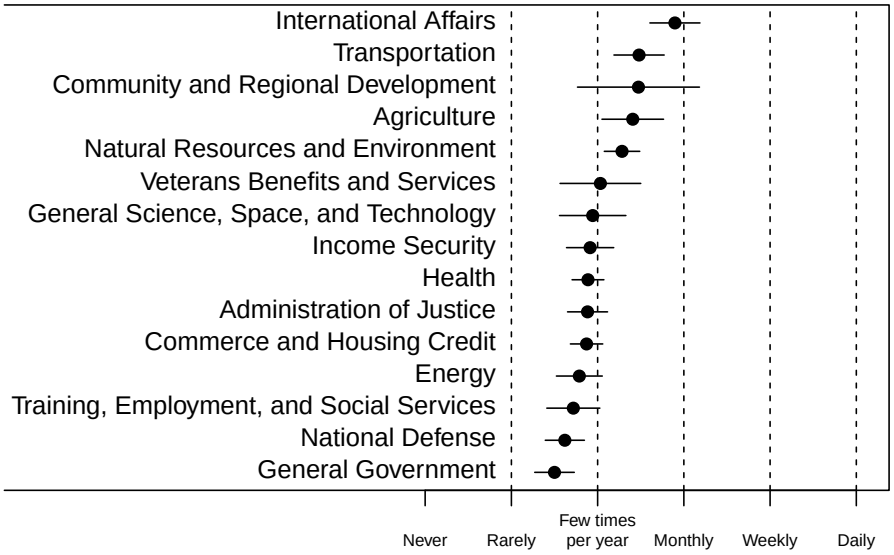
Figure C.29: Investment Frequency by Mission





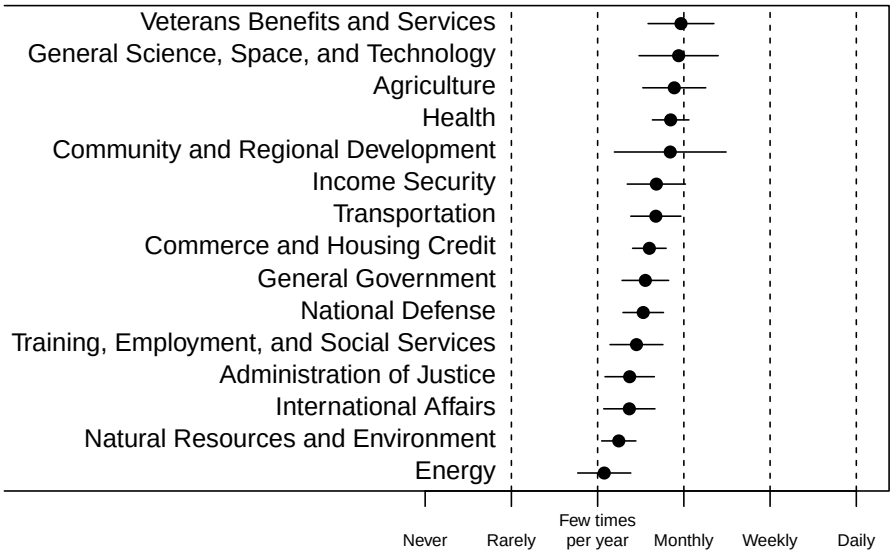
Note: Horizontal lines denote 95% confidence intervals.

Consult subject matter experts



Frequency

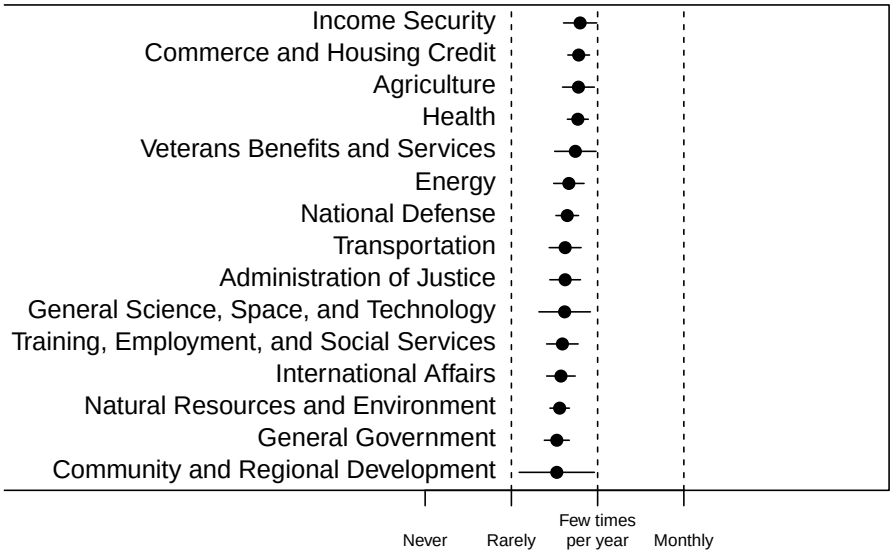
Conduct or read academic research



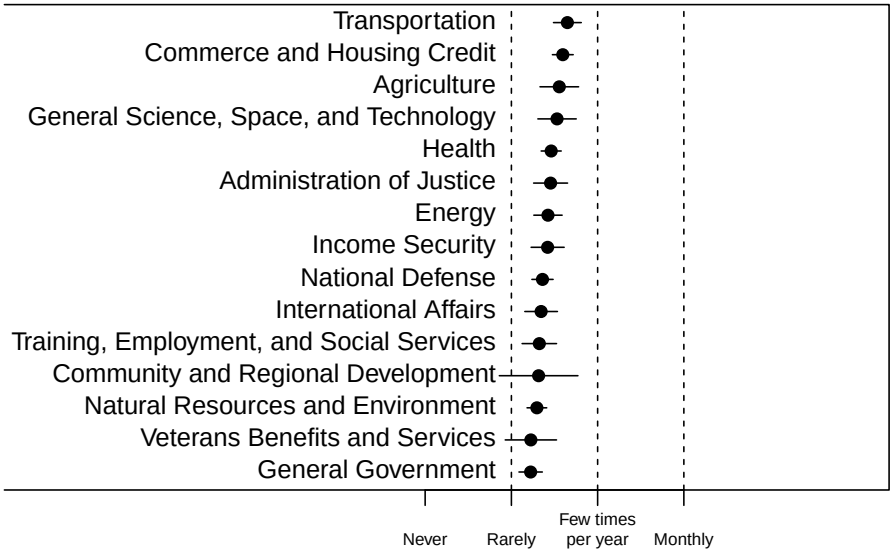
Frequency

Note: Horizontal lines denote 95% confidence intervals.

Attend seminars or training



Attend industry or trade coferences



Note: Horizontal lines denote 95% confidence intervals.

Table C.21: Models Controlling for Agency Mission

Model	(C42)	(C43)	(C44)	(C45)	(C46)	(C47)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization	0.06*	−0.08	−0.09**	0.01	−0.09***	−0.04*
	(0.04)	(0.14)	(0.04)	(0.04)	(0.03)	(0.02)
Preference Divergence	−0.01	0.82**	0.04	0.04	−0.11*	0.01
	(0.07)	(0.35)	(0.06)	(0.06)	(0.06)	(0.03)
Value Policy Influence	−0.06	0.27	0.33***	0.17***	0.19***	0.20***
	(0.05)	(0.30)	(0.04)	(0.04)	(0.04)	(0.02)
Value Pvt. Sector Job	0.17***	0.30	0.02	0.07	0.05	0.03
	(0.04)	(0.30)	(0.04)	(0.04)	(0.04)	(0.02)
Value Gov't Promotion	−0.01	−0.08	−0.02	0.06	0.02	0.01
	(0.04)	(0.17)	(0.03)	(0.04)	(0.04)	(0.02)
Approached about a Job	0.34***	3.19***	0.10	0.19**	0.01	0.10**
	(0.09)	(0.80)	(0.08)	(0.09)	(0.09)	(0.03)
Agency-Specific Expertise	0.25	−3.14*	−0.53*	−0.27	−0.11	−0.32
	(0.38)	(1.65)	(0.31)	(0.31)	(0.32)	(0.30)
SES	0.14	2.56***	0.02	0.02	0.12	0.03
	(0.10)	(0.85)	(0.09)	(0.09)	(0.09)	(0.06)
Agency Tenure	−0.01**	0.10***	0.00	0.00	0.01	0.00
	(0.004)	(0.03)	(0.004)	(0.004)	(0.004)	(0.004)
Frequency of Contact	0.01	0.75***	0.18***	0.07**	0.00	0.08***
with Appointees	(0.04)	(0.23)	(0.04)	(0.04)	(0.03)	(0.02)
Eligible to Retire	0.83***					
	(0.10)					
Mission Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
τ_1 & Con. (C43, C47)	0.35	43.16***	−0.88***	0.02	−1.00***	−0.85***
	(0.26)	(0.99)	(0.22)	(0.22)	(0.24)	(0.13)
τ_2	1.41***		0.29	0.97***	0.33	
	(0.26)		(0.21)	(0.22)	(0.23)	
τ_3	1.96***		1.24***	1.77***	1.95***	
	(0.26)		(0.22)	(0.23)	(0.24)	
τ_4			1.98***	2.41***		
			(0.22)	(0.23)		
τ_5			3.00***	3.30***		
			(0.23)	(0.25)		
N	710	753	765	765	765	763
R^2		0.13				0.15
Pct. Correctly Predicted	45%		35%	28%	53%	
Wald χ^2	128.52		190.68	153.52	66.25	

Robust standard errors in parentheses, clustered on mission in models C43 and C47.
* significant at $p < .10$, ** $p < .05$, *** $p < .01$ in a two-sided test.
χ^2 tests significant at $p < .01$.
Models C42 and C44 - C46 are ordered probit models. Models C43 and C47 are OLS models.

Table C.22: Models of Investment Conditional Mission

Model	(C48)	(C49)	(C50)	(C51)	(C52)	(C53)
Dependent Variable	Read	Outside	SME	Academic	Training	Conferences
Politicization	-0.01	-0.09^{**}	0.00	0.03	-0.09^{**}	0.00
	(0.04)	(0.04)	(0.04)	(0.04)	(0.03)	(0.03)
Pol $\times$ Diff. from Mean Freq.	0.02	0.04	0.02	-0.35^{***}	-0.27	-0.84^{***}
	(0.13)	(0.15)	(0.08)	(0.13)	(0.40)	(0.27)
Difference from Mean Frequency	0.77^{***}	0.42^{**}	0.91^{***}	0.82^{***}	1.59^{***}	1.60^{***}
	(0.17)	(0.19)	(0.14)	(0.15)	(0.57)	(0.39)
Preference Divergence	0.02	0.07	0.06	0.00	-0.10^{*}	0.02
	(0.06)	(0.05)	(0.07)	(0.05)	(0.06)	(0.05)
Value Policy Influence	0.13^{***}	0.32^{***}	0.17^{***}	0.29^{***}	0.19^{***}	0.14^{***}
	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)	(0.04)
Value Pvt. Sector Job	0.06	0.02	0.06	0.01	0.05	0.06
	(0.04)	(0.03)	(0.04)	(0.04)	(0.05)	(0.05)
Value Gov't Promotion	-0.01	-0.02	0.05	0.03	0.02	0.03
	(0.04)	(0.03)	(0.04)	(0.03)	(0.04)	(0.04)
Approached about a Job	0.01	0.10	0.18^{**}	0.06	0.02	-0.01
	(0.08)	(0.08)	(0.08)	(0.08)	(0.08)	(0.09)
Agency-Specific Expertise	0.13	-0.47	-0.13	-0.43	-0.05	0.14
	(0.35)	(0.35)	(0.34)	(0.32)	(0.34)	(0.38)
SES	0.18^{**}	0.06	0.02	0.01	0.17^{*}	0.17^{**}
	(0.08)	(0.08)	(0.09)	(0.08)	(0.09)	(0.09)
Agency Tenure	0.00	0.00	0.00	0.00	0.00	0.01
	(0.003)	(0.003)	(0.004)	(0.003)	(0.004)	(0.004)
Frequency of Contact	0.03	0.17^{***}	0.06	0.04	-0.01	0.04
with Appointees	(0.03)	(0.03)	(0.04)	(0.03)	(0.03)	(0.03)
τ_1	-1.42^{***}	-0.60^{***}	-0.26	-0.72^{***}	-0.96^{***}	$-0.34*$
	(0.22)	(0.21)	(0.20)	(0.20)	(0.20)	(0.20)
τ_2	-0.52^{**}	0.55^{***}	0.68^{***}	0.29	0.36^{*}	0.92^{***}
	(0.23)	(0.20)	(0.20)	(0.18)	(0.20)	(0.19)
τ_3	0.03	1.49^{***}	1.47^{***}	1.01^{***}	1.97^{***}	2.53^{***}
	(0.23)	(0.19)	(0.20)	(0.19)	(0.21)	(0.20)
τ_4	0.77^{***}	2.22^{***}	2.10^{***}	1.72^{***}		
	(0.23)	(0.18)	(0.21)	(0.20)		
τ_5	1.69^{***}	3.23^{***}	2.99^{***}	2.62^{***}		
	(0.24)	(0.19)	(0.21)	(0.20)		
N	763	765	765	763	765	765
N Clusters	161	161	160	161	161	161
Pct. Correctly Predicted	21%	35%	27%	31%	53%	49%
Wald χ^2	50.33	205.82	124.64	141.16	54.26	54.57

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test
† significant at $p < .10$ in a one-sided test of H_A: $\beta > 0$.
χ^2 tests significant at $p < .01$

C.14 Robustness of Models

C.14.1 Sensitivity of Models to Restrictions on Appointee Response Rate

The tables in this section contain models from the main text estimated without restricting the sample to cases with a 15% response rate by appointees and with the sample limited to cases with at least 5 appointees for calculating preference divergence. This analysis demonstrates that subsetting the data set does not lead to substantive conclusions that differ from the conclusions in the main text. Even when restricting the appointee response rate to 15%, preference divergence in some agencies is based on a single appointee.[5] Demonstrating that results are robust to requiring at least 5 appointees for calculating preference divergence limits concern about measurement error.

A notable difference is that the coefficient on preference divergence squared is smaller on Model C55 than in Model 2 in the main text, resulting is less confidence that it is not zero. This may be because preference divergence is measured with greater error.

[5]This is partially due to difficulty calculating the denominator in Offices of the Secretary and the Office of the Attorney General because the commercial database used to construct the sample does not identify these workplaces for non-respondents.

Table C.23: Models of Politicization

Model	(C54)	(C55)	(C56)	(C57)
Dependent Variable	Pol.	Pol.	Pol.	Pol.
Subset	No restriction		At least 5 appointees	
Preference Divergence	0.14^{***}	0.03	0.15^{***}	-0.07
(Std. Err.)	(0.04)	(0.09)	(0.05)	(0.13)
Divergence^2		$0.05^{\dagger}$		$0.09^{\dagger}$
		(0.04)		(0.06)
SES	0.10^{*}	0.11^{*}	0.06	0.07
	(0.06)	(0.06)	(0.07)	(0.07)
Agency Tenure	0.00	0.00	0.00	0.00
	(0.002)	(0.002)	(0.003)	(0.003)
Frequency of Contact	0.19^{***}	0.19^{***}	0.21^{***}	0.21^{***}
with Appointees	(0.03)	(0.03)	(0.03)	(0.03)
τ_1	-2.26^{***}	-2.30^{***}	-2.12^{***}	-2.21^{***}
	(0.17)	(0.17)	(0.19)	(0.19)
τ_2	-1.59^{***}	-1.63^{***}	-1.44^{***}	-1.52^{***}
	(0.12)	(0.12)	(0.14)	(0.14)
τ_3	-1.06^{***}	-1.10^{***}	-0.95^{***}	-1.03^{***}
	(0.10)	(0.11)	(0.12)	(0.12)
τ_4	-0.38^{***}	-0.42^{***}	$-0.27**$	-0.35^{***}
	(0.09)	(0.10)	(0.12)	(0.12)
τ_5	0.76^{***}	0.72^{***}	0.89^{***}	0.82^{***}
	(0.10)	(0.10)	(0.12)	(0.12)
τ_6	1.69^{***}	1.65^{***}	1.79^{***}	1.72^{***}
	(0.10)	(0.10)	(0.11)	(0.12)
τ_7	2.48^{***}	2.44^{***}	2.63^{***}	2.55^{***}
	(0.11)	(0.12)	(0.13)	(0.14)
τ_8	3.31^{***}	3.27^{***}	3.60^{***}	3.53^{***}
	(0.16)	(0.17)	(0.22)	(0.24)
N	1,894	1,894	1,082	1,082
N Clusters	187	187	90	90
Pct. Correctly Predicted	37%	37%	39%	40%
Wald χ^2	87.05	86.90	70.73	69.36

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test
† significant at $p \leq .10$ in a one-sided test of H_A: $\beta > 0$.
χ^2 tests significant at $p < .01$.
Models are ordered probit models.

Table C.24: Models of Intent to Exit, Effort, and Expertise Investment: No Restriction on Appointee Response Rate

Model	(C58)	(C59)	(C60)	(C61)	(C62)	(C63)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization	0.08^{***}	0.02	-0.09^{**}	0.00	-0.08^{**}	-0.04^{**}
	(0.03)	(0.21)	(0.04)	(0.03)	(0.03)	(0.02)
Preference Divergence	0.01	0.79	0.05	0.05	-0.11^{**}	0.01
	(0.06)	(0.52)	(0.05)	(0.08)	(0.05)	(0.04)
Value Policy Influence	-0.05	0.38	0.34^{***}	0.19^{***}	0.19^{***}	0.21^{***}
	(0.05)	(0.34)	(0.04)	(0.04)	(0.04)	(0.02)
Value Pvt. Sector Job	0.15^{***}	0.43	0.03	0.03	0.02	0.02
	(0.04)	(0.26)	(0.03)	(0.04)	(0.04)	(0.02)
Value Gov't Promotion	-0.00	-0.12	-0.02	0.06	0.01	0.01
	(0.04)	(0.25)	(0.03)	(0.03)	(0.03)	(0.02)
Approached about a Job	0.31^{***}	3.35^{***}	0.14^{**}	0.12	0.09	0.11^{**}
	(0.08)	(0.64)	(0.07)	(0.07)	(0.08)	(0.05)
Agency-Specific Expertise	0.25	-2.26	-0.36	0.01	-0.07	-0.17
	(0.33)	(1.99)	(0.32)	(0.30)	(0.32)	(0.20)
SES	0.12	3.10^{***}	0.07	-0.14^{*}	0.10	-0.01
	(0.09)	(0.61)	(0.08)	(0.09)	(0.09)	(0.05)
Agency Tenure	-0.01^{***}	0.08^{***}	0.00	0.00	0.00	0.00
	(0.004)	(0.03)	(0.003)	(0.004)	(0.004)	(0.002)
Frequency of Contact	0.01	0.71^{***}	0.18^{***}	0.09^{**}	-0.03	0.08^{***}
with Appointees	(0.04)	(0.23)	(0.03)	(0.04)	(0.03)	(0.02)
Eligible to Retire	0.79^{***}					
	(0.09)					
τ_1 & Con. (C59, C63)	0.10	42.51^{***}	-0.45^{**}	-0.23	-1.07^{***}	-0.89^{***}
	(0.23)	(1.41)	(0.20)	(0.19)	(0.21)	(0.12)
τ_2	1.15^{***}		0.68^{***}	0.68^{***}	0.26	
	(0.23)		(0.19)	(0.20)	(0.20)	
τ_3	1.69^{***}		1.62^{***}	1.45^{***}	1.81^{***}	
	(0.23)		(0.18)	(0.20)	(0.22)	
τ_4			2.37^{***}	2.08^{***}		
			(0.18)	(0.21)		
τ_5			3.38^{***}	2.90^{***}		
			(0.19)	(0.22)		
N	800	860	872	873	871	869
N Clusters	171	172	173	172	173	172
R^2		0.13				0.16
Pct. Correctly Predicted	47%		35%	30%	51%	
Wald χ^2	120.98		222.17	57.82	45.44	

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test.
χ^2 tests significant at $p < .01$.
Models C58 and C60 - C62 are ordered probit models. Models C59 and C63 are OLS models.

Table C.25: Models of Intent to Exit, Effort, and Expertise Investment: At Least 5 Appointees

Model	(C64)	(C65)	(C66)	(C67)	(C68)	(C69)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization	0.10^{**}	0.05	$-0.08^{\dagger}$	-0.01	-0.08^{**}	$-0.04^{\dagger}$
	(0.04)	(0.27)	(0.05)	(0.04)	(0.04)	(0.03)
Preference Divergence	0.11	0.72	0.07	0.17^{*}	-0.05	0.07
	(0.08)	(0.59)	(0.06)	(0.10)	(0.07)	(0.05)
Value Policy Influence	-0.07	0.29	0.31^{***}	0.18^{***}	0.21^{***}	0.21^{***}
	(0.07)	(0.39)	(0.05)	(0.04)	(0.05)	(0.03)
Value Pvt. Sector Job	0.21^{***}	0.42	0.04	0.00	0.06	0.03
	(0.05)	(0.39)	(0.04)	(0.05)	(0.06)	(0.03)
Value Gov't Promotion	-0.04	-0.08	-0.02	0.04	0.05	0.02
	(0.05)	(0.31)	(0.04)	(0.05)	(0.04)	(0.03)
Approached about a Job	0.32^{***}	2.86^{***}	$0.17*$	0.06	0.02	0.09
	(0.11)	(0.77)	(0.10)	(0.10)	(0.11)	(0.06)
Agency-Specific Expertise	0.14	-2.10	-0.07	0.03	0.08	-0.03
	(0.46)	(2.55)	(0.47)	(0.39)	(0.45)	(0.30)
SES	0.06	4.40^{***}	0.06	$-0.19*$	0.12	-0.02
	(0.11)	(0.74)	(0.10)	(0.11)	(0.11)	(0.07)
Agency Tenure	-0.02^{***}	0.07^{*}	0.00	0.00	0.00	0.00
	(0.01)	(0.04)	(0.004)	(0.01)	(0.005)	(0.003)
Frequency of Contact	0.05	0.89^{***}	0.17^{***}	0.09	-0.00	0.09^{***}
with Appointees	(0.05)	(0.25)	(0.04)	(0.05)	(0.03)	(0.03)
Eligible to Retire	0.87^{***}					
	(0.12)					
τ_1 & Con. (C65, C69)	0.17	42.36^{***}	-0.44^{*}	-0.28	-0.81^{***}	-0.93^{***}
	(0.32)	(1.78)	(0.25)	(0.25)	(0.30)	(0.18)
τ_2	1.21^{***}		0.58^{**}	0.61^{**}	0.61^{**}	
	(0.32)		(0.25)	(0.26)	(0.30)	
τ_3	1.75^{***}		1.52^{***}	1.35^{***}	2.16^{***}	
	(0.32)		(0.23)	(0.26)	(0.31)	
τ_4			2.21^{***}	1.98^{***}		
			(0.23)	(0.27)		
τ_5			3.21^{***}	2.78^{***}		
			(0.24)	(0.28)		
N	471	501	512	512	513	511
N Clusters	83	83	84	83	84	83
R^2		0.19				0.14
Pct. Correctly Predicted	29%		35%	29%	51%	
Wald χ^2	119.32		124.52	41.89	43.88	

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test.
† significant at $p < .10$ in a one-sided test of H_A: $\beta < 0$; χ^2 tests significant at $p < .01$.
Models C64 and C66 - C68 are ordered probit models. Models C65 and C69 are OLS models.

C.14.2 Models Controlling for Unobserved Agency Characteristics

One concern about the models in the main text is that unobserved agency characteristics bias the coefficients. For these unobserved agency characteristics to bias the coefficients, the characteristics must be correlated with the independent variable of interest and the dependent variable. For example, some agencies are designed to be insulated from political control. Some appointed positions have fixed terms with for-cause protections and, therefore, serve across administrations. Other appointed positions have restrictions on partisanship (i.e., party balancing requirements for some independent commissions) or expertise requirements. (See Lewis 2003, Selin and Lewis 2012, and Selin 2015 for additional discussion of agency structure.) By limiting the president's choice of appointees, such insulating agency characteristics may affect both preference divergence and politicization raising concerns about omitted variable bias. Another concern related to statistical inference using these models is that presidents and appointees may concentrate policy influence among appointees because of agency dysfunction, say inadequate training programs for employees, that results in less expertise at the agency. Therefore, not controlling for this dysfunction would bias the estimate of the effect of politicization on expertise investment because agency dysfunction causes politicization and directly affects expertise investment.[6] A similar concern applies to agency dysfunction causing exit and politicization.

In other cases, there may be unobserved agency characteristics that cause employees to exit more or invest in expertise less, but that are uncorrelated with politicization. For example, the controls for marketability of skills may not effectively capture variation in skills at each agency, resulting in a correlation between agency and exit. Or, as discussed above in Section 13, the usefulness of expertise may vary across agencies.

In this section, I estimate models with agency fixed effects to control for time-invariant

[6]This concern is limited by the negative effect of politicization on expertise. A common response to poor performance due to agency dysfunction is to reduce politicization. For example, Director James Lee Witt reduced the number of appointees at the Federal Emergency Management Agency by one-third in response to poor performance by the agency (see Lewis 2008 Ch.6).

unobserved agency characteristics and demonstrate robustness of the models presented in the main text. Estimating models with agency fixed effects on this data set is problematic. The agency fixed effects will absorb between agency variation in politicization and preference divergence. Additionally, there are often few respondents per agency, and sometimes as few as one, creating concerns about overfitting the model. In the ordered probit models estimated on the random half sample, few respondents per agency results in observations that are completely determined. I address this by limiting the sample to agencies with at least five respondents when estimating these models with fixed effects.[7] I use robust standard errors that are not clustered on agencies in the ordered probit models so that the Wald tests are valid. Nonetheless, it is useful to demonstrate the robustness of the models in the main text using models with agency fixed effects.

Tables C.26 and C.27 estimate the models from Tables 1 and 2 in the main text including agency fixed effects. These models show that the relationships demonstrated in the main text remain when controlling for any systematic time-invariant differences between agencies, including differences in agency structure. This suggests there is important intra-agency variation.

[7]For discussion of fixed effects and ordered probit models, see Greene, William. 2004 "The behaviour of the maximum likelihood estimator of limited dependent variable models in the presence of fixed effects". *Econometrics Journal* 7: 98-119.

Table C.26: Models of Politicization with Fixed Effects

Model	(C64)	(C65)
Dependent Variable	Pol.	Pol.
Preference Divergence	0.20^{***}	-0.10
	(0.04)	(0.13)
Divergence^2		0.13^{**}
		(0.05)
SES	0.11^{*}	0.12^{*}
	(0.07)	(0.07)
Agency Tenure	0.00	0.00
	(0.003)	(0.003)
Frequency of Contact	0.12^{***}	0.12^{***}
with Appointees	(0.03)	(0.03)
Agency Fixed Effects	Yes	Yes
τ_1	-3.45^{***}	-3.54^{***}
	(0.37)	(0.36)
τ_2	-2.61^{***}	-2.69^{***}
	(0.34)	(0.34)
τ_3	-2.00^{***}	-2.08^{***}
	(0.33)	(0.33)
τ_4	-1.24^{***}	-1.32^{***}
	(0.33)	(0.32)
τ_5	0.04	-0.03
	(0.33)	(0.32)
τ_6	1.07^{***}	0.99^{***}
	(0.33)	(0.32)
τ_7	1.97^{***}	1.90^{***}
	(0.33)	(0.33)
τ_8	3.00^{***}	2.94^{***}
	(0.35)	(0.35)
N	1,630	1,630
N Agencies	173	173
Wald χ^2	3450.14	3443.81

Robust standard errors in parentheses.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test
χ^2 tests significant at $p < .01$.

Table C.27: Models of Intent to Exit, Effort, and Expertise Investment: Controlling for Unobserved Agency Characteristics

Model	(C66)	(C67)	(C68)	(C69)	(C70)	(C71)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization	$0.08^{\dagger}$	0.15	-0.18^{***}	-0.06	$-0.07^{\dagger}$	-0.06^{**}
	(0.05)	(0.28)	(0.05)	(0.05)	(0.05)	(0.03)
Preference Divergence	0.09	0.52	0.02	0.06	-0.19^{***}	-0.01
	(0.08)	(0.60)	(0.07)	(0.08)	(0.07)	(0.04)
Value Policy Influence	-0.08	0.07	0.29^{***}	0.15^{**}	0.23^{***}	0.16^{***}
	(0.07)	(0.40)	(0.06)	(0.06)	(0.05)	(0.03)
Value Pvt. Sector Job	0.23^{***}	0.20	0.04	0.10^{*}	$0.08^{\dagger}$	0.05^{*}
	(0.06)	(0.33)	(0.05)	(0.05)	(0.05)	(0.03)
Value Gov't Promotion	-0.02	-0.02	-0.03	0.04	-0.04	0.00
	(0.05)	(0.32)	(0.04)	(0.05)	(0.05)	(0.02)
Approached about a Job	0.37^{***}	2.48^{***}	0.06	0.07	-0.02	$0.08^{\dagger}$
	(0.12)	(0.75)	(0.10)	(0.11)	(0.11)	(0.06)
Agency-Specific Expertise	0.06	-1.63	-0.29	-0.02	-0.03	-0.22
	(0.55)	(2.34)	(0.41)	(0.38)	(0.47)	(0.24)
SES	$0.20^{\dagger}$	3.20^{***}	0.12	0.07	$0.20^{\dagger}$	0.03
	(0.13)	(0.83)	(0.12)	(0.12)	(0.12)	(0.07)
Agency Tenure	-0.01^{**}	0.07^{*}	0.00	0.00	0.00	0.00
	(0.01)	(0.04)	(0.005)	(0.005)	(0.01)	(0.00)
Frequency of Contact with Appointees	0.05	1.19^{***}	0.18^{***}	0.05	0.01	0.09^{***}
	(0.06)	(0.32)	(0.05)	(0.05)	(0.05)	(0.02)
Eligible to Retire	0.86^{***}					
	(0.12)					
Agency Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
τ_1 & Con. (C67, C71)	0.10	43.18^{***}	-1.05	-0.39	-0.49	-0.75^{***}
	(0.61)	(1.75)	(0.67)	(0.46)	(0.37)	(0.15)
τ_2	1.24^{**}		0.16	0.71	1.01^{***}	
	(0.61)		(0.65)	(0.45)	(0.38)	
τ_3	1.76^{***}		1.16^{*}	1.63^{***}	2.90^{***}	
	(0.61)		(0.65)	(0.45)	(0.40)	
τ_4			1.99^{***}	2.36^{***}		
			(0.64)	(0.46)		
τ_5			3.17^{***}	3.37^{***}		
			(0.65)	(0.47)		
N	501	753	552	553	552	763
N Agencies	59	160	62	62	62	160
R^2		0.11				0.15
Wald χ^2	201.78		235.53	299.06	223.30	

Robust standard errors in parentheses. Standard errors are clustered on agencies in OLS models.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test.
† significant at $p < .10$ in a one-sided test of H_A: $\beta < 0$ or $\beta > 0$; χ^2 tests significant at $p < .01$.
Models C66 and C68 - C70 are ordered probit models. Models C67 and C71 are OLS models.

C.14.3 Replication of Models Using Alternative Measures of Preference Divergence

The models estimated thus far use the average of appointee ideal points to calculate preference divergence. However, it may be that appointees are doing their best to faithfully implement the president's agenda. In this case, the relevant policy preference does not belong to appointees, but to President Obama. The tables below replicate models from the main text using President Obama's ideal point to calculate preference divergence. The results are robust to using this alternative measure. The number of observations increases in these models because I do not need to identify careerists and appointees in the same agency to calculate preference divergence. Therefore, I can include respondents who selected "Other" as their workplace.

I also use a survey question that asks respondents whose jobs deal with notice-and-comment rulemaking and/or deciding enforcement priorities about their preferences over the scope and stringency of regulation at their agency. This measure of preference divergence directly captures preferences relevant to agency policymaking for this subset of respondents. Moreover, controlling for preference divergence regarding scope and stringency of regulation does not alter the relationship between politicization and exit or politicization and expertise investment. Models estimated using the regulation-based measure of preference divergence replicate results from models in the main text, but with less precision and less confidence due to case loss. The result in Model C85 is similar to the result in Model C32 from Table C.28, which is expected given that the subset includes respondents involved in rulemaking.

The question text is below. Online response options were selected from a continuous scale from 1 to 7 with 1 labeled "Should be decreased significantly," 4 labeled "About right," and 7 labeled "Should be increased significantly." Respondents that chose the paper survey could choose integers from 1 to 7.

"Some people think that the scope and stringency of regulation by federal agencies is too burdensome and should be decreased. Suppose these people are at one end of a scale, at point 1. Other

people think that the scope and stringency of regulation by federal agencies is too lax and should be increased. Suppose these people are at the other end, at point 7.

Thinking about regulations enforced by [your agency], where would you place yourself on this scale?"

Table C.28: Models of Politicization using Alternative Measures of Preference Divergence

Model	(C72)	(C73)	(C74)	(C75)
Dependent Variable	Pol.	Pol.	Pol.	Pol.
Pref. Divergence from Pres. Obama	0.14^{***}	-0.07		
	(0.03)	(0.09)		
Pref. Divergence from Pres. Obama^2		0.08^{**}		
		(0.03)		
Pref. Divergence (Regs.)			0.13^{***}	-0.01
			(0.05)	(0.11)
Pref. Divergence^2 (Regs.)				$0.04^{\dagger}$
				(0.03)
SES	0.07	0.07	0.17^{**}	0.16^{*}
	(0.05)	(0.05)	(0.08)	(0.09)
Agency Tenure	0.00	0.00	0.00	0.00
	(0.002)	(0.002)	(0.003)	(0.003)
Frequency of Contact	0.19^{***}	0.20^{***}	0.17^{***}	0.17^{***}
with Appointees	(0.02)	(0.02)	(0.04)	(0.04)
τ_1	-2.12^{***}	-2.20^{***}	-2.06^{***}	-2.12^{***}
	(0.15)	(0.15)	(0.26)	(0.27)
τ_2	-1.55^{***}	-1.62^{***}	-1.65^{***}	-1.72^{***}
	(0.11)	(0.11)	(0.22)	(0.23)
τ_3	-1.05^{***}	-1.12^{***}	-0.99^{***}	-1.05^{***}
	(0.10)	(0.10)	(0.17)	(0.18)
τ_4	-0.36^{***}	-0.44^{***}	$-0.32*$	$-0.39**$
	(0.09)	(0.09)	(0.17)	(0.18)
τ_5	0.77^{***}	0.70^{***}	0.89^{***}	0.83^{***}
	(0.09)	(0.10)	(0.18)	(0.18)
τ_6	1.70^{***}	1.63^{***}	1.76^{***}	1.70^{***}
	(0.09)	(0.09)	(0.17)	(0.18)
τ_7	2.47^{***}	2.40^{***}	2.47^{***}	2.41^{***}
	(0.10)	(0.10)	(0.18)	(0.19)
τ_8	3.26^{***}	3.19^{***}	3.34^{***}	3.28^{***}
	(0.13)	(0.14)	(0.27)	(0.28)
N	2,354	2,354	623	623
N Clusters	227	227	103	103
Pct. Correctly Predicted	38%	37%	42%	42%
Wald χ^2	118.47	121.43	42.77	52.43

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test
† significant at $p < .10$ in a one-sided test of H_A: $\beta > 0$.
χ^2 tests significant at $p < .01$.
Models are ordered probit models.

Table C.29: Models of Intent to Exit, Effort, and Expertise Investment: Preference Divergence from President Obama

Model	(C76)	(C77)	(C78)	(C79)	(C80)	(C81)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization	0.06**	−0.02	−0.11***	−0.01	−0.10***	−0.06***
	(0.03)	(0.17)	(0.03)	(0.03)	(0.03)	(0.02)
Pref. Divergence from Pres. Obama	0.04	1.08***	0.05	0.07	−0.08*	0.02
	(0.05)	(0.33)	(0.04)	(0.05)	(0.04)	(0.03)
Value Policy Influence	−0.03	0.49*	0.34***	0.20***	0.19***	0.21***
	(0.04)	(0.29)	(0.04)	(0.04)	(0.04)	(0.02)
Value Pvt. Sector Job	0.17***	0.14	0.04	0.03	0.03	0.03
	(0.04)	(0.23)	(0.03)	(0.03)	(0.04)	(0.02)
Value Gov't Promotion	−0.01	−0.03	−0.03	0.04	0.01	0.00
	(0.03)	(0.22)	(0.03)	(0.03)	(0.03)	(0.02)
Approached about a Job	0.39***	3.11***	0.20***	0.13*	0.10	0.13***
	(0.08)	(0.55)	(0.06)	(0.07)	(0.07)	(0.04)
Agency-Specific Expertise	0.22	−2.35	−0.15	0.02	0.00	−0.08
	(0.30)	(1.81)	(0.29)	(0.26)	(0.27)	(0.18)
SES	0.13*	2.88***	−0.00	−0.15*	0.10	−0.03
	(0.08)	(0.54)	(0.07)	(0.08)	(0.08)	(0.05)
Agency Tenure	−0.01**	0.07***	0.00	0.00	0.00	0.00
	(0.004)	(0.02)	(0.003)	(0.003)	(0.003)	(0.002)
Frequency of Contact	0.00	0.93***	0.18***	0.09***	−0.03	0.09***
with Appointees	(0.03)	(0.21)	(0.03)	(0.03)	(0.03)	(0.02)
Eligible to Retire	0.78***					
	(0.08)					
τ_1 & Con. (C77, C81)	0.25	41.76***	−0.42**	−0.16	−1.03***	−0.92***
	(0.22)	(1.19)	(0.17)	(0.18)	(0.21)	(0.12)
τ_2	1.30***		0.70***	0.75***	0.24	
	(0.22)		(0.17)	(0.19)	(0.21)	
τ_3	1.84***		1.65***	1.52***	1.79***	
	(0.22)		(0.17)	(0.19)	(0.22)	
τ_4			2.40***	2.14***		
			(0.17)	(0.20)		
τ_5			3.37***	2.99***		
			(0.17)	(0.20)		
N	973	1,047	1,061	1,061	1,060	1,057
N Clusters	203	204	205	204	205	204
R^2		0.14				0.16
Pct. Correctly Predicted	51%		35%	31%	51%	
Wald χ^2	163.30		264.62	63.54	51.50	

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, ** $p < .05$, *** $p < .01$ in a two-sided test; χ^2 tests significant at $p < .01$.
Models C76 and C78 - C80 are ordered probit models. Models C77 and C81 are OLS models.

Table C.30: Models of Intent to Exit, Effort, and Expertise Investment: Regulation Based Measure of Preference Divergence

Model	(C82)	(C83)	(C84)	(C85)	(C86)	(C87)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization	$0.09^{\dagger}$	-0.28	-0.12^{*}	-0.11^{*}	$-0.09^{\dagger}$	-0.08^{**}
	(0.06)	(0.31)	(0.07)	(0.06)	(0.06)	(0.03)
Pref. Divergence (Regs.)	0.14^{*}	$0.80^{\dagger}$	0.06	0.03	0.05	0.04
	(0.08)	(0.48)	(0.07)	(0.08)	(0.07)	(0.05)
Value Policy Influence	-0.18^{**}	1.19^{***}	0.24^{***}	0.01	0.17^{**}	0.12^{**}
	(0.08)	(0.34)	(0.07)	(0.08)	(0.07)	(0.05)
Value Pvt. Sector Job	0.20^{***}	$0.69^{\dagger}$	$0.09^{\dagger}$	0.16^{***}	0.09	0.09^{***}
	(0.07)	(0.49)	(0.06)	(0.06)	(0.07)	(0.03)
Value Gov't Promotion	0.00	$-0.58^{\dagger}$	-0.06	0.02	0.05	-0.01
	(0.06)	(0.41)	(0.06)	(0.05)	(0.06)	(0.03)
Approached about a Job	0.32^{**}	3.27^{***}	0.02	0.19^{*}	0.04	0.07
	(0.14)	(0.98)	(0.11)	(0.11)	(0.11)	(0.07)
Agency-Specific Expertise	-0.76	3.62	-0.59	-0.40	0.27	-0.25
	(0.61)	(2.95)	(0.48)	(0.54)	(0.59)	(0.32)
SES	0.08	3.96^{***}	0.13	-0.12	0.11	0.02
	(0.15)	(0.82)	(0.13)	(0.16)	(0.14)	(0.09)
Agency Tenure	0.00	0.10^{*}	-0.01^{*}	0.00	0.00	0.00
	(0.01)	(0.05)	(0.01)	(0.01)	(0.01)	(0.003)
Frequency of Contact	-0.02	1.19^{***}	0.23^{***}	$0.09^{\dagger}$	0.10^{**}	0.11^{***}
with Appointees	(0.07)	(0.30)	(0.05)	(0.05)	(0.05)	(0.03)
Eligible to Retire	0.82^{***}					
	(0.14)					
τ_1 & Con. (C83, C87)	-0.13	38.01^{***}	-1.26^{***}	-1.08^{***}	-0.87^{***}	-0.55^{***}
	(0.32)	(1.74)	(0.36)	(0.39)	(0.32)	(0.21)
τ_2	0.88^{***}		0.12	-0.06	$0.60**$	
	(0.32)		(0.33)	(0.39)	(0.30)	
τ_3	1.51^{***}		1.15^{***}	$0.73*$	2.39^{***}	
	(0.30)		(0.32)	(0.41)	(0.32)	
τ_4			1.92^{***}	1.38^{***}		
			(0.32)	(0.42)		
τ_5			2.87^{***}	2.36^{***}		
			(0.35)	(0.43)		
N	261	287	291	291	292	290
N Clusters	83	84	84	83	84	83
R^2		0.23				0.15
Pct. Correctly Predicted	17%		35%	31%	60%	
Wald χ^2	81.50		90.98	20.05	28.60	

Robust standard errors clustered on agencies in parentheses.

* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test.

† significant at $p < .10$ in a one-sided test of H_A: $\beta > 0$ or $\beta > 0$; χ^2 tests significant at $p < .03$.

Models C82 and C84 - C86 are ordered probit models. Models C83 and C87 are OLS models.

C.14.4 Replication of Models Using Alternative Measures of Politicization

A common measure of politicization in the literature is percentage of employees in an agency that are appointees as developed by Lewis (2008). I prefer the measure of politicization from the survey because individual perceptions better measure the relationship between appointees and careerists, such as whether appointees and careerists are working together or whether careerists are excluded from policymaking. Nonetheless, estimating the models of career decisions from the main text is a useful robustness check.

I calculated the percentage of appointees two ways. First, I used the September 2014 FedScope employment data from the U.S. Office of Personnel Management, which corresponds to the beginning of the field period for the survey. The OPM data identifies Schedule C appointees and Non-Career Members of the SES. I coded employees as presidential appointees requiring Senate confirmation if they are on the Executive Schedule Pay Plan and have an Excepted Service Executive Appointment Type. Political appointees that do not require Senate confirmation are not identified in the OPM data. This type of appointment is typically in the Executive Office of the President. I then calculated the percentage of appointees in the total workforce for each agency I can match to the OPM data.[8] This measure is denoted "OPM." Second, I calculated the percentage of appointees in each agency using the survey target population of 14,698 federal executives. This measure, which captures the percentage of appointees in each agency's senior management, is denoted "FYB."[9]

Tables C.31 and C.32 replicate the models of career decisions from the main text using the measures of percentage of total staff (OPM) and senior staff (FYB) that are appointees. The relationship between politicization and exit is not replicated. Importantly, the relationship between expertise investment and politicization is negative using these alternative measures of politicization and coefficients are distinguishable from zero with a high degree of confidence. The replication of the results from the main text is reassuring. Finally, there is suggestive evidence that increasing the proportion

[8]Two notable omissions are the Department of State and the Department of Energy. The Department of State only reports employment data for the entire department. Similarly, the Department of Energy only reports employment data for the Federal Energy Regulatory Commission and the entire department.

[9]Respondents in the Offices of the Secretary and the Office of the Attorney are excluded because the correct denominator cannot be determined from the commercial database.

of appointees in senior management reduces the hours careerists typically work per week. It may be that at agencies with a smaller proportion of appointees careerists must be assigned work so that tasks are completed on time. Whereas a greater proportion of appointees allows delegation of more work to appointees, which results in fewer tasks delegated to careerists and fewer hours worked per week.

Table C.31: Models Estimated with an Alternative Measure of Politicization - OPM

Model	(C87)	(C88)	(C89)	(C90)	(C91)	(C92)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization (OPM)	0.41	−3.40	$-3.12^{\dagger}$	-4.66^{**}	$-4.33^{\dagger}$	-3.23^{**}
	(1.40)	(17.18)	(1.94)	(1.88)	(2.81)	(1.39)
Preference Divergence	0.01	1.36^{**}	0.10^{*}	0.14	$-0.09^{\dagger}$	0.07
	(0.06)	(0.62)	(0.05)	(0.09)	(0.06)	(0.04)
Value Policy Influence	−0.06	0.20	0.32^{***}	0.15^{***}	0.21^{***}	0.20^{***}
	(0.05)	(0.40)	(0.04)	(0.04)	(0.04)	(0.03)
Value Pvt. Sector Job	0.17^{***}	0.36	0.02	0.03	0.07	0.03
	(0.05)	(0.34)	(0.04)	(0.04)	(0.05)	(0.03)
Value Gov't Promotion	−0.04	−0.00	−0.02	0.05	0.01	0.01
	(0.04)	(0.33)	(0.04)	(0.04)	(0.04)	(0.02)
Approached about a Job	0.19^{**}	3.45^{***}	0.12	0.20^{**}	−0.01	0.11^{*}
	(0.09)	(0.82)	(0.09)	(0.08)	(0.09)	(0.06)
Agency-Specific Expertise	−0.01	$-3.85^{\dagger}$	−0.30	−0.27	0.00	−0.22
	(0.40)	(2.38)	(0.37)	(0.36)	(0.36)	(0.24)
SES	0.04	3.43^{***}	0.04	−0.12	0.16^{*}	0.00
	(0.11)	(0.67)	(0.08)	(0.09)	(0.09)	(0.06)
Agency Tenure	-0.01^{**}	0.07^{**}	0.00	0.00	0.00	0.00
	(0.005)	(0.03)	(0.003)	(0.004)	(0.004)	(0.002)
Frequency of Contact with Appointees	0.05	0.78^{***}	0.15^{***}	0.08^{*}	−0.03	0.07^{***}
	(0.04)	(0.26)	(0.03)	(0.04)	(0.03)	(0.02)
Eligible to Retire	0.81^{***}					
	(0.10)					
τ_1 & Con. (C88, C92)	0.03	42.44^{***}	$-0.45*$	−0.35	-0.89^{***}	-0.87^{***}
	(0.25)	(1.66)	(0.24)	(0.22)	(0.24)	(0.15)
τ_2	1.04^{***}		0.60^{***}	0.61^{***}	0.39	
	(0.25)		(0.23)	(0.23)	(0.24)	
τ_3	1.56^{***}		1.52^{***}	1.33^{***}	1.98^{***}	
	(0.25)		(0.22)	(0.23)	(0.25)	
τ_4			2.22^{***}	1.97^{***}		
			(0.21)	(0.24)		
τ_5			3.16^{***}	2.80^{***}		
			(0.22)	(0.25)		
N	606	649	659	659	660	658
N Clusters	132	133	134	134	134	134
R^2		0.15				0.15
Pct. Correctly Predicted	48%		34%	30%	51%	
Wald χ^2	89.02		134.77	49.76	52.24	

Robust standard errors clustered on agencies in parentheses.

* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test.

† significant at $p < .10$ in a one-sided test of H_A: $\beta < 0$; χ^2 tests significant at $p < .01$.

Models C87 and C89 - C91 are ordered probit models. Models C88 and C92 are OLS models.

Table C.32: Models Estimated with an Alternative Measure of Politicization - FYB

Model	(C92)	(C93)	(C94)	(C95)	(C96)	(C97)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization (FYB)	-0.16	$-4.52^{\dagger}$	-0.65^{*}	$-0.91^{\dagger}$	-1.29^{***}	-0.69^{**}
	(0.49)	(3.00)	(0.37)	(0.57)	(0.40)	(0.27)
Preference Divergence	-0.01	1.06^{*}	0.05	0.07	-0.12^{**}	0.02
	(0.06)	(0.58)	(0.05)	(0.09)	(0.06)	(0.04)
Value Policy Influence	-0.05	0.22	0.30^{***}	0.15^{***}	0.20^{***}	0.19^{***}
	(0.05)	(0.36)	(0.04)	(0.04)	(0.04)	(0.02)
Value Pvt. Sector Job	0.15^{***}	0.59^{**}	0.04	0.05	0.07	0.04
	(0.04)	(0.29)	(0.04)	(0.04)	(0.05)	(0.02)
Value Gov't Promotion	-0.01	-0.20	-0.04	0.02	0.01	-0.00
	(0.04)	(0.29)	(0.03)	(0.04)	(0.04)	(0.02)
Approached about a Job	0.28^{***}	3.49^{***}	0.15^{*}	0.11	0.02	0.10^{*}
	(0.09)	(0.75)	(0.08)	(0.08)	(0.09)	(0.05)
Agency-Specific Expertise	0.22	-3.44^{*}	$-0.46^{\dagger}$	-0.17	-0.04	-0.25
	(0.36)	(2.04)	(0.34)	(0.33)	(0.35)	(0.22)
SES	0.12	3.12^{***}	0.03	-0.15^{*}	0.17^{**}	-0.01
	(0.10)	(0.70)	(0.08)	(0.09)	(0.09)	(0.06)
Agency Tenure	-0.01^{***}	0.10^{***}	0.00	0.00	0.00	0.00
	(0.005)	(0.03)	(0.003)	(0.004)	(0.004)	(0.002)
Frequency of Contact with Appointees	0.02	0.91^{***}	0.18^{***}	0.13^{***}	0.00	0.10^{***}
	(0.04)	(0.28)	(0.03)	(0.04)	(0.03)	(0.02)
Eligible to Retire	0.84^{***}					
	(0.10)					
τ_1 & Con. (C93, C97)	0.05	42.57^{***}	-0.62^{***}	-0.39^{*}	-1.04^{***}	-0.78^{***}
	(0.23)	(1.50)	(0.22)	(0.21)	(0.22)	(0.14)
τ_2	1.09^{***}		0.46^{**}	0.52^{**}	0.29	
	(0.23)		(0.21)	(0.21)	(0.22)	
τ_3	1.63^{***}		1.40^{***}	1.27^{***}	1.93^{***}	
	(0.23)		(0.20)	(0.22)	(0.23)	
τ_4			2.09^{***}	1.87^{***}		
			(0.19)	(0.22)		
τ_5			3.11^{***}	2.75^{***}		
			(0.20)	(0.24)		
N	678	721	730	730	730	728
N Clusters	150	150	151	151	151	151
R^2		0.15				0.16
Pct. Correctly Predicted	41%		34%	31%	53%	
Wald χ^2	104.86		144.06	53.72	63.25	

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test.
† significant at $p < .10$ in a one-sided test of H_A: $\beta < 0$; χ^2 tests significant at $p < .01$.
Models C92 and C94 - C96 are ordered probit models. Models C93 and C97 are OLS models.

C.14.5 The Parallel Regression Assumption

Ordered probit models assume the coefficients on the independent variables do not vary across response categories. As discussed by Woolridge,[10] this arises from the underlying latent variable formulation. Essentially, the intercept shift between cut points inside the nonlinear cumulative distribution function determines the differences in predicted probabilities across categories if the independent variables are held constant.

I use generalized ordered probit models as implemeted by the `gologit2` package to evaluate the validity of the parallel regressions assumption. As explained by Williams (2006),[11] the `autofit` option in `gologit2` goes through an iterative process of fitting a series of binary probit regressions that group categories in sequence of their order and then executes a series of Wald tests on each variable to determine whether its coefficients vary across these binary models. If at least one coefficent has an insignificant Wald test, then the coefficent with the largest p-value is constrained to be the same across response categories and the process is repeated until all coefficients that have an insignificant test are constrained.

Table C.33 gives the coefficients on the key independent variable for each ordered probit model from the main text estimated using a generalized ordered probit model that relaxes the parallel regression assumption for variables that may violate it using a 95% level of confidence. The coefficients on the independent variables of interest do not violate the parallel regression assumption as demonstrated by the p-values for the tests of each coefficient. (The null hypothesis is that the coefficients are equal across models.) Importantly, there is little difference in predicted probabilities shown in Figure 1 and predicted probabilities estimated using the generalized ordered probit models. Specifically, the differences in predicted probabilities are less than 1.3 percentage points, and often less than 1 percentage point. Marginal effects remain distinguishable from zero with a high degree of confidence.

[10] See pages 658-659 of "Econometric Analysis of Cross Section and Panel Data, Second Edition" by Woolridge for additional discussion.

[11] See Williams, Richard. 2006. "Generalized ordered logit/partial proportional odds models for ordinal dependent variables". *The Stata Journal* 6 (1): 58-82. For discussion of the probit link function, see: http://www3.nd.edu/ rwilliam/gologit2/gologit2.pdf.

Table C.33: Models of Intent to Exit and Expertise Investment: Evaluating the Parallel Regression Assumption

Model	(C98)	(C99)	(C100)	(C101)	(C102)	(C103)
Dependent Variable	Pol	Pol	Exit	Outside	SME	Training
Divergence	0.14^{***}	-0.02				
(Std. Err.)	(0.04)	(0.10)				
Divergence^2		0.07^{*}				
		(0.04)				
Politicization			0.07^{**}	-0.09^{**}	0.00	-0.09^{**}
			(0.03)	(0.04)	(0.04)	(0.04)
Wald Test P-value (Coefficient)	0.08	0.17	0.14	0.15	0.37	0.34
Wald Test P-value (Divergence^2)		0.07				

Coefficients are estimated using a generalized ordered probit model that relaxes the parallel regression assumption for variables that may violate it. For each model, the variables with coefficients that are not constrained across models are: Models C98 and C99: SES and Frequency of Contact with Appointees; Model C100: Retirement Eligibility; Model C101: Agency-Specific Expertise; Model C102: Preference Divergence; Model C103: Approached about a Job and Agency Tenure. * significant at $p < .10$, $^{**}p < .05$, $^{***}p < .01$ in a two-sided test. Robust standard errors clustered on agencies in parentheses, except in Model POL1. Clustering the standard errors results in one observation that has a negative predicted probability with one outcome, which is a problem with these generalized models. Therefore, I use robust standard errors without clustering for this model. Clustering the standard errors also rejects the null hypothesis that the coefficient on preference divergence meets the parallel regressions assumption (p=0.047). Importantly, using robust standard errors without clustering generates the same coefficient and standard error shown in the main text.

C.15 Testing for Conditional Effects of Preference Divergence and Value of Policy Influence

Theory suggests two conditional hypotheses about the effect of politicization on exit intention and investment frequency. First, as the policy influence of political appointees increases relative to the influence of senior career civil servants, the more agency policymaking will be determined by political appointees. If appointees mostly determine policy, then careerists will suffer greater utility loss from agency policymaking as preference divergence between appointees and careerists increases. This yields the following hypotheses:

H_{2a}: The positive association between the likelihood that civil servants' express intent to exit the agency and politicization should increase as the preference divergence between civil servants and appointees increases.

H_{3a}: The negative association between civil servants' frequency of investment in policy expertise and politicization should decrease as the preference divergence between civil servants and

appointees increases.

Second, the measure of politicization captures actions by appointees that limit career civil servant's policy influence (i.e., policy discretion). Therefore, politicization reduces utility only for civil servants who care about policy, and the losses should be greater the more the civil servants care about policy. This yields the following hypotheses:

H_{2b}: The positive association between the likelihood that civil servants' express intent to exit the agency and politicization should increase as the value civil servants place on policy influence increases.

H_{3b}: The negative association between civil servants' frequency of investment in policy expertise and politicization should decrease as the value civil servants place on policy influence increases.

Tables C.34 and C.35 contain models testing these conditional hypotheses. There is little support for any of the hypotheses. The coefficients on the interaction of politicization and preference divergence are not distinguishable from zero with a high degree of confidence in any model and they are sometimes incorrectly signed. The coefficients on the interaction of politicization and the value civil servants place on policy influence are generally not distinguishable from zero with a high degree of confidence. The exceptions are the model of expertise investment by attending training and seminars and the model of latent expertise investment (as measured by a factor score). While this is suggestive evidence supporting H_{3b}, at least for some investment tasks, a stronger claim requires evidence that exhibits greater consistency across models.

Table C.34: Effect of Politicization Conditional on Preference Divergence

Model	(C104)	(C105)	(C106)	(C107)	(C108)	(C109)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization	0.07	0.46	−0.04	0.03	−0.14**	−0.03
	(0.05)	(0.40)	(0.06)	(0.06)	(0.05)	(0.04)
Preference Divergence	−0.02	1.15*	0.10*	0.07	−0.14**	0.03
	(0.07)	(0.59)	(0.06)	(0.09)	(0.06)	(0.04)
Pol. × Pref. Div.	0.00	−0.46	−0.05	−0.04	0.05	−0.02
	(0.05)	(0.34)	(0.04)	(0.05)	(0.04)	(0.03)
Value Policy Influence	−0.06	0.31	0.32***	0.18***	0.20***	0.20***
	(0.05)	(0.36)	(0.04)	(0.04)	(0.04)	(0.03)
Value Pvt. Sector Job	0.16***	0.42	0.02	0.05	0.04	0.03
	(0.04)	(0.30)	(0.04)	(0.04)	(0.04)	(0.02)
Value Gov't Promotion	−0.01	−0.08	−0.01	0.05	0.01	0.01
	(0.04)	(0.28)	(0.03)	(0.04)	(0.04)	(0.02)
Approached about a Job	0.31***	3.45***	0.12	0.13∗	0.05	0.10∗
	(0.09)	(0.72)	(0.08)	(0.08)	(0.08)	(0.05)
Agency-Specific Expertise	0.23	−3.15	−0.47	0.00	−0.03	−0.20
	(0.36)	(2.16)	(0.34)	(0.33)	(0.34)	(0.22)
SES	0.14	2.86***	0.04	−0.12	0.14	−0.01
	(0.10)	(0.66)	(0.08)	(0.09)	(0.09)	(0.06)
Agency Tenure	−0.01**	0.09***	0.00	0.00	0.00	0.00
	(0.005)	(0.03)	(0.003)	(0.004)	(0.004)	(0.002)
Frequency of Contact with Appointees	0.01	0.74***	0.18***	0.09**	−0.02	0.09***
	(0.04)	(0.25)	(0.03)	(0.04)	(0.03)	(0.02)
Eligible to Retire	0.81***					
	(0.09)					
τ_1 & Con. (C105, C109)	0.05	42.45***	−0.55***	−0.25	−0.99***	−0.87***
	(0.24)	(1.51)	(0.21)	(0.20)	(0.21)	(0.13)
τ_2	1.09***		0.60***	0.65***	0.32	
	(0.24)		(0.20)	(0.21)	(0.21)	
τ_3	1.63***		1.54***	1.40***	1.92***	
	(0.25)		(0.19)	(0.21)	(0.22)	
τ_4			2.26***	1.99***		
			(0.18)	(0.22)		
τ_5			3.27***	2.83***		
			(0.19)	(0.23)		
N	710	753	765	765	765	763
N Clusters	159	160	161	160	161	160
R^2		0.13				0.15
Pct. Correctly Predicted	45%		35%	30%	52%	
Wald χ^2	110.91		195.82	49.89	47.27	

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, ** $p < .05$, *** $p < .01$ in a two-sided test.
χ^2 tests significant at $p < .01$.
Models C104 and C106 - C108 are ordered probit models. Models C105 and C109 are OLS models.

Table C.35: Effect of Politicization Conditional on Value of Policy Influence

Model	(C110)	(C111)	(C112)	(C113)	(C114)	(C115)
Dependent Variable	Exit	Effort	Outside	SME	Training	Factor
Politicization	0.11	0.47	0.00	0.06	0.15*	0.04
	(0.08)	(0.74)	(0.09)	(0.10)	(0.08)	(0.06)
Pol × Policy Infl.	−0.02	−0.15	−0.03	−0.02	−0.08***	−0.03*
	(0.03)	(0.23)	(0.03)	(0.03)	(0.03)	(0.02)
Preference Divergence	−0.02	0.86	0.06	0.05	−0.11**	0.02
	(0.06)	(0.58)	(0.05)	(0.08)	(0.05)	(0.04)
Value Policy Influence	−0.05	0.37	0.34***	0.19***	0.23***	0.22***
	(0.05)	(0.38)	(0.04)	(0.04)	(0.04)	(0.03)
Value Pvt. Sector Job	0.16***	0.42	0.02	0.05	0.05	0.03
	(0.04)	(0.30)	(0.04)	(0.04)	(0.04)	(0.02)
Value Gov't Promotion	−0.01	−0.07	−0.01	0.05	0.01	0.01
	(0.04)	(0.28)	(0.03)	(0.04)	(0.04)	(0.02)
Approached about a Job	0.31***	3.46***	0.12	0.13*	0.05	0.10*
	(0.09)	(0.72)	(0.08)	(0.08)	(0.08)	(0.05)
Agency-Specific Expertise	0.23	−3.34	−0.50	−0.01	−0.03	−0.22
	(0.36)	(2.15)	(0.34)	(0.33)	(0.35)	(0.22)
SES	0.14	2.86***	0.04	−0.12	0.15*	−0.01
	(0.10)	(0.67)	(0.08)	(0.09)	(0.09)	(0.06)
Agency Tenure	−0.01**	0.09***	0.00	0.00	0.00	0.00
	(0.005)	(0.03)	(0.003)	(0.004)	(0.004)	(0.002)
Frequency of Contact with Appointees	0.01	0.74***	0.18***	0.09**	−0.02	0.09***
	(0.04)	(0.25)	(0.03)	(0.04)	(0.03)	(0.02)
Eligible to Retire	0.81***					
	(0.10)					
τ_1 & Con. (C111, C115)	0.07	42.48***	−0.53**	−0.24	−0.86***	−0.90***
	(0.24)	(1.50)	(0.21)	(0.22)	(0.21)	(0.14)
τ_2	1.11***		0.61***	0.66***	0.46**	
	(0.24)		(0.21)	(0.22)	(0.21)	
τ_3	1.65***		1.55***	1.41***	2.07***	
	(0.25)		(0.20)	(0.23)	(0.22)	
τ_4			2.28***	2.00***		
			(0.19)	(0.23)		
τ_5			3.28***	2.84***		
			(0.20)	(0.24)		
N	710	753	765	765	765	763
N Clusters	159	160	161	160	161	160
R^2		0.13				0.16
Pct. Correctly Predicted	45%		35%	29%	52%	
Wald χ^2	111.93		192.38	50.75	57.19	

Robust standard errors clustered on agencies in parentheses.
* significant at $p < .10$, ** $p < .05$, *** $p < .01$ in a two-sided test.
χ^2 tests significant at $p < .01$.
Models C110 and C112 - C114 are ordered probit models. Models C111 and C115 are OLS models.