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PRESIDENTIAL POLICYMAKING AND CIVIL SERVICE RESPONSE

Charles Cameron
John M. de Figueiredo

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ABSTRACT

We formally model the impact of presidential policymaking on the willingness of bureaucrats to exert effort and stay in the government. In the model, centralized policy initiative by the president demotivates policy-oriented bureaucrats and can impel them to quit rather than implicate themselves in presidentially imposed policies they dislike. Those most likely to quit are a range of moderate bureaucrats. More extreme bureaucrats may be willing to wait out an incumbent president in the hope of shaping future policy. As control of the White House alternates between ideologically opposed extreme presidents, policy-minded moderates depart from bureaucratic agencies leaving only policy extremists or poorly performing "slackers." The consequences for policy making are substantial. Despite these adverse consequences, presidents have strong incentives to engage in centralized policymaking.

Charles Cameron
Princeton University
Woodrow Wilson School
030 Corwin Hall
Princeton, NJ 08544-1013
ccameron@princeton.edu

John M. de Figueiredo
The Law School and Fuqua School
Duke University
210 Science Drive, Box 90360
Durham, NC 27708
and NBER
jdefig@duke.edu

I.   Introduction

In November 2017, President Trump announced, "I'm the only one that matters" in setting U.S. foreign policy (Chappell 2017). This comment culminated a year of departures of high ranking civil servants and diplomats from the State Department. One report noted that over one-half of career diplomats in the two highest ranks of the Foreign Service had departed government service and that lower level diplomats had their ranks depleted by 17% (Stephenson 2017). High level non-diplomatic civil servants also departed, such as the Director of the Diplomatic Security Service (DSS) who had served in the DSS for 30 years, the award-winning Acting Director of the Bureau for International Organization Affairs, and the careerist Assistant Secretary of State of International Narcotics and Law Enforcement Affairs with 38 years of service. Departing and former civil servants characterized the administration as having "complete and utter disdain for our expertise," creating a situation that is "untenable"[1], and leading to a "[perilous] political climate" for career civil servants (Lynch and Gramer 2017).

Meanwhile, similar events unfolded at the Environmental Protection Agency (EPA). In July 2017, President Trump's White House Office of Management and Budget (OMB) detailed when and how executive agencies would repeal numerous Obama-era environmental regulations regarding air pollution, water pollution, fossil fuel extraction, and climate change (Cama 2017). During the same time, there was a mass exodus of senior level civil servants from the EPA. The Acting Head of the Office of Water with 37 years of EPA experience, the Acting Head of the Office of Research and Development with 33 years of scientific research leadership at the agency, and an award-winning Senior Executive Service scientist with 40 years of government service, all departed the EPA. Some former EPA employees decried the perceived anti-environmental policies of the Trump Administration and refused to be part of its implementation. Others were said to soldier on, providing the politicians the "facts" necessary to make good decisions (Davidson 2017a). One departing scientist noted, "[Many] EPA staff are becoming increasingly alarmed about the direction of the EPA... The policies

this Administration is advancing are contrary to what the majority of the American people want the EPA to accomplish."[2]

Stories of this kind abound in the Trump era. But are the dramatic departures merely artifacts of one extraordinary administration or are they indicative of patterns, perhaps less dramatic but nonetheless discernible, at other times? In fact, recent empirical research detects an increase in departures among civil servants after a party change, particularly at the highest levels and among those whose views differ most dramatically from the new president (Bolton et al 2016, Doherty et al 2016, see also Bertelli and Lewis 2013, Richardson 2017). Thus, the Trump examples may well be just extreme instances of pre-existing practices.

One is then led to ask: What logic drives the departure patterns? And, what are the consequences? First, what calculations underlie the stay/go decisions of civil servants? For example, should professionals wait out a new president, hoping for a new and better successor? Should they stay and try to make a difference in the current administration? Or, should they quit and leave with clean hands rather than implement policies they find misguided? Second, what happens to policy making when many motivated civil servants depart? The new empirical research, while fascinating or even disturbing, leaves unclear the mechanisms at play. Indeed, relatively little effort has been devoted to building theory about the career decisions of civil servants in highly politicized environments.

In this paper we address this theoretical lacuna. We study the effects of centralized presidential policymaking on work, careers, and policy in federal agencies. We develop a formal model of authority in public organizations that reflects actors' commitment to policy, their rational decisions about work effort, and their strategic calculations about careers. The paper examines how presidents, by centrally directing policymaking, dishearten and demotivate policy-oriented bureaucrats ("zealots"), who would otherwise willingly exert effort and initiative to innovate new policy. Centralization thus undermines bureaucratic initiative. However, the effects of centralization are even more deleterious over time. In the model, zealots on the opposite end of the ideological spectrum from the president resign

their position because departing affords them clean hands – distasteful policies that will be implemented regardless of the zealot's presence or absence are less abhorrent if the agent is not directly implicated in their administration. However, the model uncovers two dynamics mitigating policy-induced departures. The first, which we dub "wait them out" (WTO), occurs when a zealous bureaucrat, faced with a hostile president who forces distasteful policy on the agency, nonetheless stays because of the possibility of implementing a better policy under a friendlier president in the future. It is extremist zealots opposed to the current president who are most inclined to WTO, which requires a turn-over in party control of the presidency. The second dynamic, which we call "I can make a difference" (IMD) occurs when a very moderate zealot, faced with a friendly president who insists on an extreme policy, remains in the agency because she may be able to craft a more moderate policy under the friendly president in the future. It is moderate bureaucrats who are the players in IMD, which requires continuity in party control of the presidency.

Despite the WTO and IMD dynamics, policy-induced departures –"quitting in protest" – are frequent among zealous civil servants, at least in the model. Policy-induced departures then strip an agency of its most motivated employees, those whose initiative generates new policies when the president's centralized apparatus fails to do so. Moreover, the model shows that in the longer run, as party control of the presidency alternates and presidents press policies on agencies, the departure of moderate zealous bureaucrats tends to hollow out the agencies. In starkest form, only two types of civil servants remain in the government: highly motivated extremist zealots on the left in some agencies and the right in others, and moderate slackers who exert little effort on policy innovation.

Not surprisingly, centralized policymaking and quitting in protest have major implications for expected policy in the agencies, which we detail. The model further indicates that, despite the adverse consequences of departures, centralized policymaking is in the president's short-term interest. Hence, presidents have an incentive to boost resources and capacity at the center.

II. The Rise of the Centralized Presidency

Political scientists have extensively documented the rise and growth of the centralized presidency (Schlesinger 1973; Rudalevige 2005). The Great Depression and Second World War impelled a dramatic expansion of the administrative state and presidential power (Higgs 1987). Congress and presidents created scores of programs and agencies staffed by hundreds of thousands of new federal employees. Concerned about weaknesses in administration, President Roosevelt appointed the President's Committee on Administrative Management (the Brownlow Committee) to make recommendations about how to improve the administration of government. The Committee recommended the creation of a permanent Executive Office of the President (EOP) and an expansion of the White House staff. The Committee proposed that the EOP include the White House Office, along with its expanded staff, and other staff agencies such as the Bureau of the Budget. To a great extent, these recommendations became reality (Burke 1992, Dickinson 1997, Hart 1992, Milkis and Nelson 2012). Later presidents and Congresses continued to expand the EOP, adding new employees and units such as the National Security Council and Council of Economic Advisers (Burke 1992). The expansion of the EOP reflects a frank admission by the nation's policymakers that the role of the president in the constitutional system has changed. As the scope, volume and complexity of government work has expanded, Congress has increasingly delegated responsibility to the executive establishment to solve national problems (Epstein and O'Halloran 1999; Huber and Shipan 2002).

The burgeoning of the institutional presidency allows presidents to play a much greater role in policymaking than formerly, not only through increased control over budgets and legislation but also through appointments and direct presidential action such as executive orders, presidential memoranda, presidential findings, and so on (de Figueiredo and Stiglitz 2017; Fisher 2000; Howell 2003; Lewis 2008; Neustadt 1954; Weko 1995). A well-developed literature examines how unilateral actions by the president play out in a separation of powers context (Cooper 2002; Deering and Maltzman 1999; Howell 2003; Mayer 2001). This litera-

ture argues that the president, by administratively altering a status quo policy yet keeping it within an expansive congressional gridlock region, can advance his policy interests while assuring that Congress cannot offer an effective legislative riposte. Thus the administrative presidency emerges as a powerful tool of executive policymaking (Nathan 1975; Waterman 2009, but see Chiou and Rothenberg 2017 for a partial demurral).

The extent of presidential centralized policymaking has varied from administration to administration as well as across policy areas. This is no surprise since survey research, both individual and expert, reveals significant ideological variation across the agencies in the executive establishment (see, e.g., Aberbach et al. 1981, Clinton et al 2012). Such variation implies that the choice of whether to centralize or rely on a particular agency is apt to be consequential for outcomes in a specific policy domain, and apt to differ in application across presidents of different parties (Rudalevige 2002).

Despite important insights about presidents' use of unilateral policymaking, scholars of the administrative presidency have placed little emphasis on the incentive effects in the agencies so often by-passed by the White House. But, a relevant line of inquiry was initiated in organizational economics beginning with a notable paper by Aghion and Tirole (1997). They develop a model of formal authority in organizations (who has the right to decide) and real authority (who has effective control over decisions). A subordinate may have real authority because she maintains an information advantage over a superior, despite the superior having formal decision rights. The superior can exercise control through his decision rights but, importantly, the exercise of those decision rights may seriously degrade the initiative of the subordinate to work hard.[3]

Within political economy, several scholars have explored the demotivating consequences of a political principal's meddling in agent decisions. For example, if courts frequently veto agency regulations, agencies will respond by reducing their policy initiative (Bueno de Mesquita and Stephenson 2007, Stephenson 2007). Similarly, limited writs of statutory discretion from Congress may discourage policy-oriented bureaucrats from investing in expertise

and may even induce them to leave the agency (Gailmard and Patty 2007).

In this paper, we bring these insights to bear on the administrative presidency. We study the effects of centralized presidential policymaking on policy-induced departures of personnel in public agencies, on the policymaking effort in agencies, on expected policy, and on the long-run capacity of agencies to innovate policy. We also consider when, and to what extent, presidents benefit from centralized policymaking.

III. The Model

A. Overview

The model features two players, a President and a Bureaucrat, who interact to determine policies in two distinct periods. The model distinguishes policy targets, policy proposals, and final policies. A *policy target* is a contemplated action under consideration by a governmental actor or agency, but a policy target is not a concrete actionable plan for achieving the target. Writing such a plan requires incurring costs. That is, the actor must study the issue, learn which government instruments are effective, figure out how to cast ideas into legislative or rulemaking language, and so on. A *policy proposal* is a government-sanctioned approved plan of action, ready for implementation, e.g., a public law, an agency rule, a majority opinion from an appellate court. A *final policy* is an adopted policy proposal that has the force of law. Each of these entities are treated as a point on a line; additionally, there is a status quo in each period. Presidents have preferences over policies and a clearly identifiable most-preferred policy. An agency Bureaucrat may be policy-minded or, instead, may be indifferent to policies and thus only seek employment.[4] Following Gailmard and Patty 2007, we dub the former types "zealots" and the latter type "slackers."

Both the Bureaucrat and President can choose to exert costly effort in an attempt to convert a policy target into a policy proposal. Both actors may succeed in crafting a policy proposal, only one actor may succeed, or neither may succeed. Given one or more policy proposals and the status quo, the President decides which proposal, or the status

quo, becomes the final policy. The Bureaucrat then faces a stark choice: either participate in implementing the final policy, or quit to avoid joining in. (The model does not allow the Bureaucrat to sabotage, undermine, or otherwise subvert the selected policy, which will be carried out even if the Bureaucrat quits).[5] A presidential election occurs after the first period, so the incumbent President may stay or a new and more congenial chief executive may emerge; and, the policymaking process recurs in the second period. Hence, the shadow of the future can affect a Bureaucrat's career decision in the first period. Endogenously determined within the model are the following elements: proposal development effort by the President and by the Bureaucrat; policy proposals; final policies; quit/stay decisions by bureaucrats with different policy preferences; and the probability an agency is ultimately populated by slackers or zealots. The model allows an analysis of whether and when the creation of a capacity for centralized policy development actually advantages the President, taking into account its effects on bureaucrats.

Two features of this simple model deserve elaboration: its treatment of proposal development, and the rationale for a zealous Bureaucrat to quit the agency rather than participate in a detested policy.

In the model – and in real life – actors may know what final policy they desire, for instance, a dramatic reduction in high school dropout rates among low income students, peace in the Middle East, or the end of the opioid crisis. But these are just policy targets; actors may not be at all clear how to craft a proposal that accomplishes this end. Agency employees and White House staff exert effort by undertaking or commissioning studies, collecting statistics, convening experts, reviewing best practices, studying history, drafting white papers, consulting with agency counsel, and circulating inter-agency memos. But all this work may avail them naught: despite intense labor, the innovator's efforts may fail to develop a policy proposal that can withstand legal challenge, has a realistic chance of success, be feasible to administer, or achieve its goals within available resources. Contrary to the Apollo 13 mantra, failure is always an option (Kranz 2001).[6]

In practice, actors who fail at proposal development may substitute incremental changes for transformative ones or symbolic actions for substantive ones. The model, however, treats proposal development in a very stark way: the probability of turning a given policy target into a concrete policy proposal is proportional to the effort expended, and failure results in no policy proposal at all. That is, effort $e \in [0, 1]$ is the probability of being able to offer a policy proposal at a selected policy target. One can view this very simple approach as a highly reduced-form version of more elaborated search or development technologies (see for instance Callander 2011).[7]

A second feature of the model leads to the following question: Why would a zealous bureaucrat quit the government rather than participate in a loathed policy, especially if quitting does not alter the final policy outcome? The answer is: an unattractive policy imposed on the agency by the president is not just painful for policy-minded employees, actually participating in the bad policy oneself can be extraordinarily distasteful. An agent who opposes the policy receives substantial disutility from having to actually implement it. Quitting may not change the situation on the ground but it allows the bureaucrat to maintain "clean hands" and sleep at night. The examples in the beginning of the paper allude to the clean hands motivation.[8] Maintaining one's moral integrity comes at a cost however: one is no longer in the policy game and hence unable to affect policy in the future. This trade-off is at the heart of the model.

The model treats clean hands in graphic fashion: either one gains clean hands by quitting or receives dirty hands by staying. Though more complex alternatives are possible, this dichotomy brings the key strategic elements to the fore with clarity and tractability. We now turn to a formal description of the model.

B. Set-Up

A final policy is an action undertaken by the President's administration, implemented directly by the Bureaucrat's agency at the direction of the President, for example in response

to an executive order, presidential memorandum, or presidential directive to the agency. We employ the standard formalization in which a policy, x, is a point on a closed and bounded subset of the real line $X = [-z, z]$. A distinguished policy is the status quo $q = 0$. The President is either L or R with policy utility $\psi^i(x; p)$ defined over X with ideal policy $p = \ell < 0$ if $i = L$ and $p = r > 0$ if $i = R$. Bureaucrats are either slackers or zealots; the former cares only about wage utility while the latter also derives utility from policy, especially the implementation of an attractive policy. A zealous Bureaucrat B has policy utility $\psi^B(x; b)$ and ideal policy $b > 0$. (There is a mirror set of bureaucrats with ideal policies less than zero; the results below extend straightforwardly to the mirror cases.) We employ subscripts to denote time periods, either 1 or 2. The probability of converting a policy target into a policy proposal in Period t is $e_t^i \in [0, 1]$ for the President and $e_t^B \in [0, 1]$ for the Bureaucrat. In words, the two actors employ costly effort in an attempt to create policy proposals. Thus, an actor may attempt to devise a policy proposal delivering (say) her ideal policy outcome (the policy target); but the effort may fail to bear fruit. Only the President can approve a final policy, so the President has both formal and real authority (Aghion and Tirole 1997, Baker, Gibbons, and Murphy 1999).

The model has two periods; each period has seven stages. We assume an incumbent zealous Bureaucrat at the start of Period 1. In Period 1:

1. Nature sets the status quo policy $q = 0$ which is common knowledge to the players, and determines the winner of the presidential election (either L or R) using common-knowledge probability π.

2. The incumbent Bureaucrat B (a zealot in Period 1) and the elected President simultaneously choose policymaking efforts e_1^B and e_1^i ($i = (L, R)$) attempting to create a policy proposal.

3. The efforts of the Bureaucrat and the President succeed with probabilities e_1^B and e_1^i respectively.

4. B offers the President a policy proposal $x_1^B \in X = [-z, z]$. If the Bureaucrat's proposal effort at x_1^B succeeded, B's offer reveals $\psi^i(x_1^B)$ to the President via hard information but reveals nothing about the value of any other policy proposal. If the Bureaucrat's proposal effort failed, the Bureaucrat does not know the policy value of any proposal other than q and hence the proposal reveals nothing to the President about its utility value.

5. The President chooses the final policy $x_1^F \in X$. If the final policy is q or the product of a successful proposal attempt by either player, final policy x_1^F is the associated policy. If not, x_1^F results from a draw from a uniform distribution over the policy space.

6. After the President's policy choice, B may either stay in the public service $(g_1 = 0)$ or depart (go) for the private sector, quitting in protest $(g_1 = 1)$. If B quits, she is replaced by another bureaucrat (a slacker) and x_1^F is nonetheless implemented.[9]

7. Players receive per-period payoffs.

Stages 1-7 repeat in Period 2 with either the same incumbent zealous bureaucrat if she stayed in Period 1 or her slacker replacement if she exited, and either a president with the same policy orientation as in Period 1 or a new president with the opposing policy orientation depending on the outcome of the Period 2 election.

C. Policy Preferences and the Four Regions

In the model Presidents and zealous bureaucrats care about policy. We employ the following single-peaked per-period policy evaluation function for the President and Bureaucrat:

$$\psi^i(x, p) = |p - q| - |p - x|$$
$$\psi^B(x, b) = |b - q| - |b - x|$$

where $i = (L, R)$ and $p = \ell < 0$ if $i = L$ and $p = r > 0$ if $i = R$. These "tent" utility
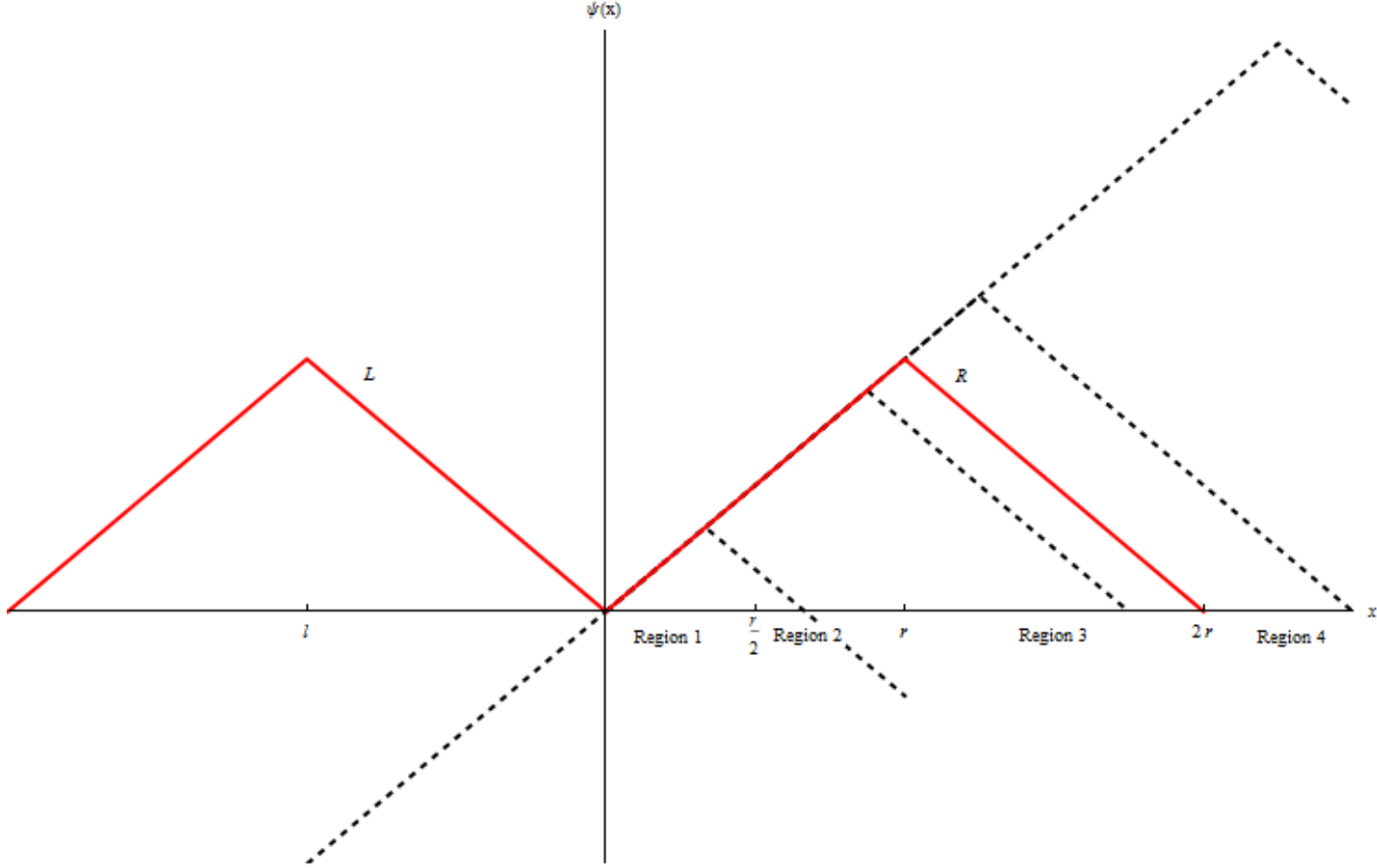
Figure 1: Policy Utility for President and Bureaucrat. Utility for the President (L and R) is show with solid lines, that of Bureaucrats with dashed lines. The ideal point of L is ℓ and that of R is r. The four regions of R-side bureaucrats are labeled. In addition, utility functions for bureaucrats in each region are shown.

functions are normalized so that the utility value of the status quo $q = 0$ is zero for all players, that is $\psi^i(q) = \psi^B(q) = 0$ (see Matthews 1989). Because these von Neumann-Morgenstern utility functions are simply an affine transformation of the more familiar zero-ideal point normalized utility functions, they are fully equivalent to them. However, the zero-status quo normalization affords very substantial savings in algebraic complexity in this setting.

Figure 1 illustrates the policy evaluation functions. In the figure, each curve is a policy evaluation function $\psi^i(.)$ for a specific actor (the figure includes 6 such curves). The two solid curves indicate the policy evaluation function of an illustrative $L-$President and an illustrative $R-$President. The dashed lines indicate policy evaluation functions for four

different bureaucrats. As shown, each actor has a most-preferred policy, the argmax of $\psi^i(x)$. The most-preferred policy for an L-President is ℓ and that for an R-President is r (both points are indicted in the figure), while that for a Bureaucrat is denoted b (not shown in the figure). Each evaluation function is scaled so that the utility value of the status quo – the origin in the figure – is zero. Each actor also evaluates a policy t^i as equivalent to the status quo. For an L-President, $t^L = 2\ell$, for an $R-$president $t^R = 2r$, and for a bureaucrat $t^B = 2b$. A President (weakly) prefers policies in the interval defined by q and t^i to q ($i = R, L$ as appropriate) and a Bureaucrat (weakly) prefers policies in the interval defined by q and t^B to q. Thus, there are a range of policies an $R-$President and an $R-$side Bureaucrat both agree are preferable to the status quo, but there are no policies an $L-$President and an $R-$side Bureaucrat agree are preferable to the status quo.

It proves very convenient to define four regions in the policy space, defined by the relative placements of the ideal policies of the $R-$President and the Bureaucrat. The four regions, which are labeled in Figure 1, are:

- Region 1: $0 < b < r/2$."Very moderate bureaucrats". In this region, implementation of an $R-$President's ideal policy r is worse for B than retention of the status quo $q = 0$. However, implementation of B's ideal policy is better for an $R-$President than the status quo.

- Region 2: $r/2 \leq b \leq r$."Somewhat moderate bureaucrats." In this region, for both actors implementation of the other actor's ideal policy is better than retention of the status quo. However, B is somewhat more moderate than the $R-$President.

- Region 3: $r < b < 2r$. "Somewhat extreme bureaucrats." In this region, for both actors implementation of the other actor's ideal policy is better than the status quo. However, B is somewhat more extreme than R.

- Region 4: $b \geq 2r$. "Very extreme bureaucrats". In this region, implementation of B's ideal policy is worse for the $R-$President than retention of the status quo. However,

implementation of R's ideal policy is better for B than the status quo.

Also important is the hostile president configuration, in which $\ell < q \leq b$ for Bureaucrats in all four regions. Figure 1 displays a policy evaluation function for a Bureaucrat in each of the four regions (that is, the Bureaucrat's ideal policy lies within the indicated interval). For instance, the dashed line whose peak is closest to the origin displays the policy evaluation function of a Region 1 Bureaucrat.

The Bureaucrat's utility depends not just on the policy evaluation function $\psi^B(x, b)$ but also on how much effort she exerts and whether she has clean hands.[10] Specifically

$$u^B(x, e_t^B, b, \theta) = \begin{cases} \theta \psi^B(x, b) - c\left(e_t^B\right) & \text{if } B \text{ remains in the public sector} \\ -c\left(e_t^B\right) & \text{if } B \text{ quits} \end{cases}$$

where θ is the indicator variable for zealot ($\theta = 1$) versus slacker ($\theta = 0$). The function $c(\cdot)$ captures the cost of expending effort innovating policy proposals while employed in the public sector; henceforth we assume $c\left(e_t^B\right) = \left(e_t^B\right)^2$. We assume bureaucrats are forward-looking and make career decisions in the shadow of the future while the incumbent president perceives "the future is now," that is, focuses only on payoffs in the current period. Both positions find support in empirical studies.[11]

IV. Policy Centralization and Agency Response

We begin by examining a natural baseline, the absence of centralization, a scenario that corresponds roughly to the pre-WWII, pre-Brownlow Committee presidency. We then turn to the centralization game. We focus throughout on policymaking when the President is unconstrained by Congress, e.g., a unified party President. (We briefly discuss the implications of constraints from the other branches in Section VI.) Our discussion focuses primarily on action in Period 1 when the shadow of the future affects the stay/go decision of the Bureaucrat. To appreciate the impact of the shadow of the future, however, one needs an

understanding of play in Period 2.

A. Baseline: No Presidential Centralization

Consider the game when only the Bureaucrat can generate policy proposals. This game is a variant of a Romer-Rosenthal game since, conditional on successful proposal development by the Bureaucrat (assumed a zealot), she will be able to make an offer to a President who can only accept or decline (Romer and Rosenthal 1978). However, the costly, probabilistic effort by the Bureaucrat alters the standard analysis somewhat, as detailed in Appendix A. The following points stand out.

- The Bureaucrat will never quit, since the President cannot impose loses on her. Therefore, each period is stand-alone.

- Given an $L-$President, the Bureaucrat does not work at all, since the president would never accept a policy the Bureaucrat prefers to the status quo.

- Given an $R-$President, the Bureaucrat's work effort increases monotonically from Region 1 to Region 3, plateauing at a relatively high level in Region 4. Expected policy tracks along with effort.

In Section V we examine the implications for the President's expected utility from the Bureaucrat's work performance.

B. Presidential Centralization: Summary of Play in Period 2

We now take up the game with presidential policy centralization. Appendix B provides a formal analysis of play in Period 2. Summarizing, in Period 2 the President attempts to develop his most-preferred policy proposal and if he succeeds he imposes it as the final policy. If an $R-$President's effort failed, he is willing to accept B's most-preferred policy proposal as a take-it-or-leave-it offer if B's ideal point lies in Regions 1-3, while an unsuccessful $R-$President will not accept a Region 4 B's most-preferred policy proposal. However, an

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unsuccessful $R-$President will accept the compromise policy proposal most-preferred by a Region 4 B, a proposal affording R a utility equivalent to the status quo ($x_2^B = 2r$). An $L-$President is unwilling to accept any policy proposal B prefers to the status quo.

These basic facts about policy choice have strong implications for B's career decisions in Period 2 as well as both parties' work efforts. In particular, the Bureaucrat's stay/go decision is simple: the Bureaucrat stays if the President's final policy is as good or better than the status quo; otherwise, B departs in order to mitigate the sting of complicity in a bad policy. As a result, when the President's policymaking effort fails, B stays in public service, since either q prevails or (even better under an $R-$President) a successful B gets to shape the policy in a favorable way. However, if B faces an $L-$President and the President succeeds in his policy proposal effort, L imposes $x^F = \ell$ and B exits. In addition, when an $R-$President is in power, a very moderate B (a B in Region 1) exits if R's policymaking succeeds, since the President's ideal policy r is worse for B than the status quo. More extreme B's (those in Regions 2-4) stay even when the R president succeeds, because they prefer the President's policy over the status quo.

The work effort chosen by the Bureaucrat anticipates her subsequent stay/go decisions. In addition, the work efforts of both players reflect the strategic interaction of their joint proposal game. Critically, the work efforts for an $R-$President and B are *strategic substitutes* in the sense of Bulow, Geanakoplous, and Klemperer 1985: additional effort from one party reduces the marginal return on effort exerted by the other party. (We explore the implications of strategic substitutes when discussing work effort in Period 1). The interaction of an $L-$President and B is even more stark: because L will not accept any policy preferred by B over the status quo, B undertakes no work effort. Hence, an $L-$President has to "go it alone" in the face of an unhelpful bureaucracy.

The expected value of a zealot to an R-President depends not only on his proximity to the President, but on how hard B works in equilibrium. In turn, this depends on the distance of the Bureaucrat from the status quo and on the strategic interaction with the President's

own effort. Of least value are L-side zealots (who don't work, leaving the President to go-it-alone) and Region 4 zealots, who work hard but if successful present the President with a policy utility-equivalent to the status quo. Region 1 zealots are somewhat more valuable than either of these types, but because they so favor the status quo their work effort is tiny; hence, they are not much more valuable. Regions 2 and 3 zealots are much more valuable. Of these, at the same distance of the Bureaucrat from the President, Region 2 zealots are most valuable because Region 3 zealots work very hard to pull policy too far to the right, even accounting for the offset in the President's own work effort. Hence, the ranking is: L-side = Region 4 < Region 1 < Region 3 ≤ Region 2. Not surprisingly, the most valuable zealot has the same ideal point as the President.[12]

C. Career Choice in Period 1: The Stay/Go Decision

To make her career decision in Period 1, the Bureaucrat compares two alternatives: on the one hand, the payoff from remaining in government service in Period 1 plus the continuation value $V(0)$ of the game in Period 2 given a stay decision in Period 1 ($g_1 = 0$); on the other hand, the payoff from leaving government service in Period 1 plus the continuation value $V(1)$ of the game in Period 2 given an exit from government service in Period 1 ($g_1 = 1$). For bureaucrats in all regions, the continuation value $V(1)$ from departing in Period 1 is 0. This reflects the clean hands effect on the value of future policy plus the fact that B will not undertake costly proposal development effort in the future if she is no longer employed in the government.

Formally, the Bureaucrat departs if and only if:

$$\psi^B(x_1^F; g = 0) + V(0) < \psi^B(x_1^F; g = 1) + V(1) = 0$$

implying "depart" if and only if

$$(1) \qquad\qquad -\psi^B(x_1^F; g = 0) > V(0)$$

In words, the Bureaucrat departs if the loss from implementing the final policy is greater than the continuation value of the game.

Figure 2 illustrates the stay/go calculation (discussed momentarily). In the panels, the dark line displays the continuation value $V(0)$ to a zealous B from staying in Period 1 (see Table 1 in Appendix B). The four regions are distinctly visible in the figure. An important fact to note is that B's continuation value from staying is positive regardless of region (this is easily seen in the figure). The reason for this is simple: the continuation value reflects optimal effort and optimal quitting in Period 2. In Period 2, B can always guarantee herself utility of zero by not working and quitting so that in expectation any other optimal course of action must yield utility greater than or equal to zero.

The fact that the continuation value of staying in government service $V(0)$ is positive has important implications for B's career decisions. First, if the President is unsuccessful in proposal development, B remains in government whether the President is an $R-$President or an $L-$President. Second, if the President is successful in proposal development the Bureaucrat may still stay in government if the imposed policy isn't too bad and the continuation value of the game is sufficiently attractive. More precisely, the only situation leading to a quit decision in Period 1 requires $\psi^B(x_1^F)$ to be negative, that is, the Period 1 policy must be worse for B than the status quo. This situation can arise in only two circumstances: 1) when a successful $L-$President imposes the final policy ℓ on a relatively moderate B, or 2) when a successful $R-$President imposes the final policy r on a very moderate B (b lies within Region 1). In that configuration, R's final policy $x_1^F = r$ yields B utility $2b - r < 0$ (by construction). These situations give rise to two distinct career dynamics, "wait them out" and "I can make a difference."
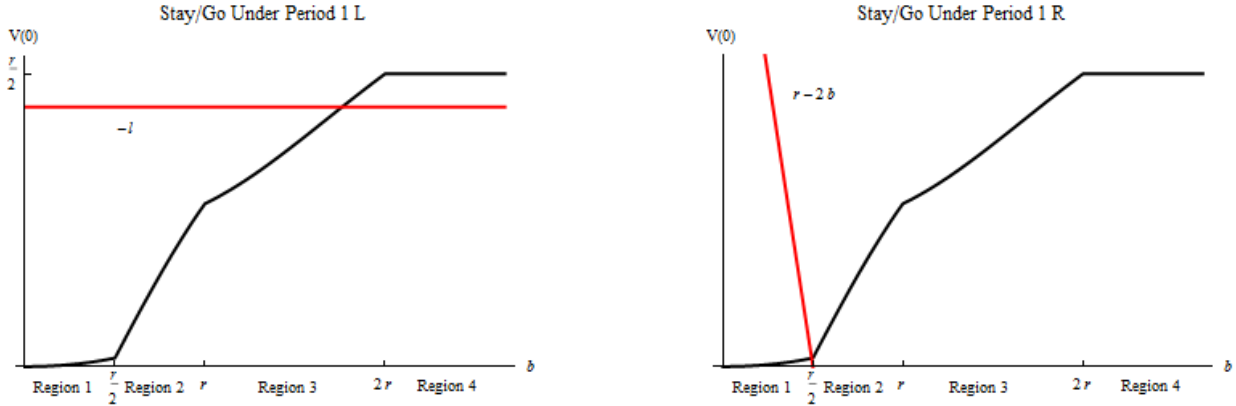
Figure 2: The Stay/Go Calculation in Period 1. The dark line is the continuation value of the game if the Bureaucrat stays, $V(0)$. The gray line is the immediate loss from staying given a presidentially imposed policy. B stays if the former is greater than the latter. The left-hand panel shows the "wait them out" calculation. The right-hand panel shows the "I can make a difference" calculation.

Wait Them Out (WTO).—If an incumbent $L-$President's proposal effort succeeds he sets $x_1^F = \ell$. This unattractive proposal imposes an immediate loss of $-\ell$ on B. B can mitigate this loss by quitting and retaining clean hands. Nonetheless, B may choose to remain in government and suffer the loss if the continuation value of staying $V(0) > -\ell$ (from Equation 1). In words, B will *wait them out* if the prospect of participating in attractive policymaking in a future $R-$President's administration is large enough to offset the immediate loss from the incumbent $L-$President's policy.

The left-hand panel in Figure 2 illustrates the calculation of B in the face of a successful $L-$President. The dark line in the figure is the continuation value of staying $V(0)$; the gray line is the immediate loss $-\ell$ from L's imposed policy $x_1^F = \ell$. In the example in the figure, all Region 1 and 2 bureaucrats exit, as do many Region 3 bureaucrats. However, a portion of Region 3 bureaucrats and all Region 4 bureaucrats remain. These bureaucrats decide to wait out the opposition President and remain in government service despite the unattractive policy imposed on them. They do so in the hope of serving under an $R-$President next period.

From inspection of $V(0)$ (see Table 1 and Equation 1) the comparison of present losses

and future gains is more likely to result in waiting-them-out when 1) an $R-$President is more likely to be elected (π is higher) and 2) the incumbent $L-$President is less extreme ($|\ell|$ is smaller). Both results are intuitive.

I Can Make a Difference (IMD).—If an incumbent $R-$President's policy attempt succeeds, he sets $x_1^F = r$, an attractive final policy for Bureaucrats whose ideal policy falls in Regions 2-4. Consequently they remain in government in Period 1. But Bureaucrats in Region 1 face an immediate loss from R's policy choice, of size $2b - r$. Nevertheless, they may stay in government in order to have a chance to create policy proposals themselves in Period 2 under an unsuccessful R. In other words, they reason *I can make a difference* in the future (note that this cannot occur if an $L-$president gains office in Period 2). This calculation requires the continuation value of remaining $V(0) > r - 2b$ (using Equation 1). The comparison of $V(0)$ and $r - 2b$ is shown in the left-hand panel of Figure 2. Remark 12 in Appendix C shows that a small group of Region 1 Bureaucrats near the boundary of the region (that is, near $\frac{r}{2}$) will not quit. Remark 13 in Appendix C shows that this small group of Region 1 stayers is somewhat larger when 1) an $R-$President is more likely to be elected president in the future (because then R's policy attempt may fail and B can achieve her most-preferred policy), 2) when b is closer to the boundary $r/2$, and 3) when the incumbent R-President is less extreme, so the policy r is less painful for B.

Three broad theme's stand out about career choice in Period 1. First, not surprisingly but importantly, policy extremity by an opposing incumbent president impels exits by zealous bureaucrats, at least if the President is successful in his own policy proposal attempt. Second, and also not surprisingly, good election prospects for the same side President encourage policy-sensitive bureaucrats to remain in government. And, this is true regardless of which president is incumbent. Third, almost all Region 1 zealous bureaucrats exit if the President is successful regardless of the president's party.[13]

Together, these results imply that if presidents are ideologically extreme relative to many bureaucrats, the bureaucrats' tenure in government may well be short, especially if
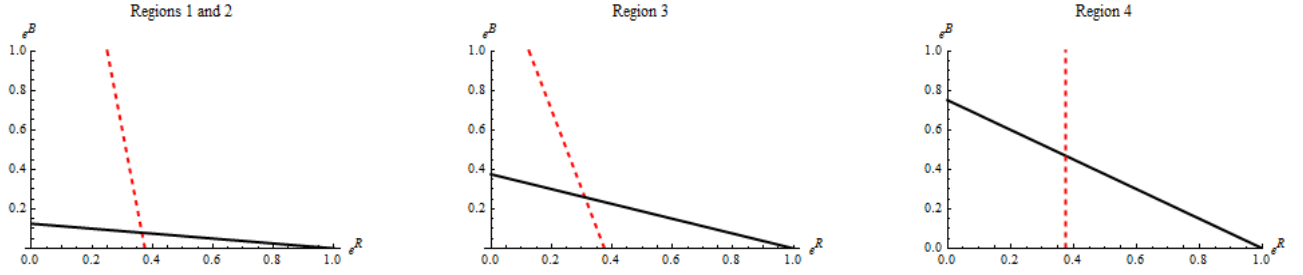
Figure 3: Reaction Functions in Period 1. In each panel, the reaction function of the President is shown as a dashed line while that of the Bureaucrat is a solid line. In all three panels $r = \frac{3}{4}$. In the left Panel, $b = \frac{1}{4}$; in the middle panel $b = 1$; in the right pane $b \geq \frac{3}{2}$.

presidents exert much centralized policymaking effort.

D.   *Presidential Effort and Bureaucratic Initiative*

Figure 3 displays the reaction functions in effort of an $R-$President and the Bureaucrat in Period 1 (see Equations C1-C3 in Appendix C). These functions show how each actor's choice of proposal effort responds to that of the other actor. The critical feature of the efforts exerted by the Bureaucrat and the $R-$President is that they are strategic substitutes: an increase in the proposal effort of one party reduces the marginal return on effort for the other party and thus creates an incentive to reduce its effort. Consequently, the reaction functions in Regions 1, 2, and 3 are negatively sloped (panels 1 and 2 of Figure 3). In Region 4, however, the President is insensitive to the effort of the Bureaucrat. In this configuration, if B's search is successful, she generates a proposal that is utility-equivalent to the status quo for the President. Accordingly, from the President's perspective the Bureaucrat's effort is no substitute for his own. However, the converse is not true for a Region 4 Bureaucrat, since effort by the President can bring a better final policy for the Bureaucrat. Consequently, in Panel 3 of Figure 3 B's reaction function continues to be downward sloping but the $R-$president's is constant, insensitive to B's effort.

An $L-$President faces a very different strategic situation. There is no policy the Bureaucrat prefers to the status quo that an $L-$President does as well. Therefore, L would reject

all the policies the Bureaucrat would like to recommend. Given this fact the Bureaucrat exerts no proposal effort at all. Consequently an $L-$President facing an $R-$side Bureaucrat must go it alone.

The intersection of the two reaction functions yields the equilibrium effort levels (e^{R*}, e^{B*}) (see EquationC4 in Appendix C). Figure 4 displays the equilibrium proposal efforts exerted by an $R-$President and by a zealous Bureaucrat separately and jointly, as a function of the location of B's ideal point b. As shown in the left-hand panel of the figure, effort by the Bureaucrat increases as her most-preferred policy b is increasingly distant from the status quo $q = 0$, at least in Regimes 1-3. In Regime 4, however, the Bureaucrat is constrained to recommend the same policy while the effort of the President is a constant; hence, all Regime 4 bureaucrats undertake the same high level of effort. An R-President works harder than B when the $R-$President is more extreme than B, while B works harder than an R-President when B is more extreme than R. An $R-$President works hardest when the Bureaucrat's effort is low (that is, when $b = 0$) or when a successful effort by B would yield a policy recommendation utility equivalent to the status quo (Region 4). In these two situations, an R-President effectively goes it alone and exerts effort $e^{R*} = \frac{r}{2}$.[14] If the President were unable to exert centralized effort, zealous bureaucrats in Regions 1-3 would exert effort $e^{B*} = \frac{b}{2}$ while those in Region 4 would exert effort $e^{B*} = r$.[15] These "go it alone" efforts for B exceed the strategic, jointly determined efforts for B shown in the figure. In this sense, effort by the President undercuts bureaucratic initiative.

The right-hand panel in Figure 4 displays total proposal effort $(e^{R*} + e^{B*})$ given an R-President and zealous Bureaucrat. Total policymaking effort is greatest when the R president faces a Regime 4 Bureaucrat, for both work hard to change the distant status quo. Total effort is lowest when the Bureaucrat favors the status quo ($b = 0$). In this case, only the President exerts effort. This situation would be compatible with the common observation of unmotivated or "lazy" bureaucrats who force the president to compensate for their inaction. In this situation, though, even zealots would exert little proposal initiative, because they
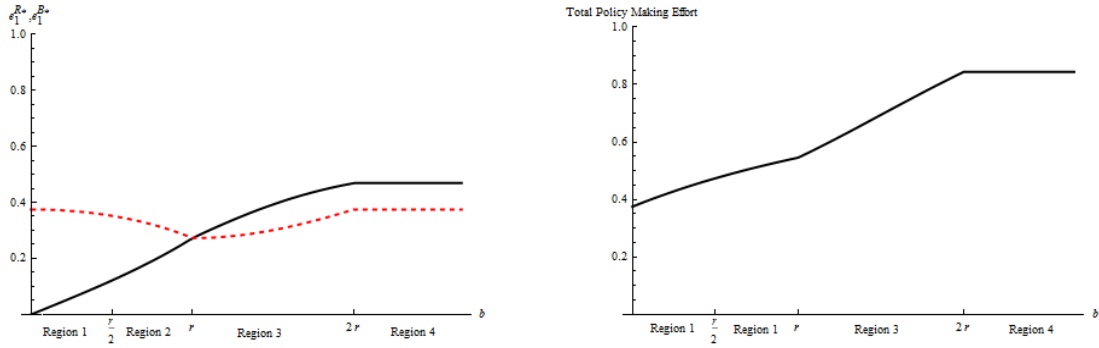
Figure 4: Policy Making Effort in Period 1. The left-hand panel shows equilibrium levels of effort in Period 1 exerted by the President and Bureaucrats in the 4 regions (the President's effort is the dashed line while the Bureaucrat's is the solid line). The right-hand panel shows the sum of the two efforts. In the figure $r = \frac{3}{4}$.

favor current policy. Though the efforts of the two actors are strategic substitutes, total effort is nonetheless higher when both work than when one actor "goes it alone." Of course, under an L-President, the Bureaucrat exerts no effort and the effort exerted by L is a constant, the go-it-alone level $\frac{|\ell|}{2}$.

With an $R-$President, the probability of a policy proposal departing from the status quo is $1 - (1 - e^{R*})(1 - e^{B*})$ (the probability at least one of the two actors is successful in generating a proposal). This quantity closely tracks total effort.

E.   The Policy Consequences of Quitting in Protest

From the President's perspective, the immediate consequence of bureaucrats who quit in protest is negligible. After all, the President has created the policy proposal he wants and ordered it implemented (otherwise, the Bureaucrat will not quit), and slacker agents in the agency are willing to implement it. The result is a policy the President likes and that he or his party can take to the electorate. The real consequences fall on the President's *successor*. Two cases are important: 1) when an $R-$President follows a successful $R-$President predecessor, and 2) when an $R-$President follows a successful $L-$President predecessor. To make matters concrete, the first scenario corresponds to (say) George H.W. Bush succeeding
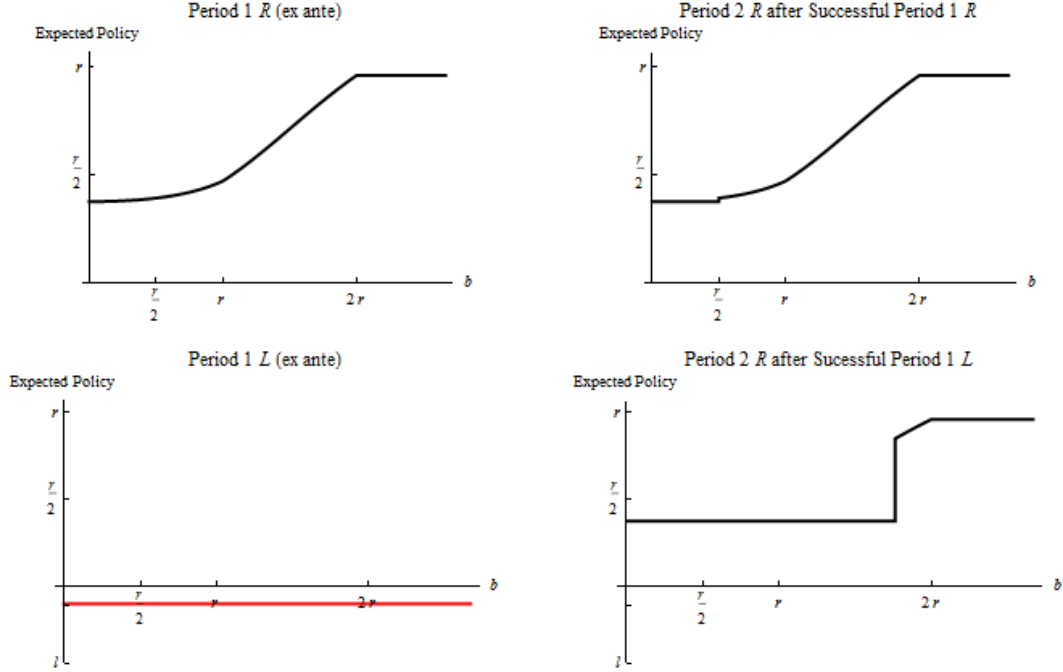
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Figure 5: The Effect of Policy-Induced Departures on Expected Policy. The two left-hand panels show expected policy at the beginning of Period 1. If the President's policy search succeeds, the calculations shown in Figure 2 ensue and many moderate zealots depart. Expected policy in Period 2, given a successful Period 1 president, are shown in the two right-hand panels. Given an R president in Period 1, the policy consequences in Period 2 are very modest. But they are dramatic given a Period 1 L president.

Ronald Reagan. The second scenario corresponds to a Democrat succeeding Donald Trump: recalling the vignettes about the State Department and EPA at the beginning of the paper, what are the future policy consequences for a Democratic successor? The model affords a structured analysis.

    An $R-$President Following a Successful R Predecessor.—Suppose an $R-$President is elected in Period 1. At the beginning of Period 1, expected policy in that period is $E(x_1^F) = e_1^{i*}r + (1 - e_2^{i*})e_1^{B*}x_1^B$, where x_1^B is the policy recommendation of the Bureaucrat. This expected policy is shown in the upper left-hand panel of Figure 5 as a function of the location of B's ideal policy. Not surprisingly, ex ante expected policy in Period 1 tracks total effort. Recall from the earlier results that a Region 1 Bureaucrat exerts modest effort, since he does not find the status quo particularly onerous. Hence, expected changes in policy in that region largely reflect Presidential proposal efforts, which are considerable.

But, the incumbent $R-$President's Period 1 proposal effort is either successful or not. If unsuccessful, B does not exit regardless of the location of her ideal policy. However, if the incumbent $R-$President is successful, he orders B to implement the President's most-preferred policy, r. If B's ideal policy lies in Regions 2-4, she perceives this change as an improvement over the status quo. Hence, B will not exit. Because she doesn't exit, expected policy in Period 2 remains the same as the ex ante expected policy in Period 1 (the upper left-hand panel in Figure 5). But if the zealous Period 1 B's ideal policy lies in Region 1, she will exit unless her ideal policy is very close to $r/2$ (this calculation was shown in the right-hand panel of Figure 2).

What then are the implications for policymaking in Period 2 if a Period 1 $R-$President's policy search succeeds? The results are shown in the upper right-hand panel of Figure 5, which displays expected policy in Period 2 as a function of the location of b. Even if b lies in Region 1, the impact of a policy-induced departure is small. Of course, the Period 2 president must exert more effort than he would have if the zealous Region 1 B had remained in government. But since the president would have worked hard in any event, while B would not have displayed much initiative, the impact of B's departure is modest in terms of expected policy.

An $R-$President Following a Successful L Predecessor.—The situation is quite different when an $R-$President follows a successful $L-$President. Suppose L is elected in Period 1. Because B will not assist L (who would not take B's advice in any case), expected policy reflects only L's go-it-alone efforts. The resulting expected policy is shown in the lower left-hand panel of Figure 5. Again, though, the incumbent $L-$President's Period 1 proposal attempt either succeeds or fails. If it fails, B will not exit. In this case, expected policy in Period 2 is the same as that shown in the upper left-hand panel of Figure 5. On the other hand, if the Period 1 $L-$President's innovation attempt succeeds, he orders B to implement L's most-preferred policy, ℓ. As discussed earlier, only if B's ideal point is rather extreme will she be willing to remain in government, hoping to "wait them out" (recall the

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left-hand panel in Figure 2).

The departure of moderate zealous agents then has real policy impact in Period 2, at least for an $R-$President. The results are shown in the lower right-hand panel of Figure 5, which displays expected policy in Period 2 as a function of the location of b. In the example in the figure, B will depart if her ideal policy lies in Region 1, Region 2, and the more moderate part of Region 3. Accordingly, expected policy reflects only the Period 2 president's go-it-alone effort. In the example, only if B's ideal policy was rather extreme (in the less moderate part of Region 3 or in Region 4) does she stay and work in Period 2. Not surprisingly, expected policy in Period 2 is quite different from what it would have been absent the departure (compare the lower right-hand panel and the upper left-hand panel in Figure 5). The new $R-$President is quite handicapped by the $L-$President's legacy of policy-induced departures.

These results suggest that even future-oriented presidents would have little incentive to forebear from centralization, because the resulting loss of bureaucratic initiative will fall mainly on opposition-party presidents, not same-party presidents.

V. The President's Incentive to Centralize Policymaking

In Terry Moe's celebrated analysis of presidential incentives to centralize executive branch policymaking, he argued that those incentives are almost completely unproblematic for a president: "Because the president can count on unequaled responsiveness from his own people, increases in White House organizational competence – for example, through greater size, division of labor, specialization, hierarchic coordination, formal linkages with outside organizations and constituencies – appear to him to have direct, undiluted payoffs for the pursuit of presidential interests"(Moe 1985:244). Does this evaluation change when we explicitly account for the perverse effects of centralization on bureaucratic initiative and retention? Furthermore, under what circumstances are presidential incentives to centralize policymaking most powerful? Our simple model provides an avenue to address these
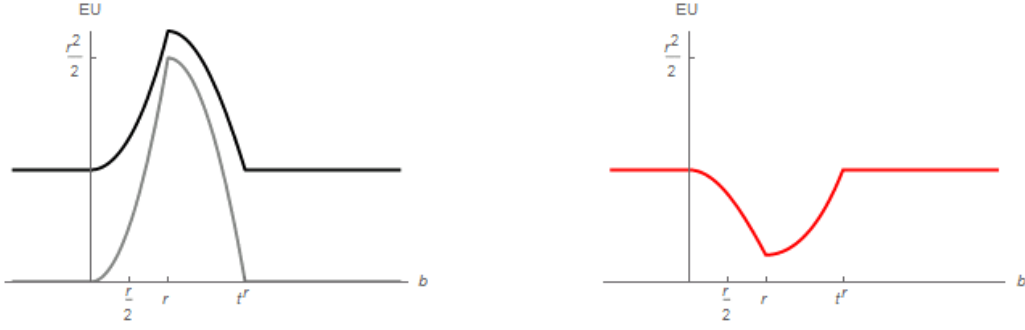
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Figure 6: Centralization and the Expected Utility of the President. The left-hand panel displays the expected utility of a period of play for the President absent centralization (gray line) and with centralization (darker line). Centralization is always weakly better. The right-hand panel displays the expected utility differential for the President across the two regimes. The analysis assumes a zealous Bureaucrat.

questions.

In the no-centralization regime, the President's expected utility is simply $\psi^i(q)(1-e^{B*})+\psi^i(x^{B*})e^{B*}$ (see Equation A4 in Appendix A). In words, the President's expected utility at the start of a period reflects the Bureaucrat's optimal effort allocation and policy recommendation contingent on success, for any location of the Bureaucrat relative to the President (the President cannot undertake independent policy innovation in this regime). The gray line in the left-hand panel of Figure 6 displays the expected utility of an $R-$President in the no-centralization regime as the ideal point of the Bureaucrat, b, varies. As shown, the expected utility of the President is zero (the utility afforded by the status quo) when facing an $L-$side Bureaucrat or a Region 4 Bureaucrat. Expected utility rises as the Bureaucrat's ideal point approaches that of the President (r in the figure), reaching a maximum when the two ideal points coincide.

The expected utility of the President under centralization is somewhat more complicated because it now reflects the effort and policy choices of both players, to wit, for an $R-$President $\psi^R(r)(e^{R*}) + \psi^i(x^{B*})\left(1 - e^{R*}\right)e^{B*} - \left(e^{R*}\right)^2$ (see Equation C5 in Appendix C). The dark line in the left-hand panel of Figure 6 displays the expected utility of an $R-$President in the centralization regime as the ideal point of the Bureaucrat, b, varies. The

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right-hand panel in the figure displays the utility differential between the two regimes, the critical issue.

Three points, clearly visible in the right-hand panel of Figure 6, stand out about the relative attractiveness of centralized policymaking over no-centralization:

1. The President's expected utility with centralized policymaking is unambiguously greater than without, irrespective of the relative location of the Bureaucrat;

2. The greatest gain from centralization relative to decentralization occurs when the President faces a hostile Bureaucrat, that is, either an $L-$side Bureaucrat who wishes to defend the status quo or a Region 4 Bureaucrat who desires rather radical changes in the status quo;

3. Even if the policy preferences of the President and the Bureaucrat coincide, so there is no policy disagreement between them, the President is still better off with a capacity for centralized policymaking.

The first point indicates that the President *always* has an incentive to centralize policymaking. Moe's insight goes through even when accounting for the perverse effects of centralization on bureaucratic performance. The second point is entirely intuitive – the biggest gains for centralization come in the face of a hostile bureaucracy. The third point may be somewhat unexpected. It reflects the fact that, although the efforts of the President and the Bureaucrat are strategic substitutes, overall proposal effort is greatest when both work. Or, to put it another way, even if the Bureaucrat is completely ideologically attuned to the President, the President will not wish to free-ride completely on the Bureaucrat's effort; the President's central staff will also work, bringing net policy benefits to the President.

In sum, in our simple model of presidential-agency relations, presidents have a strong incentive to centralize policymaking, despite its adverse consequences in the agencies.

VI. Extensions

We briefly discuss some obvious extensions or worthwhile departures.

Wages.—We have abstracted from public and private sector wages, though including them in the model is relatively straightforward. Clearly, wage differentials would affect stay/go decisions. In fact, Moe 2013 notes that in models with slackers and zealots, public sector wages must at least meet private sector wages, otherwise, slackers will exit the public sector, effectively shutting down the government. Beyond that, if public sector wages were attractive relative to private sector ones, the differential would undercut but not obviate the incentive to quit in protest.

This raises an obvious point: Why not pay bureaucrats enough to keep them in the government even when they must implement policies they dislike? The required wage structure would strongly resemble so-called efficiency wages, which pay more than market-clearing wages to valuable employees so that they do not quit in the face of occasional temptations to do so (Shapiro and Stiglitz 1984). In the context of our simple model, wages would overpay Region 2-4 Bureaucrats under an R-President (successful or unsuccessful) so that the bureaucrats do not quit in the face of a successful L president. And such wages would overpay Region 1 bureaucrats under an unsuccessful R president so that these bureaucrats do not quit in the face of a successful R president.

Though conceptually simple, bureaucratic efficiency wages are deeply problematic politically. First, tying wages to the political orientation of bureaucrats or their agencies is anathema to the concept of a non-partisan civil service and would likely be subject to political abuse. Second, if presidents are constrained to offer the same wages across agencies and employees, much of the extra wage bill would go to slackers who do not need efficiency wages. This would be quite costly and likely unpopular with economy-minded voters. But, the biggest sticking point is surely the following: the necessary wage structure would require L presidents to pay premium wages to R-side bureaucrats *with the benefit from decreased exits accruing to R presidents rather than L presidents.* And similarly, R presidents would

need to pay premium wages to L side bureaucrats with no immediate benefit to themselves. Perhaps such a wage structure could be sustained by a relational contract between R and L presidents; but this thorny question deserves a closer and more acute analysis of the politics of bureaucratic wage setting than we can offer here. The political economy of public sector wage setting appears a worthwhile topic of research (Cameron et al 2020).

Political Appointees.—We have focused on interactions between presidents and civil servants because policy tensions there are apt to be frequent and consequential. Because presidents select their own political appointees, policy tensions between them should be much more muted. Nonetheless, policy differences may exist and when they do, much of the analysis in the paper would apply. One example concerns presidents who prove unpredictable and head-strong in a policy domain, such as foreign policy. For example, in December 2018 Secretary of Defense James Mattis resigned his post, simultaneously denouncing President Trump's sudden and surprising policy change toward Syria and Turkey. Mattis's stay/go calculations may have resembled those explored above. In other cases, presidents appoint individuals with close ties to interest groups or powerful blocs within the president's party. When presidents favor more expedient policies, these individuals may find themselves facing many of the same quandaries as the civil servants we study. Hence, the model in the paper may have applicability to at least some political appointees.

The Impact of Other Branches.—Restrictions on presidential policymaking arise naturally in a system of separated powers. A hostile or skeptical judiciary or a Congress held by the opposition party can constrict the range of sustainable unilaterally imposed policies. For example, if presidential unilateral action is to be invulnerable to a legislative reversal, the President must locate his new policy so at least one-third of the members in a chamber will sustain a presidential veto of legislation over-turning the President's unilateral action. In the conventional analysis, this implies that the President must locate policy within the Pareto set between the median legislator and the chamber's veto or filibuster pivot (Howell 2003). If the President's most-preferred policy lies within the relevant Pareto set, as would typically

be the case in unified party government, then the President's ideal policy will be legislatively sustainable. This is the scenario we examined. But suppose the President's ideal policy lies outside that Pareto set, as is common during divided party government (Cameron 2000). Then the best policy the president can sustainably achieve is the policy at the nearest edge of the Pareto set, namely, the ideal point of the relevant veto pivot. In turn, this enforced moderation has implications for bureaucrats' stay/go decisions, for policymaking efforts by both the president and bureaucrat, and for expected policy.[16]

Space prevents a full consideration of separation of powers effects on president-agency incentives but several deserve brief mention. It is easy to see that congressional restrictions on a $L-$President may benefit a right-side Bureaucrat. First, the restrictions imply that an $L-$President will not expend as much effort on proposals, hence, he will succeed less frequently. This in turn implies B will not exit as frequently in Period 1 when an $L-$President holds power. In addition, less extreme B's may be more willing to "wait them out" even in the face of a successful policy attempt by L since that success will result in less extreme policies from L. The effect of restrictions with an $R-$President are more complex. Given limits on sustainable policy by an $R-$President, very moderate B's (those in Region 1) will find it less distasteful when R's policy search succeeds. Hence, they will be less inclined to depart – "I can make a difference" becomes more compelling. But, extreme B's will find this constrained policy less attractive. So, if an extreme Bureaucrat faces an $L-$President in Period 1 and anticipates a constrained $R-$President in Period 2, the reduced Period 1 continuation value may induce the Bureaucrat to exit. In other words, "waiting them out" may become insufficiently attractive to keep the Bureaucrat in government.

Complementary Actions by the President and Bureaucrat.—We have focused on a class of policies in which central effort and agency effort are strategic substitutes, a situation we see as typical. But, one can imagine a very different class of policies in which central effort and agency effort are strategic complements. In that case, the two efforts would reinforce one another, so that effort from the center encourages effort in the agency and may

lead bureaucrats to stay in government rather than depart. For example, one might imagine the bureaucrats designing a policy that both actors like, with the president then supplying "marketing" effort that makes the policy more popular or better known to the public and hence utilized more frequently. The modeling technology used in this paper could be applied to such situations, likely yielding very different results.

Learning-By-Doing, Investing in Human Capital, Recruiting Zealots, and Revolving Doors.—Several other simple extensions appear promising or intriguing. First, experience with policymaking may make long-term zealots more capable than less experienced individuals. Learning-by-doing may thus lead to greater effective effort from agencies even in the face of presidential centralization, but conversely imply greater relative losses from policy-induced departures. Similarly, zealous bureaucrats may be willing to invest in valuable agency-specific human capital (similarly to Gailmard and Patty 2007). Presidential centralization may then imply the departure not only of the most motivated bureaucrats but the most skilled ones as well. On the other hand, the ability to recruit new zealots may partly offset policy-induced departures, at least over time. Finally, the market for ex-bureaucrats – the revolving door – appears quite under-studied and could interact with centralized policymaking in important ways. All these topics appear reasonably tractable as extensions to the analysis here.

VII. Conclusion

Presidential scholars have long described departures like those at the State Department and EPA sketched at the beginning of the paper. For instance, following President Nixon's centralization of foreign policy and Henry Kissinger's ascendancy as National Security Advisor in the White House, morale in the State Department plummeted and key aides including some in the NSC quit in protest (Burke 1992, 132). Similarly, in the wake of President Obama's extensive use of White House czars, the Environmental Protection Agency found it more difficult to recruit and retain top executives in government (Steinzor 2012).

The analysis presented here suggests that the Trump departures and other earlier incidents are not isolated flukes but instead reflect systematic long-term changes in presidential-agency relations. Our model offers three insights about the effects of presidentially centralized policymaking on executive agencies.

First, when presidents make policy unilaterally using devices like executive orders or presidential memoranda, they undermine the incentives for bureaucrats to work hard, display initiative, and devise policy proposals. Some bureaucrats derive satisfaction from the opportunity to improve public policy (both relative to the status quo and their ideal policy). Without the potential to influence policy, these bureaucrats have less incentive to expend effort. In turn, their failure to expend effort influences the ability of government to find alternatives to existing policies or respond to new and emerging problems.

Second, centralized presidential policymaking can lead bureaucrats to quit in protest. When presidents make policy unilaterally, they often override advice from the agency and sometimes impose changes opposed by agency employees. As a result, bureaucrats may leave rather than be implicated in the administration of the policy. The principal exception (according to the model) is a class of very extreme zealots who will be willing to wait out a hostile president. These bureaucrats are willing to persist in government during bad times in anticipation of a friendlier president and the policies that will ensue. (A relative handful of moderate bureaucrats may be willing to put up with an extreme president from their own party in the hope that they might have a moderating influence on his policies in the future.)

With regular electoral turnover at the top, one would expect a hollowing out of moderate bureacrats across the government, leaving only extreme zealots and slackers. One might not expect much policy moderation. In addition, policy could swing dramatically from administration to administration, with the zealous bureaucrats and an allied president trying to undo the policies of a hostile predecessor, and presidents working hard on their own to impose favored policies on agencies filled with hostile zealots.

Third, presidents have a strong incentive to engage in centralized policymaking despite

the adverse consequences in the agencies. The advantages of centralized policymaking accrue to the incumbent president, while the adverse consequences impose what is in essence an externality on future presidents of the opposite party. As a result, one would expect policy centralization to increase over time.

In sum, presidents influence policymaking in the modern administrative state not only by politicizing agencies via appointments, but by building an in-house policymaking capacity allowing them to ignore and override agency recommendations. Scholars have well-described these historic developments, and a sizeable literature explores politicized appointments and unilateral presidential action. Largely missing has been an analytic treatment of centralization's incentive effects in the agencies, including civil servant departures, the hollowing out of moderates, and a degradation in policy innovation. In this paper, we have tried to address this gap in our understanding of the administrative presidency.

A   Baseline: No Presidential Centralization

In this version of the game the President has no central capacity for policy formulation, so his proposal effort must be $e^i = 0$.

The following lemma assures that if the Bureaucrat's proposal attempt fails, the President will not choose a new policy at random. Let $F(x)$, with density $f(x)$, be a distribution over the policy space. Assume $F(x)$ is uniform on $[-z, z]$. If the President selects a policy other than q or B's successful proposal, he draws a policy from this distribution. The key element in the lemma is: policies outside the interval $[q, t^i]$ be sufficiently probable.

Lemma 1. *(No Guessing Lemma) If the Bureaucrat's proposal attempt is unsuccessful, the President chooses no policy (retains the status quo), so $x^F = q$.*

Proof. For the President, choosing the status quo $q = 0$ brings policy utility of zero. Suppose an unknowledgeable president selects a policy at random, that is, implements a random draw from $F(x)$, which is uniform on $[-z, z]$, $z > 0$. For an $R-$president the expected utility of a

random policy (using the Matthews normalized policy function) is:

$$\int_{-z}^{z} \psi^R(x;r)f(x)dx = \begin{cases} \int_{-z}^{r} \frac{x}{2z}dx + \int_{r}^{z} \frac{2r-x}{2z}dx = -\frac{(r-z)^2}{2z} \text{ if } z > r \\ \int_{-z}^{z} \frac{x}{2z}dx = 0 \text{ if } z \leq r \end{cases}$$

So expected utility must be less than or equal to zero and the random draw cannot be profitable. Similarly for L

$$\int_{-z}^{z} \psi^L(x;\ell)f(x)dx = \begin{cases} \int_{-z}^{\ell} \frac{x-2\ell}{2z}dx + \int_{\ell}^{z} \frac{-x}{2z}dx = -\frac{(\ell+z)^2}{2z} \text{ if } -z < \ell \\ \int_{\ell}^{z} \frac{-x}{2z}dx = 0 \text{ if } \ell < -z \end{cases}$$

which also must be weakly negative for all $-z < \ell$. Hence the President chooses the status quo rather than a random policy.□

No Bureaucrat ever quits absent centralized policymaking. To see this, note that no Bureaucrat will generate a proposal worse for itself than the status quo, which has a utility value of 0 (the proposals a successful Bureaucrat will proffer are detailed in the next Proposition). In light of the No Guessing Lemma, the President will never select a policy at random, i.e., if the Bureaucrat fails to generate a policy. Hence, the value to the Bureaucrat of x^F cannot be lower than 0. The value of quitting is 0. Hence, staying must (weakly) dominate exiting in both rounds of play. Moreover, because no period 1 Bureaucrat exits, the two rounds of play simply involve repetition of the same situation.

The following is a subgame perfect set of policy proposals and final policies; this Proposition is almost identical to the central result in Romer and Rosenthal 1978 but accounts for costly proposal development.

Proposition 2. *(Agency Proposal and Presidential Policy Choice). The President sets final policy*

$$x^F = \begin{cases} x^B \text{ if } B \text{ was successful and and } x^B \in [\min\{q,t^i\}, \max\{q,t^i\}] \\ q \text{ otherwise} \end{cases}$$

The bureaucrat's policy proposal in each period is

(A1)
$$x^B = \begin{cases} b \text{ if } B \text{ was successful, } i = R \text{ and } b < t^R \\ t^R \text{ if } B \text{ was successful, } i = R \text{ and } b \geq t^R \\ q \text{ if } B \text{ was not successful or } i = L \end{cases}$$

Proof. Part 1, Presidential policy choice. If the Bureaucrat's proposal effort was successful, the President is placed in the position of the receiver in a Romer-Rosenthal take-it-or-leave-it (TILI) game: he accepts any policy that is as good or better than the status quo (that is, where $\psi^i(x^B) \geq 0$) and rejects all others. (Recall: if the Bureaucrat succeeds, the utility value of her recommendation is verifiable for the President). The set $[\min\{q, t^i\}, \max\{q, t^i\}]$ indicates all the policies that are weakly better for the President than the status quo. From the No Guessing Lemma, if B's attempt was unsuccessful the President will not choose a final policy at random so the status quo q again continues. Part 2, the Bureaucrat's policy proposal. Given the President's policy choice strategy in Part 1, a successful zealous Bureaucrat is able to make a proposal as if she were the proposer in a Romer-Rosenthal TILI game. That is, a successful zealous Bureaucrat offers the proposal that maximizes $\psi^B(x)$ among those proposals that the President will accept, namely the set of policies $[\min\{q, t^i\}, \max\{q, t^i\}]$. The indicated proposals follow immediately (see Romer and Rosenthal 1978). If the Bureaucrat's proposal effort was unsuccessful, the President will not accept any proposal from the Bureaucrat other than q so the Bureaucrat may as well offer q (no successful proposal is equivalent to recommending q). Note that if P is an L-President, there is no proposal other than q that the Bureaucrat could recommend that L would accept so B might as well recommend q. If B is a slacker she does not care about policies and may as well follow the indicated strategy; of course, if the slacker undertook no proposal effort, she can only offer q (which is equivalent to no proposal).□

The proposal strategy is effectively unique in the following sense. Unsuccessful Bureaucrats (which will include all slackers in equilibrium) could propose a random policy knowing

that their offer will be rejected by the President who will understand that it is a random policy; but a random policy is thus equivalent to recommending q.

In light of the above, the expected utility of the Bureaucrat after the election but prior to undertaking effort is:

$$
Eu^B(e^B; i, b, \theta) = \begin{cases} \theta e^B b - \left(e_2^B\right)^2 & \text{if } i = R \text{ and } b \text{ in Regions 1-3} \\ \theta e^B 2r - \left(e_2^B\right)^2 & \text{if } i = R \text{ and } b \text{ in Region 4} \\ -\left(e_2^B\right)^2 & \text{if } i = L \end{cases}
$$

where $\theta = 1$ denotes a zealot and $\theta = 0$ denotes a slacker. Using these expected utilities one may straightforwardly derive optimal effort for B:

(A2) $\qquad e^B(b, r, \theta)^* = \begin{cases} \frac{b}{2} & \text{if } i = R, \theta = 1, \text{ and } b \text{ in Regions 1, 2, or 3} \\ r & \text{if } i = R, \theta = 1, \text{ and } b \text{ is in Region 4} \\ 0 & \text{if } \theta = 0 \text{ or } i = L \end{cases}$

Note that these values require $0 \leq b < 2$ and $0 \leq r \leq 1$ in order to restrict e^{B*} in $[0, 1]$.

Given the Bureaucrat's optimal effort strategy and proposal strategy and the President's acceptance strategy, expected final policy is simply $0(1 - e^B) + x^B e^B$, to wit:

(A3) $\qquad Ex^F = \begin{cases} \frac{b^2}{2} & \text{if } i = R, \theta = 1, \text{and } b \text{ in Regions 1-3} \\ 2r^2 & \text{if } i = R, \theta = 1, \text{ and } b \text{ is in Region 4} \\ 0 & \text{if } \theta = 0 \text{ or } i = L \end{cases}$

Finally, the per-period expected utility of the President at the beginning of a round of

play is $\psi^i(q)(1 - e^B) + \psi^i(x^B)e^{B*}$, to wit:

$$
\text{(A4)} \qquad Eu^i(e^B, x^B; i, b, \theta) = \begin{cases} \frac{b^2}{2} \text{ if } i = R, \ \theta = 1, \text{ and } b \text{ in Regions 1 or 2} \\ r - \frac{b^2}{2} \text{ if } i = R, \ \theta = 1, \text{ and } b \text{ in Region 3} \\ 0 \text{ otherwise} \end{cases}
$$

B The Game in Period 2

The following describes the Bureaucrat's stay/go strategy in Period 2.

Proposition 3. *(Stay/go Period 2) The Bureaucrat's stay/go strategy in Period 2 is:*

$$
g_2(x_2^F; b) = \begin{cases} 1 \ \textit{if } \psi^B(x_2^F; b) < 0 \\ 0 \ \textit{otherwise} \end{cases}
$$

Proof. B's effort costs are sunk when deciding to stay or go, hence only the policy impact of x^F matters. If B quits $(g = 1)$ her utility is 0. If she stays $(g = 0)$ she receives $\psi^B(x_2^F)$. The comparison of these two utility values determines the strategy. $\square$

The following lemma extends the No Guessing Lemma to centralized policymaking. It assures that, if proposal development fails, the president will not choose a new policy at random. Let $F(x)$, with density $f(x)$, be a uniform distribution of policies over the policy space. For simplicity assume $F(x)$ is uniform.

Lemma 4. *(No Guessing Lemma [centralized policymaking]) If both the Bureaucrat's and the President's innovation attempt fails, the President chooses no policy (so $x^F = q$).*

Proof. For the President, choosing the status quo $q = 0$ brings policy utility of zero. If the proposal effort of both actors has failed, opting for a policy change results in the implementation of a random draw from $F(x)$, which is uniform on $[-z, z]$. For R the

expected utility of a random policy (using the Matthews normalized policy function) is:

$\int_{-z}^{z} \psi^R(x; r) f(x) dx = \int_{-z}^{r} \frac{x}{2z} dx + \int_{r}^{z} \frac{2r-x}{2z} dx = -\frac{(r-z)^2}{2z}$ which must be negative for all $z > r$.

For L $\int_{-z}^{z} \psi^L(x; \ell) f(x) dx = \int_{-z}^{\ell} \frac{x-2\ell}{2z} dx + \int_{\ell}^{z} \frac{-x}{2z} dx = -\frac{(\ell+z)^2}{2z}$ which also must be negative for

all $-z < \ell$. Hence the President chooses the status quo rather than a random policy. $\square$

The following is a subgame perfect set of policy choices and proposals in Period 2.

Proposition 5. *(Bureaucrat Proposal and Presidential Policy Choice in Period 2). The President sets final policy*

$$
x_2^F = \begin{cases} p \text{ if } i' \text{ succeeded} \\ x^B \text{ if } i' \text{ failed, } B \text{ succeeded, and } x^B \in [\min\{q, t^i\}, \max\{q, t^i\}] \\ q \text{ otherwise} \end{cases}
$$

The bureaucrat's policy proposal is

$$
x_2^B = \begin{cases} b \text{ if } B \text{ succeeded, } i = R \text{ and } b < t^R \\ t^R \text{ if } B \text{ succeeded, } i = R \text{ and } b \geq t^R \\ q \text{ if } B \text{ failed or } i = L \end{cases}
$$

Proof. Part 1, Presidential choice. If the President's proposal effort succeeded, he can act as the Dictator in a Dictator game. Accordingly, he orders the implementation of his own ideal policy, r if $i = R$ and ℓ if $i = L$. If the President's proposal effort failed but the Bureaucrat's succeeded, the President is in the position of the receiver in a Romer-Rosenthal take-it-or-leave-it (TILI) game: he accepts any policy proposal that is as good or better than the status quo $(\psi^i(x^B) \geq 0$. The set $[\min\{q, t^i\}, \max\{q, t^i\}]$ indicates all those policies. If the President failed and Bureaucrat succeeded but $\psi^i(x^B) < 0$ the President rejects the proposal so that q prevails. From the No Guessing Lemma, if neither proposal attempt succeeded the President will not choose a final policy at random so the status quo q again continues. Part 2, the Bureaucrat's policy proposal. The Bureaucrat makes her proposal before knowing

whether the President's proposal effort succeeded. And, if the Bureaucrat succeeds, the utility value of her proposal is verifiable for the President. Given these facts and the President's final policy choice strategy in the prior Proposition, an successful zealous Bureaucrat has a weakly dominant strategy to make a proposal as if she were the proposer in a Romer-Rosenthal TILI game (the strategy is strictly dominant when $e^R < 1$). That is, a successful zealous Bureaucrat offers the proposal that maximizes $\psi^B(x)$ among those proposals that the President will accept if his proposal effort failed but B's succeeded, namely the set of policies $[\min\{q, t^i\}, \max\{q, t^i\}]$. The indicated offers follow (see Romer and Rosenthal 1978). If the Bureaucrat's proposal effort failed the President will not accept any proposal from the Bureaucrat other than q so the Bureaucrat may as well propose q (no proposal is equivalent to recommending q). Note that if P is an L-President, there is no proposal other than q that the Bureaucrat could recommend that L would accept so B might as well propose q. If B is a slacker she does not care about policies and may as well follow the indicated strategy; if the slacker undertakes no effort, she can only propose q (which is equivalent to no recommendation). $\square$

The proposal strategy is effectively unique in the following sense. Unsuccessful bureaucrats (which will include all slackers in equilibrium) could propose a random policy knowing that their proposal will be rejected by the President who will understand that it is a random proposal; but a random proposal is thus equivalent to proposing q.

The following Corollary indicates the path of play with respect to exits.

Corollary 6. *(Equilibrium exits in Period 2) If P's proposal effort fails, B does not exit. If L's proposal effort succeeds, B exits. If R's proposal effort succeeds, Region 1 B's exit but Region 2-4 B's do not.*

Proof. Follows from the Stay/go Proposition and the Policy Choice Proposition. That is, if L's effort succeeds, $x^F = \ell$ and $\psi^B(\ell) = \ell < 0$ while exiting brings B a utility of 0; if R's effort succeeds $x^F = r$ and $\psi^B(r) = 2b - r < 0$ for Regime 1 B, but $\psi^B(r) = 2b - r > 0$ for

Regime 3 B and $\psi^B(r) = r > 0$ for Regimes 3 and 4 B. If President's effort fails then either B's search fails and $x^F = q$ and $\psi^B(q) = 0$ for all B (so don't exit), or B's effort succeeds and $x^F = b$ with $\psi^B(b) = b > 0$ for all B. $\square$

Reaction Functions in Effort in Period 2.—In light of the above results the expected utility of a zealous B after the election but prior to undertaking proposal effort is:

(B1)
$$Eu_2^B(e_2^B; e_2^i, p, b, \theta = 1) = \begin{cases} (1 - e_2^R)\left(e_2^B b\right) - \left(e_2^B\right)^2 & \text{if } i = R \text{ and } b \text{ in Region 1} \\ e_2^R(2b - r) + (1 - e_2^R)\left(e_2^B b\right) - \left(e_2^B\right)^2 & \text{if } i = R \text{ and } b \text{ in Region 2} \\ e_2^R r + (1 - e_2^R)e_2^B b - \left(e_2^B\right)^2 & \text{if } i = R \text{ and } b \text{ in Region 3} \\ e_2^R r + (1 - e_2^R)e^B 2r - \left(e_2^B\right)^2 & \text{if } i = R \text{ and } b \text{ in Region 4} \\ -\left(e_2^B\right)^2 & \text{if } i = L \end{cases}$$

The similar expected utility of a slacker B is:

$$Eu_2^B(e_2^B; \theta = 0) = -\left(e_2^B\right)^2$$

The expected utility of R is:

$$Eu_2^R(e_2^R; e_2^B, r, b) = \begin{cases} e_2^R r + (1 - e_2^R)e_2^B b - \left(e_2^R\right)^2 & \text{if } b \text{ in Regions 1 or 2} \\ e_2^R r + (1 - e_2^R)e_2^B(2r - b) - \left(e_2^R\right)^2 & \text{if } b \text{ in Region 3} \\ e_2^R r - \left(e_2^R\right)^2 & \text{if } b \text{ in Region 4} \end{cases}$$

The expected utility of L is

$$Eu_2^L(e_2^L; \ell) = e_2^L |\ell| - \left(e_2^L\right)^2$$

Using these expected utilities one may straightforwardly derive reaction functions in effort for the actors. These are:

$$
\text{(B2)} \qquad e_2^B(e_2^i; b, r) = \begin{cases} \frac{(1-e_2^R)b}{2} & \text{if } i = R,\ \theta = 1,\ \text{and Regions 1, 2, or 3 } B \\ (1 - e_2^R)r & \text{if } i = R,\ \theta = 1,\ \text{and Region 4 } B \\ 0 & \text{otherwise} \end{cases}
$$

$$
\text{(B3)} \qquad e_2^R(e_2^B; r, b) = \begin{cases} \frac{r - e_2^B b}{2} & \text{if } \theta = 1 \text{ and } b \text{ in Regions 1 and 2} \\ \frac{r - e_2^B(2r - b)}{2} & \text{if } \theta = 1 \text{ and } b \text{ in Region 3 } B \\ \frac{r}{2} & \text{if } \theta = 0 \text{ or } \theta = 1 \text{ and } b \text{ in Region 4 } B \end{cases}
$$

$$
\text{(B4)} \qquad e_2^L(\ell) = \frac{|\ell|}{2}
$$

The reaction functions $e_2^B(e_2^i)$ and $e_2^i(e_2^B)$ (Equations B2, B3, and B4) may be solved simultaneously to derive the equilibrium proposal efforts:

$$
\text{(B5)} \qquad \left(e_2^{i*}, e_2^{B*}\right) = \begin{cases} \left(\frac{2r - b^2}{4 - b^2}, \frac{b(2-r)}{4 - b^2}\right) & \text{if } i = R,\ \theta = 1,\ \text{and } b \text{ in Regions 1 and 2} \\ \left(\frac{2r + b^2 - 2br}{4 + b^2 - 2br}, \frac{b(2-r)}{4 + b^2 - 2br}\right) & \text{if } i = R,\ \theta = 1,\ \text{and } b \text{ in Region 3} \\ \left(\frac{r}{2}, \frac{r(2-r)}{2}\right) & \text{if } i = R,\ \theta = 1,\ \text{and } b \text{ in Region 4} \\ \left(\frac{p}{2}, 0\right) & \text{otherwise } (i = L \text{ and/or } \theta = 0) \end{cases}
$$

Note that these values require $0 \le b < 2$ and $0 \le r \le 1$. The former is the duopoly stability condition (see e.g.,Dixit 1986). The latter is necessary to restrict e_2^{B*} in $[0, 1]$.

C   The Game in Period 1

We first consider B's expected utility conditional on the outcome of the Period 2 election and the expenditure of efforts $\left(e_2^{i*}, e_2^{B*}\right)$. Call this expected utility $Eu_2^{B*}|P$. First, if L is elected $Eu_2^{B*}|L = 0$ since B will quit if L's proposal effort succeeds and only q can prevail

B's Location	B's Continuation Value from Staying ($V(0)$)
Region 1	$\dfrac{b^2(2-r)^2}{(4-b^2)^2}\pi$
Region 2	$\dfrac{2b^5-br^4-4b^3(2+r)+b^2(4+3r^2)+16br-8r^2}{(4-b^2)^2}\pi$
Region 3	$\dfrac{b^4r-4b^3r^2+b^2\left(4+3r^2+4r^3\right)-4br^2-4br^2(2+r)+8r^2}{(4+b^2-2br)^2}\pi$
Region 4	$\dfrac{r^2\left(6-4r+r^2\right)}{4}\pi$

Table 1: Continuation Values to Bureaucrat From Remaining in Government Employment

if L's proposal effort fails (since B will not have expended effort, reflecting the fact that L will not accept any proposal B prefers to q). Second, if B is a slacker then her expected utility is also 0 since she receives no utility for policy and will not exert proposal effort. Third, if R is elected and B is a zealot, then B's expected utility varies by region as shown in Equation B1. Substituting Period 2 equilibrium efforts (Equation B5) in the appropriate portions of Equation B1 yields a zealous B's expected utility conditional on the election of R. Via algebra $Eu_2^{B*}|R$ are: Region 1: $\frac{b^2(2-r)^2}{(4-b^2)^2}$; Region 2: $\frac{2b^5-br^4-4b^3(2+r)+b^2(4+3r^2)+16br-8r^2}{(4-b^2)^2}$; Region 3: $\frac{b^4r-4b^3r^2+b^2\left(4+3r^2+4r^3\right)-4br^2-4br^2(2+r)+8r^2}{(4+b^2-2br)^2}$; and Region 4: $\frac{r^2\left(6-4r+r^2\right)}{4}$.

We now consider the continuation value to B at the end of Period 1. The continuation value of the game to B at the end of Period 1 depends on her stay/go decision in Period 1 (g_1). If she goes ($g_1 = 1$), then her continuation value $V(1) = 0$. Similarly, if she is a slacker she stays ($g_1 = 1$) but her continuation value $V(0) = 0$. However if she is a zealot who stays in Period 1, her continuation value $V(0) = \pi\left(Eu_2^{B*}|R\right) + (1-\pi)Eu_2^{B*}|L$ (recall that π is the probability an L-president is elected). As noted immediately above, $Eu_2^{B*}|L = 0$ hence $V(0) = \pi\left(Eu_2^{B*}|R\right)$. The continuation values $V(0)$ of the game for zealous B are shown in Table 1.

Remark 7. *In Table 1, $V(0) \geq 0$.*

Proof. $V(0)$ reflects optimal stay/go and work decisions by a zealous Bureaucrat in Period 2. B can always assure herself zero net utility in Period 2 by not working and quitting for any election realization or equilibrium policy effort by R or L. Hence, any equilibrium choices in Period 2 by B must afford B expected net utility of at least 0 prior to Period 2. $\square$

Proposition 8. *(Stay/go strategy in Period 1). The Bureaucrat's stay/go strategy in Period 1 is:*

$$g_1(x_1^F; b) = \begin{cases} 1 \ \textit{if } \psi^B(x_1^F; b) + V(0) < 0 \\ 0 \ \textit{otherwise} \end{cases}$$

Proof. B's Period 1 effort costs are sunk at the stay/go decision, hence only the policy impact of x_1^F and the continuation value matters. If B quits ($g_1 = 1$) her policy utility is 0 and her continuation value $V(1) = 0$. If she stays ($g_1 = 0$) she receives $\psi^B(x_1^F) + V(0)$. The comparison of these two utility values determines the strategy. $\square$

Proposition 9. *(Policy Choice and Recommendation in Period 1) The President's final policy selection strategy and the Bureaucrat's policy proposal strategy in Period 1 are the same as in Period 2.*

Proof. Given a future-is-now president, the President's final policy choice in Period 1 must be the same as in Period 2. In addition, no deviation from B's Period 2 proposal strategy could be profitable for B in Period 1, as B recommends the most profitable policy that an unsuccessful P will accept. Hence the earlier Proposition also describes Presidential final policy choice and Bureaucrat's policy proposal strategies in Period 1. $\square$

Given the two previous propositions and the fact that $V(0) > 0$, the following corollary is straightforward.

Corollary 10. *(Actual Stay/Go in Period 1). In Period 1*

$$g_1 = \begin{cases} 1 \ \textit{if} & \begin{cases} L \textit{ is president, } L \textit{ succeeded and } |\ell| > V(0) \\ R \textit{ is president, } R \textit{ succeeded, } b \textit{ lies in Region 1 and } 2b - r + V(0) < 0 \end{cases} \\ \\ 0 \ \textit{if} & \begin{cases} L \textit{ is president and } \begin{cases} L' \textit{ failed} \\ L \textit{ succeeded but } |\ell| \leq V(0) \end{cases} \\ R \textit{ is president and } \begin{cases} R \textit{ failed} \\ R \textit{ succeeded but } b \textit{ lies in Regions 2-4} \\ R \textit{ succeeded, } b \textit{ lies in Region 1 but } 2b - r + V(0) \geq 0 \end{cases} \end{cases} \end{cases}$$

Proof. Recall that B will exit if and only if $\psi^B(x_1^F) + V(0) < 0$. Recall as well that $V(0) > 0$. If L is president and L's proposal effort failed, $x_1^F = q$ so $\psi^B(x_1^F) = 0$ and thus $\psi^B(x_1^F) + V(0) > 0$. If L's proposal effort succeeded, $x_1^F = \ell$ and $\psi^B(x_1^F) = \ell < 0$ for all B. So B stays or goes as $|\ell| \lessgtr V(0)$. If R is president and R's proposal effort failed, either $x_1^F = q$ (when B's effort failed), $x_1^F = b$ for a successful Region 1-3 B, or $x_1^F = 2r$ for a successful Region 4 B. In all these cases $\psi^B(x_2^F) \geq 0$ so $\psi^B(x_2^F) + V(0) > 0$ so B stays. If R is president and R's proposal effort succeeded, $x_1^F = r$. By construction $\psi^B(r) \geq 0$ for all B in Regions 2-4 so for such B $\psi^B(x_1^F) + V(0) > 0$ and they stay. And, by construction, $\psi^B(r) = 2b - r < 0$ for all B in Region 1. Region 1 B then stays or goes as $2b - r + V(0) \gtrless 0$. These exhaust all the cases. $\square$

The corollary identifies two situations in which Period 1 zealous B might quit: 1) when L is president, L's proposal effort succeeded, and $\ell + V(0) < 0$, and 2) when R is president, R's effort succeeded, b lies in Region 1, and $2b - r + V(0) < 0$. The comparative static results in the text on when quitting is "more likely" consider the effects of changes in exogenous variables on the magnitudes of $\ell + V(0)$ and $2b - r + V(0)$, respectively.

Remark 11. *(WTO) For b in all four regions, $\ell + V(0)$ is increasing in π and decreasing in $|\ell|$.*

Proof. From inspection of Table 1, $V(0)$ is increasing in π in all four regions. $V(0)$ is not a function of ℓ and $\ell < 0$ so $\ell + V(0)$ is decreasing for b in all four regions.

Remark 12. *(IMD) A small group of bureaucrats in Region 1 do not exit when R's proposal effort succeeds.*

Proof. In Region 1 the stay condition after a successful R imposes $x_1^F = r$ is $2b - r + V(0) \geq 0$. Recall that in Region 1 $V(0) = \frac{b^2(2-r)^2}{(4-b^2)^2}\pi$. Note that $\lim_{b \to \frac{r}{2}} \left(2b - r + \frac{b^2(2-r)^2}{(4-b^2)^2}\pi\right) = \frac{4(2-r^2)r^2}{(16-r^2)^2}\pi > 0$, so as b approaches the upper bound of Region 1 $(r/2)$ there is a group of bureaucrats who do not exit. A closed form solution for b such that $b - r + V(0) = 0$ is intractable but numerical solutions indicate that for plausible parameter values the range of staying bureaucrats is very small. $\square$

Remark 13. *(IMD) For b in Region 1, $2b - r + V(0)$ is increasing in π, increasing in b, and decreasing in r.*

Proof. Recall that $0 \leq b < 2$, $0 \leq r \leq 1$, and $V(0) = \frac{b^2(2-r)^2}{(4-b^2)^2}\pi$. Hence $\frac{\partial}{\partial \pi}(2b - r + \frac{b^2(2-r)^2}{(4-b^2)^2}\pi) = \frac{b^2(2-r)^2}{(4-b^2)^2} \geq 0$; $\frac{\partial}{\partial b}(2b - r + \frac{b^2(2-r)^2}{(4-b^2)^2}\pi) = 2 + \frac{2b(4+b^2)(2-r)^2}{(4-b^2)^3}\pi > 0$; and $\frac{\partial}{\partial r}(2b - r + \frac{b^2(2-r)^2}{(4-b^2)^2}\pi) = -1 - \frac{2b^2(2-r)}{(4-b^2)^2}\pi < 0$. $\square$

We now consider expected utilities in Period 1 in order to derive reaction functions. Assume an R president. Recall we assume a zealous B in Period 1. From above, B in Regions 2-4 will not quit in Period 1. Hence, prior to undertaking effort, the expected utility for B in Regions 2-4 is:

$$Eu_1^B(e_1^B; e_1^R, r, b) = \begin{cases} e_1^R(2b - r) + \left(1 - e_1^R\right)e_1^B b + V(0) - \left(e_1^B\right)^2 & \text{if } b \text{ is in Region 2} \\ e_1^R r + \left(1 - e_1^R\right)e_1^B b + V(0) - \left(e_1^B\right)^2 & \text{if } b \text{ is in Region 3} \\ e_1^R r + \left(1 - e_1^R\right)e_1^B 2r + V(0) - \left(e_1^B\right)^2 & \text{if } b \text{ is in Region 4} \end{cases}$$

For B in Region 1 there are two possibilities: 1) If R is successful, B exits; 2) If R is

successful, B stays. Hence:

$$Eu_1^B(e_1^B; e_1^R, r, b) = \begin{cases} e_1^R(2b - r) + \left(1 - e_1^R\right) e_1^B b + V(0) - \left(e_1^R\right)^2 & \text{if Region 1 } B \text{ stays when } R \text{ succeeds} \\ \left(1 - e_1^R\right)\left(e_1^B b + V(0)\right) - \left(e_1^R\right)^2 & \text{if Region 1 } B \text{ quits when } R \text{ succeeds} \end{cases}$$

For R:

$$Eu_1^R(e_1^R; e_1^B, r, b) = \begin{cases} e_1^R r + \left(1 - e_1^R\right) e_1^B b - \left(e_1^R\right)^2 & \text{if } b \text{ is in Region 1 or 2} \\ e_1^R r + \left(1 - e_1^R\right) e_1^B (2r - b) - \left(e_1^R\right)^2 & \text{if } b \text{ is in Region 3} \\ e_1^R r - \left(e_1^R\right)^2 & \text{if } b \text{ is in Region 4} \end{cases}$$

Assume an $L-$President. For B there are two possibilities: 1) If L is successful, B exits; 2) If L is successful, B stays. Hence:

$$Eu_1^B(e_1^B; e_1^L, \ell, b) = \begin{cases} e_1^L \ell + V(0) - \left(e_1^B\right)^2 & \text{if } b \text{ stays when } L \text{ succeeds} \\ \left(1 - e_1^L\right) V(0) - \left(e_1^B\right)^2 & \text{if } b \text{ quits when } L \text{ succeeds} \end{cases}$$

For L:

$$Eu_1^L(e_1^L; e_1^B, \ell, b) = e_1^L |\ell| - \left(e_1^L\right)^2$$

Using these expected utilities one may straightforwardly derive reaction functions in effort for the actors. These are:

$$\text{(C1)} \qquad e_1^B(e_1^i; b, r) = \begin{cases} \frac{(1 - e_1^R)b}{2} & \text{if } i = R \text{ and } b \text{ is in Regions 1, 2, or 3} \\ (1 - e_1^R)r & \text{if } i = R \text{ and } b \text{ is in Region 4} \\ 0 & \text{if } i = L \end{cases}$$

$$
\text{(C2)} \qquad e_1^R(e_1^B; r, b) = \begin{cases} \frac{r - e_1^B b}{2} & \text{if } b \text{ is in Regions 1 and 2} \\[2mm] \frac{r - e_1^B(2r - b)}{2} & \text{if } b \text{ is in Region 3} \\[2mm] \frac{r}{2} & \text{if } b \text{ is in Region 4} \end{cases}
$$

$$
\text{(C3)} \qquad e_1^L(\ell) = \frac{|\ell|}{2}
$$

The reaction functions $e^i(e^B)$ and $e^B(e^i)$ (Equations C1 , C2 and C3) may be solved simultaneously to derive the equilibrium policymaking efforts:

$$
\text{(C4)} \qquad \left(e^{i*}, e^{B*}\right) = \begin{cases} \left(\frac{2r - b^2}{4 - b^2}, \frac{b(2 - r)}{4 - b^2}\right) & \text{if } i = R,\ \theta = 1,\ \text{and } b \text{ is in Regions 1 and 2} \\[2mm] \left(\frac{2r + b^2 - 2br}{4 + b^2 - 2br}, \frac{b(2 - r)}{4 + b^2 - 2br}\right) & \text{if } i = R,\ \theta = 1,\ \text{and } b \text{ is in Region 3} \\[2mm] \left(\frac{r}{2}, \frac{r(2 - r)}{2}\right) & \text{if } i = R,\ \theta = 1,\ \text{and } b \text{ is in Region 4} \\[2mm] \left(\frac{p}{2}, 0\right) & \text{otherwise } (i = L \text{ and/or } \theta = 0) \end{cases}
$$

As in Period 2, these values require $0 \leq b < 2$ and $0 \leq r \leq 1$.

Expected policy in a period is simply $e^{i*}p + (1 - e^{i*})e^{B*}x^B$ and may readily be calculated using the above results.

Finally, consider the expected utility of an $R-$President at the beginning of Period 1. As noted in the text this is $Eu_1^R(e_1^{R*}, e_1^{B*}; b) = \psi^R(r)(e^{R*}) + \psi^i(x^{B*})\left(1 - e^{R*}\right)e^{B*} - \left(e^{R*}\right)^2$. Using the definition of policy utility and optimal policy recommendations and choices, this is:

$$
Eu_1^R(e_1^{R*}, e_1^{B*}; b) = \begin{cases} re^{R*} - \left(e^{R*}\right)^2 & \text{if } b < 0\ (L - \text{side Bureaucrat}) \\[2mm] re^{R*} + b\left(1 - e^{R*}\right)e^{B*} - \left(e^{R*}\right)^2 & \text{if } 0 < b < r\ \text{(Regions 1 and 2)} \\[2mm] re^{R*} + (2r - b)\left(1 - e^{R*}\right)e^{B*} - \left(e^{R*}\right)^2 & \text{if } r \leq b \leq 2r\ \text{(Region 3)} \\[2mm] re^{R*} - \left(e^{R*}\right)^2 & \text{if } b > 2r\ \text{(Region 4)} \end{cases}
$$

and using Equation C4

(C5)

$$Eu_1^R(e_1^{R*}, e_1^{B*}; b) = \begin{cases} \frac{r^2}{4} \text{ if } b < 0 \ (L-\text{side Bureaucrat}) \\ \frac{8b^2(1-r)-b^4(1-r)+4r^2}{(b^2-4)^2} \text{ if } 0 < b < r \ (\text{Regions 1 and 2}) \\ \frac{-b^4(1-r)+16b(1-r)r+4b^3(1-r)r+4r^2+4b^2(-2=2r-r^2+r^3)}{(4+b^2-4br)^2} \text{ if } r \leq b \leq 2r \ (\text{Region 3}) \\ \frac{r^2}{4} \text{ if } b > 2r \ (\text{Region 4}) \end{cases}$$

Equation C5 is displayed by the heavy line in the left-hand panel of Figure 6.

REFERENCES

Aberbach, Joel, Robert Putnam, and Bert Rockman. 1981. *Bureaucrats and Politicians in Western Democracies*. Cambridge, MA: Harvard University Press.

Aghion, Phillipe and Jean Tirole. 1997. "Formal and Real Authority in Organizations," *Journal of Political Economy* 105(1): 1-29.

Baker, George, Robert Gibbons, and Kevin Murphy. 1999. "Informal Authority in Organizations," *Journal of Law, Economics, and Organization* 15:56-73.

Bertelli, Anthony. 2007. "Determinants of Bureaucratic Turnover Intention: Evidence from the Department of the Treasury," *Journal of Public Administration Research and Theory* 17: 235-258.

Bertelli, Anthony M., and David E. Lewis. 2013. "Policy Influence, Agency-Specific Expertise, and Exit in the Federal Service." *Journal of Public Administration Research and Theory* 23(2): 223-45.

Bolton, Alex, John De Figueiredo, and David Lewis. 2016. "Elections, Ideology, and Turnover in the U.S. Federal Government," National Bureau of Economic Research Working Paper #22932.

Bueno de Mesquita, Ethan and Matthew Stephenson. 2007. "Regulatory Quality Under Imperfect Oversight," *American Political Science Review* 101(3): 605-620.

Bulow, Jeremy, John Geanakoplos, and Paul Klemperer. 1985. "Multi-market Oligopoly: Strategic Substitutes and Strategic Complements," *Journal of Political Economy* 93:488-511.

Burke, John P. 1992. *The National Security Advisor and Presidential Decision Making.* College Station, TX: Texas A&M University Press.

Callander, Steven. 2011. "Searching for Good Policies," *American Political Science Review* 105(4): 643-662.

Cama, Timothy. 2017. "White House details plan to roll back environmental regs," *The Hill*, July 20, 2017, found at: http://thehill.com/policy/energy-environment/342910 -white-house-details-environmental-deregulatory -plan

Cameron, Charles M. 2000. *Veto Bargaining; Presidents and the Politics of Negative Power.* Cambridge University Press.

Cameron, Charles M., John M. de Figueiredo, and David E. Lewis. 2016. "Public Sector Personnel Economics: Wages, Promotions, and the Competence-Control Tradeoff," Advances in Strategic Managment, forthcoming.

Chappell, Bill. 2017. National Public Radio, November 3, 2017, found at: https://www.npr.org/sections/ thetwo- way /2017/11/03/561797675/ im-the-only-one-that-matters-trump-says-of-state-dept-job-vacancies

Chiou, Fang-Yi and Lawrence S. Rothenberg. 2017. *The Enigma of Presidential Power.* Cambridge University Press.

Clinton, Joshua D., Anthony Bertelli, Christian Grose, David E. Lewis and David C. Nixon. 2012. "Separated Powers in the United States: The Ideology of Agencies, Presidents and Congress." *American Journal of Political Science* 56(2): 341-354.

Cohen, Roger. 2017. "The Desperation of our Diplomats," *New York Times*, July 28, 2017, found at https://www.nytimes.com /2017/07/28/opinion/sunday/trump-tillerson-state-department-diplomats.html

Cooper, Helen. 2018. "Jim Mattis, Defense Secretary, Resigns in Rebuke of Trump's Worldview," *New York Times*, December 20. https://www.nytimes.com/2018/12/20/us/politics/jim-mattis-defense-secretary-trump.html

Cooper, Phillip J. 2002. *By Order of the President: The Use and Abuse of Executive Direct Action*. Lawrence, KS: University Press of Kansas.

Davidson, Joe. 2017a. "EPA won't be able to do the 'right thing' under Trump, says latest protesting official," *Washington Post*, August 1, 2017, found at: https://www.washingtonpost.com /news/powerpost/ wp/2017/08/01/epa-doing-the-right-thing-is-not -possible-under-trump-says-resigning-official/ ?utm_term=.f9c7d302ac93

Davidson, Joe. 2017b. "EPA Staffer leaves with a bang, blasting agency policies under Trump," *Washington Post*, April 7, 2017, found at: https://www.washingtonpost.com/news /powerpost/wp/2017/04/07/epa-staffer -leaves-with-a-bang-blasting- agency-policies-under-trump/ ?utm_term=.317ae66cdbb4

Deering, Christopher J. and Forrest Maltzman. 1999. "The Politics of Executive Orders: Legislative Constraints on Presidential Power," *Political Research Quarterly* 52(4):767-83.

de Figueiredo, John M. and Edward H. Stiglitz. 2017. "Signing Statements and Presidentializing Legislative History," *Administrative Law Review* 69(4): 841-868.

Dewatripont, Mathias, Ian Jewitt, and Jean Tirole. 1999. "The Economics of Career Concerns, Part II: Application to Missions and Accountability of Government Agencies," *Review of Economic Studies* 66:199-217.

Dickinson, Matthew J. 1997. *Bitter Harvest: FDR, Presidential Power and the Growth of the Presidential Branch.* New York: Cambridge University Press.

Dixit, Avinash. 1986. "Comparative Statics for Oligopoly," *International Economic Review* 107-122.

Doherty, Kathleen, David E. Lewis, and Scott Limbocker. 2016. "Politics or Performance in Executive Turnover: Politicizing Agency Choke Points," USC Price School of Public Affairs Working Paper.

Downs, Anthony. *Inside Bureaucracy.* Boston: Little, Brown.

Epstein, David, and Sharyn O'Halloran. 1999. *Delegating Powers.* New York, NY: Cambridge University Press.

Fisher, Louis. 2000. *Congressional Abdication on War and Spending.* College Station, TX: Texas A&M University Press.

Gailmard, Sean. 2002. "Expertise, Subversion, and Bureaucratic Dscretion," *Journal of Law, Economics, and Organization* 18(2): 536-555.

Gailmard, Sean and John Patty. 2007. "Slackers and Zealots: Civil Service, Policy Discretion, and Bureaucratic Expertise," *American Journal of Political Science* 51: 873-889.

Hart, John. 1992. *The Presidential Branch: From Washington to Clinton.* Chatham, NJ: Chatham House.

Higgs, Robert. 1987. *Crisis and Leviathan: Critical Episodes in the Growth of American Government.* Oxford University Press.

Hirschman, Albert O. 1970. *Exit, Voice, and Loyalty: Responses to Decline in Firms, Organizations, and States.* Cambridge, MA: Harvard University Press.

Howell, William. 2003. *Power Without Persuasion: The Politics of Direct Presidential Action.* Princeton, NJ: Princeton University Press.

Huber, John D., and Charles R. Shipan. 2002. *Deliberate Discretion?* New York: Cambridge University Press.

Kessler, David. 2002. *A Question of Intent: A Great American Battle with a Deadly Industry.* Public Affairs.

Kranz, Gene. 2001. *Failure Is Not An Option: Mission Control from Mercury to Apollo 13 and Beyond.* Simon and Schuster.

Lee, Soo-Young, and Andrew B. Whitford. 2008. "Exit, Voice, Loyalty, and Pay: Evidence from the Public Workforce." *Journal of Public Administration Research and Theory* 18(4): 647-71.

Lewis, David E. 2008. *The Politics of Presidential Appointments: Political Control and Bureaucratic Performance.* Princeton, NJ: Princeton University Press.

Lewis, David E. and Mark Richardson. 2017. "Personnel System Under Stress: Results of the 2014 Survey on the Future of Government Service," Center for the Study of Democratic Institutions Working Paper 2-2017 http://www.vanderbilt.edu/csdi/research/lewis_richardson_2014sfgs.pdf (accessed April 30 2017)

Light, Paul. C. 1982. *The President's Agenda.* Baltimore, MD: The Johns Hopkins University Press.

Lowi, Theodore. J. 1985. *The Personal President: Power Invested, Promise Unfulfilled.* Ithaca, NY: Cornell University Press.

Lynch, Colum and Robbie Gramer. 2017. "With Departure of Top Lawyer, State Department Exodus Continues," *Foreign Policy*, August 30, 2017, found at: http://foreignpolicy.com/2017/08/30/with-departure-of-top-lawyer-state-department-exodus-continues/

Matthews, Steven. 1989. "Veto Threats: Rhetoric in a Bargaining Game," *Quarterly Journal of Economics* 104(2):347-369.

Mayer, Kenneth R. 2001. *With the Stroke of a Pen: Executive Orders and Presidential Power*. Princeton, NJ: Princeton University Press.

Milkis, Sidney M. and Michael Nelson. 2012. T*he American Presidency: Origins and Development, 1776-2011*, 6th ed. Washington, DC: CQ Press.

Moe, Terry. 1985. "The Politicized Presidency," in John Chubb and Paul Peterson (eds) *The New Direction in American Politics*. Brooking Institution Press.

Moe, Terry. 2013. "Delegation, Control, and the Study of Public Bureaucracy," pp. 1148-1181 in Gibbons and Roberts (eds) *The Handbook of Organizational Economics*, Princeton University Press.

Nathan, Richard P. 1975. *The Plot that Failed: Nixon and the Administrative Presidency*. New York, NY: John Wiley.

Neustadt, Richard E. 1954. "Presidency and Legislation: The Growth of Central Clearance," *American Political Science Review* 48(3):641-71.

Perry, James L. and Lois R. Wise. 1990. "The Motivational Bases of Public Service," *Public Administration Review* 50:367-373.

Polsby, Nelson W. 1984. *Political innovation in America: The Politics of Policy Initiation*. Yale University Press.

Richardson, Mark D. 2017. "Politization and Expertise: Exit, Effort, and Investment," Manuscript, Department of Political Science, Vanderbilt University (https://media.wix.com/ugd/dfd831_d827d4e9c77641ce90c73e2bb3799c18.pdf, accessed April 4, 2017).

Romer, Thomas and Howard Rosenthal. 1978. "Political Resource Allocation, Controlled Agendas, and the Status Quo," *Public Choice* 33: 27-43.

Rudalevige, Andrew. 2002. *Managing the President's Program: Centralization and Legislative Policy Formulation, 1949-1996.* Princeton, NJ: Princeton University Press.

Rudalevige, Andrew. 2005. *The New Imperial Presidency: Renewing Presidential Power after Watergate.* Ann Arbor, MI: University of Michigan Press.

Schlesinger, Arthur M. 1973. *The Imperial Presidency.* Boston, MA: Houghton Mifflin Co.

Shapiro, Carl and Joseph Stiglitz. 1984. "Equilibrium Unemployment as a Worker Discipline Devise," *American Economic Review* 433-444.

Stephenson, Matthew C. 2007. "Bureaucratic Decision Costs and Endogenous Agency Expertise," *Journal of Law, Economics, and Organization* 23(2):469-98.

Stephenson, Barbara. 2017. "Time to Ask Why," *Foreign Service Journal* 94(10): 10.

Steinzor, Rena. 2012. "The Case for Abolishing Centralized White House Regulatory Review," *University of Michigan Journal of Environmental & Administrative Law* 1(1): 209-86.

Waterman, Richard W. 2009. "The Administrative Presidency, Unilateral Power, and the Unitary Executive Theory." *Presidential Studies Quarterly* 39(1):5-9.

Weko, Thomas J. 1995. *The Politicizing Presidency: The White House Personnel Office, 1948-1994.* Lawrence, KS: University Press of Kansas.

Notes

[1] Cohen 2017 quoting Dana Shell Smith, former ambassador to Qatar.

[2] Davidson 2017b quoting a letter from Mike Cox.

[3] The model in the present paper differs from that in Aghion and Tirole 1997 in four respects: it features two periods not one, spatial policy preferences rather than goods-oriented preferences, heterogeneous agents rather than homogeneous one, and agents have the ability to quit their jobs.

[4] On the motivation of public sector bureaucrats, see inter alia Bertelli 2007; Dewatripont et al. 1999; Downs 1967; Gailmard and Patty 2007; Perry and Wise 1990.

[5] Policy sabotage is a sufficiently complex, analytically distinct topic to deserve its own analysis, see e.g., Gailmard 2002.

[6] The policy making literature is replete with case studies of policy innovation, though most focus on successful attempts, e.g., Polsby 1984. Kessler 2002 examines a failed attempt.

[7] This simple technology also conveniently sidesteps difficult problems of information expropriation and policy learning that arise in spatially-based principal-agent models. Callan-

der 2011 provides a discussion.

[8]For further discussion of stay/go decisions in policy contexts, see inter alia Bertelli and Lewis 2013; Hirschman 1970; Lee and Whitford 2008.

[9]We assume all zealous bureaucrats in a given agency have the same ideal policy. If one zealot with ideal point b prefers to depart, all other zealots in the agency will as well. Hence, the replacement must be a slacker.

[10]Close readers will note that we abstract from wages. We return to wages, briefly, in Section VI.

[11]On forward-looking bureaucrats see inter alia Lewis 2008; on the present orientation of presidents, see Light 1982 and Lowi 1985.

[12]The expected utility of zealous Bureaucrats to an $R-$president is detailed in Equation C5 in Appendix C and shown by the dark line in the left-hand panel of Figure 6.

[13]If L is sufficiently close to 0, then fewer Region 1 zealous bureaucrats will quit after the L president's effort succeeds, than after the R president's effort succeeds. The relevant conditions are: 1) $V(0) + \ell \geq 0$ and 2) $V(0) + \ell > V(0) = 2b - r$, for $0 \leq b < r/2$. Because $V(0)$ is so small for Region 1 bureaucrats, the first requirement is quite stringent.

[14]See the third line in Equation C4 in Appendix C.

[15]See Equation A2 in Appendix A.

[16]There is an additional scenario in which $r < v^r$ (where v^r denotes the ideal policy of the veto pivot) so the President is not constrained by Congress but some Region 3 and 4 Bureaucrats may be, if the president's policy effort fails but their's succeeds.