# ONLINE APPENDIX A: THEORETICAL APPENDIX

## A Theory of Vacancies and Filled Appointments

The theory presented here is built on a stylized setting involving the president $P$ and the Senate $S$. In the first period, the president is presented with a vacant PAS position.[49] While there are potential non-random aspects of the data generating process behind vacancies, particularly for term-limited positions in independent agencies, I will black-box the vacancy generation and assume, for simplicity, that they are exogenous. The first period mimics a decision-theoretic model as the president makes a sequence of decisions: first whether to immediately fill the empty post with an interim and then whether to submit a nominee for Senate confirmation. Essentially, when faced with an opening, the president has three choices: fill the position immediately with an interim or not, submit a nominee for confirmation or not, or leave the position empty.

Given the advantage of a first-mover, the president sets the reversion point (i.e. an empty or temporarily filled position) for the Senate's choice in the second period to confirm a nominee, if one is submitted. However, the president need not submit a nominee for the Senate's consideration. When the president decides against nominating a permanent appointee after appointing an interim, he circumvents the Senate's right to review, advise, and consent to the individuals serving in key policy-making positions in the Executive Branch. Alternatively, if the president does not appoint an interim or submit a nominee, he maintains the empty post and, again, sidesteps Senate participation in how the position will be filled. The combinations of strategies can lead to any one of four outcomes: an empty position, a position filled by an interim appointee with no action toward a permanent appointee, a position filled by a permanent appointee, or a position filled by an interim and then a permanent appointee.

The political capital and time required for confirmation negotiations are assumed to be costly, albeit not necessarily equally, to both the president and the Senate.[50] These time-invariant costs are indexed to each player and incurred only when a nominee is submitted for Senate confirmation.[51] Specifically, I assume that these non-zero costs are common knowledge, exogenously determined, and assigned by Nature for each vacant position. While several features[52] of the confirmation process can be engineered to decrease or increase bargaining costs, I assume that these adjustments occur outside the scope of the game.

---

[49]Either at the start of or randomly throughout his term.

[50]The cost of confirmation might also be in terms of future legislative success of administration policy proposals (Madonna, Monogan III, and Vining Jr).

[51]Extensions of this model will consider the impact of time-based costs and costs incurred in the absence of a nominee.

[52]Bargaining for the success of a nominee throughout the confirmation process requires resources in terms of staff attention, opportunity costs of diverting valuable time away from other legislative (or executive) business, and political concessions from both the administration and members of the Senate. In cases of unified government – when the president and Senate are most likely to have similar, or even identical, priorities – successfully confirmed nominees require fewer staff resources and political concessions. Alternatively, easing the procedural rules that govern the confirmation process by limiting committee hearings and floor debate or relaxing the cloture requirement (i.e. the 'nuclear' option) decreases the time spent on confirmation and its consequent opportunity costs. The degree to which these bargaining costs diminish any benefit of a permanent, confirmed appointee might be minimized by unified government or procedural easing, however, they remain non-zero.

***Policy Priorities over the Status Quo: Expansion versus Contraction***   A position's *value*, one of the central elements of the theory presented below, is comprised of its capacity to control policy and each player's priority for the policy area under the position's jurisdiction. *Policy priority* captures, in part, whether the player prefers to expand, contract, or neutrally maintain the status quo.[53] Thus, expansion- or contraction-branded priorities classify the player's ideal policy outcome relative to the status quo, achieved by the appointee through changes to an agency's implementation activities. In other words, expansion priorities emphasize increasing the reach of an agency in a given policy area whereas contraction priorities focus on shrinking the agency's footprint. Critically, the expansion-contraction dimension is not a surrogate for the standard liberal-conservative one. Here, priorities over the status quo are distinct from ideology in that liberal and conservative actors both prefer to diminish *and* cultivate policy reach, albeit often on competing issues. For instance, self-styled conservative policy priorities might include expansion in border protection and reductions in anti-trust enforcement, whereas liberal priorities might include decreasing immigration enforcement and expanding federal lands protections. Thus, while policy priorities are not agnostic of ideology, this expansion-contraction dimension generalizes over time and shifting party platforms.

Traditionally, when we theorize about appointees, we begin with ideology. As mentioned previously, most models of presidential appointments focus on the choice of nominee in terms of *ideological* alignment with the president and the Senate. Yet, ideology is just one element in the basket of what appointments can deliver. When we entertain what the president and the Senate are looking to achieve more broadly, their policy agenda, we can generalize to consider how a filled or unfilled appointment advances that agenda. Thus, to focus on the choice to fill the position rather than whom to fill it with, I assume that interim appointees and permanent nominees are identical in terms of *effectiveness*.[54] However, that is not to say that ideology and effectiveness are mutually exclusive. Ideology provides a measure of policy preferences and an indication of one's policy agenda, but does not provide any indication of one's *ability* to achieve those policy goals. Ideological alignment between agents and principals matters less if agents are unable to accomplish goals in line with those preferences. In other words, ideology does not reveal an agent's effectiveness in delivering realized value to a principal.[55] Moreover, an ideologically-aligned appointee in a low capacity position that is institutionally constrained has minimal ability to effectively shape policy change, mimicking an ineffective appointee regardless of their ideological alignment. Accordingly, this model deviates from previous theories by incorporating the effectiveness of an appointee instead

---

[53] While the status quo has long been recognized as 'sticky' and not easily moved by new legislation, particularly in an era of polarization and routine obstruction (e.g., McCarty, Poole, and Rosenthal), achieving policy goals through implementation and administrative law offers a viable alternative (Farber and O'Connell).

[54] To clarify, I am assuming equal effectiveness per unit of time. We might expect that the longer someone serves (more units of time in a position) the more effective they become, comparatively.

[55] One could reason that if the objective is, in effect, ideological, then the agent's alignment with a principal could indicate effectiveness in delivering value. However, I contend that policy preferences and priorities vis-a-vis the status quo ultimately transcend ideology. Our conventional understanding of ideology derives from a collection of policy preferences along a policy dimension (liberal versus conservative; "left" versus "right"), and our measures of ideology capture these preferences as ideal points (e.g., NOMINATE scores from Congressional roll call votes (Lewis, Poole, and Rosenthal 2017) or citizen ideology estimates using item response theory models (Tausanovitch and Warshaw)). Thus, while an objective in selecting an agent might be congruent ideologies, those *ideologies* represent policy preferences, whereas *effectiveness*, separately, represents the agent's ability to achieve those policy goals.

of ideological alignment.

*Strategies.* At any point in a president's term, there exists a set of vacant PAS positions $Y$; naturally, $Y$ is a larger set at the start of a term. Nature chooses an empty position $y \in Y$ with position value $V_{yi}$ to each player $i$. The president $P$ then makes a strategy choice $p$ from four possible options, $p \in \{I\&\neg N, I\&N, \neg I\&N, \neg I\&\neg N\}$: to fill immediately with an interim appointee without submitting a nominee for Senate confirmation ($p = I \& \neg N$), fill immediately and nominate ($p = I \& N$), not fill immediately but submit a nominee ($p = \neg I \& N$), or not fill at all ($p = \neg I \& \neg N$). If the president chooses a strategy that includes a nomination, the Senate $S$ then makes a strategy choice $s \in \{Confirm, \neg Confirm\}^2$ to confirm the nominee or not. While this strategy set condenses the larger set of available Senate responses (i.e. holds and blue-slips, filibusters, returns, and confirmations), it covers the principal outcomes of the confirmation process.

*Utility Functions.* The president $P$ and the Senate $S$ derive utility from securing the value of a PAS position and achieving their priorities to expand or contract policy implementation. The generalized utility function player $i$ reflects the payoff for filling the position immediately ($\beta\tau V_{yi}$), the payoff for filling to position for the long-term ($\beta\tau\gamma V_{yi}$), and the bargaining cost ($c_i$) of the confirmation process such that:

$$u_i = \beta\tau_{(f,\neg f)}V_{yi} + \beta\tau_{(f,\neg f)}\gamma V_{yi} - c_i \tag{2}$$

Given the president's strategy set $p \in \{I\&\neg N, I\&N, \neg I\&N, \neg I\&\neg N\}$, the Senate's payoff is

$$U_S(s;p) = \begin{cases} \beta\tau_{f_1}V_{yS} + \gamma\beta\tau_{f_2}V_{yS} - c_S, & \text{if } s = Confirm \ \& \ p = I\&N; \\ \tau_{\neg f_1}V_{yS} + \gamma\beta\tau_{f_2}V_{yS} - c_S, & \text{if } s = Confirm \ \& \ p = \neg I\&N; \\ \beta\tau_f V_{yS} - c_S, & \text{if } s = \neg \ Confirm \ \& \ p = I\&N; \\ \tau_{\neg f}V_{yS} - c_S, & \text{if } s = \neg \ Confirm \ \& \ p = \neg I\&N; \\ \beta\tau_f V_{yS}, & \text{if } p = I\&\neg N; \\ \tau_{\neg f}V_{yS}, & \text{if } p = \neg I\&\neg N, \end{cases}$$

while, given the Senate's strategy set $s \in \{Confirm, \neg \ Confirm\}$ the president's payoff is

$$U_P(p;s) = \begin{cases} \beta\tau_{f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P, & \text{if } s = Confirm \ \& \ p = I\&N; \\ \tau_{\neg f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P, & \text{if } s = Confirm \ \& \ p = \neg I\&N; \\ \beta\tau_{\neg f}V_{yP} - c_P, & \text{if } s = \neg \ Confirm \ \& \ p = I\&N; \\ \tau_{\neg f}V_{yP} - c_P, & \text{if } s = \neg \ Confirm \ \& \ p = \neg I\&N; \\ \beta\tau_f V_{yP}, & \text{if } p = I\&\neg N; \\ \tau_{\neg f}V_{yP}, & \text{if } p = \neg I\&\neg N, \end{cases}$$

3

where $\tau_{(f, \neg f)}$ differentiates between a filled and unfilled position (in the first and second period if necessary), $\beta \in (0, 1)$ represents the effectiveness of the (interim or confirmed) appointee, $|\gamma| \geq 1$ is the confirmed appointee's permanence, and $c_i > 0$ accounts for the transaction costs to both players from bargaining over confirmation.

*Position value*, $V_{yi} \in (-1, 1)$, is exogenously determined and represents each position's potential role in advancing player $i$'s larger policy agenda. Specifically, $V_{yi}$ is a function of the position's capacity to control policy and the player's priorities of expansion, contraction, or neutrally maintaining the status quo policy reach of the agency. Importantly, players' larger policy agendas are common knowledge, determined ex ante, and exogenous to the specific positions' policy jurisdictions.[56] Nature maps these policy agendas to the set of executive department and independent agencies with PAS positions, generating policy priorities for each parent agency. These policy priorities range from contracting implementation and outcomes under agency $a$'s jurisdiction, expanding those outcomes, or neutrally maintaining the status quo In other words, these priorities represent the degree to which each player would like to undercut, strengthen, or ignore the agency's status quo implementation, regulation, or policy generating efforts.[57] However, the extent to which a specific position can contribute to each player's policy priorities is institutionally constrained by the position's capacity to advance those priorities. *Low capacity* positions are administrative or routine in nature, have little to no latitude, and generally provide few opportunities to reach larger political goals. Alternatively, *high capacity* positions require more expertise, have more room to influence policy outcomes, and advance a larger political agenda. When a position has a low policy capacity any appointee – temporary or permanent – has minimal ability to affect policy change and the value of that position to a player is nil ($V_{yi} = 0$) no matter the policy priorities. Likewise, when a player does not prioritize the agency and has strict preferences for contracting or expanding policies under agency $a$'s purview the value of the position for advancing the player's larger agenda is nil ($V_{yi} = 0$) no matter the position's capacity level. Alternatively, the positions with the highest absolute value ($|V_{yi}| = 1$) are high capacity and high priority. Thus, to make the theory's implications as stark as possible, the value of an empty position is non-zero only when a player prioritizes the agency's policy jurisdiction and the position has the capacity to achieve those priorities.

As my objective is to provide intuition for the circumstances under which a president and the Senate might each prefer an empty PAS position to one filled by an interim or confirmed appointee, I focus the model on the operational differences between a filled and empty position instead of ideological differences between players or between each player and an appointee. I build this model on the core assumption that leadership positions in the federal bureaucracy are valuable for their ability to *deliver* outcomes in line with player's policy priorities. Ideological (mis)alignment between

---

[56]In other words, I assume that players do not target specific positions for expansion or contraction *per se* but establish a policy agenda and see positions and agencies with pertinent policy jurisdictions as vehicles for achieving policy goals. For instance, a president's larger policy agenda might prioritize environmental deregulation and devolution of education policy to the states, without tying these priorities to the specific positions like the Assistant Secretary for the Office of Fossil Fuels in the Department of Energy or Under Secretary for the Department of Education.

[57]For instance, a president's priorities might include rapid deregulation of liquefied natural gas pipelines by weakening the Federal Energy Regulatory Commission; increasing protections for intellectual property by strengthening the Patent and Trademark Office; or simply maintain the status quo in government oversight by generally ignoring the role of Inspectors General.

principals and agents, while a clear indicator of (dis)agreement on the content of policy, does not sufficiently determine the effectiveness of an appointee (or the lack thereof) in achieving outcomes. Furthermore, $V_{yi}$ specifies differences in policy priorities between players which indicates, at least in part, differences in ideological preferences. While I acknowledge that ideology plays an important role in the decision of *who* will fill a position, I contend that effectiveness in delivering value for a position captures a core element of the decision to fill a position in the first place.

*Effectiveness.* The value of a position to each player indicates the opportunity to accomplish their prioritized policy goals; however the success of this depends largely on how effective the appointee is in that position. An ineffective appointee mirrors a low capacity position; neither offers valuable advancement of the player's policy agenda. Thus, each player must consider not only the position's value but also the appointee's ability to realize that value. Specifically, *effectiveness* aligns with the established notion of agents' "capacity" to fulfill the duties of their position based on their qualifications (Carpenter), while also accounting for PAS appointees' relations with their subordinate career civil servants.[58]

The degree to which appointees can be effective in advancing the president's agenda largely depends on their interactions with set of careerists who are largely responsible for *implementing* agency policy (Durant and Resh). Presidential appointees – specifically those in PAS positions – represent a modest bloc atop a much larger pyramid of nearly 3 million civil servants spread across over 200 departments and agencies.[59] In some cases, the agencies these appointees seek to manage naturally produce policies consistent with the president's wishes with very little attention from the White House; others need active management.[60]

Here, PAS appointees as "internal" principals must establish trust in their appointee-careerist relations through "sanctioned acceptance" of their agent's legitimacy to facilitate careerist compliance with their ideal policy implementation (Resh; Carpenter and Krause). Thus, an appointee's *effectiveness* in advancing a player's policy agenda requires the capacity to fulfill the position's ascribed duties *and* foster productive relations with careerists.[61] Importantly, the president chooses an appointee with a specific level of effectiveness. Given perfect information, both players perfectly anticipate the effectiveness of any appointee or nominee; however, by selecting the interim appointee or nominee, the president sets the appointee's level of effectiveness, $\beta \in (0, 1]$.

For simplicity, interim appointees and nominees for position $y$ are assumed to be equally effective

---

[58]This, of course, requires that the appointee have careerists to manage, which is not the case for appointees to independent commissions.

[59]For a closer look at the structure of the federal civilian personnel system, *see* Lewis and Selin.

[60]Consequently, presidents may be better served by concentrating on appointing allies to more actively lead agencies whose missions and policy preferences are not aligned with their own (Gailmard and Patty). For such agencies, "incoming presidents have incentives to select appointees who can effectively change agency policy" Lewis, 54 and ensure the agency performs to the president's expectations.

[61]Previous research on the administrative presidency traditionally focused on how presidents achieve policy goals and minimize agency loss through centralization of policymaking or politicization of the bureaucracy (Moe; Lewis), assuming a foundational distrust of career personnel that must be controlled or circumvented (Edwards III). However, more recent work on leadership traits among appointees (Krause and O'Connell), the role of transactional authority in bureaucratic politics (Carpenter and Krause), and bureaucratic competence (Resh) indicate that a partnership between appointees (as principals) and career personnel rooted in trust and managerial competence offers a third mechanism for optimizing careerist compliance in policy implementation.

and therefore have the same $\beta$.[62] If there exists an ideally effective nominee for the position and the president chooses to fill immediately with an interim appointee, it is reasonable to assume that the president would set the reversion point as close to the ideal nominee as possible, in the event that the Senate does not confirm. Identical interim appointees and nominees create a reversion point for Senate confirmation that is the president's ideal appointee. Moreover, this assumption simplifies the expected utility functions by reducing the variables that the president and the Senate must consider in their choices of strategies.[63]

*Filled Position.* Filled positions and empty ones differ, at a minimum, in terms of accountability and responsiveness. Empty PAS positions, fundamentally, do not have a person to fulfill basic responsibilities like reporting to congressional oversight hearings, negotiating new or re-authorizing legislation with Congress, or executing presidential directives.[64] Under more dire circumstances, empty PAS positions do not have a person to prepare for and initiate response protocols in a crisis. Moreover, independent boards and commissions that require a quorum cannot engage in official business when the required number of seats are not filled.[65] Players must differentiate between the time a position is filled and the time it is empty, as each scenario produces disparate prospects for achieving policy priorities.[66] The *filled position* multiplier $\tau_{(f,\neg f)} \in \{\mathbb{Z}^-, \mathbb{Z}^+\}$ captures this

---

[62]Not only does this assumption allow for model tractability, it represents the reality that presidents have often nominated the *same* person that they appointed on an interim basis, thereby ensuring identical effectiveness. While *NLRB v. SW General* (2017) removes this specific strategy as an option for future administrations, it does not restrict presidents from nominating and temporarily appointing equally effective individuals. Howe (2017, 2) describes a very recent example of this type of maneuvering: "Shortly after his inauguration, President Donald Trump named Washington lawyer Noel Francisco as the principal deputy solicitor general... Because Trump had not yet nominated (nor had the Senate confirmed) a solicitor general, Francisco soon began to serve as the acting solicitor general. [Two months later], Trump announced that he was nominating Francisco to serve as the solicitor general on a permanent basis. Francisco then moved to another job in the Department of Justice; Jeffrey Wall – the new principal deputy solicitor general – now serves as the acting solicitor general." Thus, I retain this assumption for its historic accuracy and future relevance.

[63]While this model establishes the possibility, under basic and reasonable assumptions, for strategies that include maintaining empty positions, the core assumption of equally effective appointees contradicts a fundamental tenet of principal-agent research: that distinct agents are not duplicates of their principals or each other. Future iterations will relax this assumption to consider distributions in effectiveness and ideological alignment.

[64]While an empty post necessarily means that no *individual with that specific title* can report to Congress, it does not necessarily mean that *no one* will appear. In some instances, the most senior appointee will testify on behalf of the position. For example, in March 2009, as the Obama administration experienced scores of empty deputy and undersecretary positions at the Treasury Department, Naylor, 2 reports that "Treasury Secretary Timothy Geithner shuttle[d] between appearances before congressional panels to testify about the budget, [oversaw] the rollout of homeowner and bank bailout programs, and join[ed] talks to rescue the auto industry, he [was] pretty much the only Obama appointee with a desk at the Treasury. However, in most circumstances, interactions with Congress or other agencies stall when key posts are left empty. For instance, the Clean Air Act required re-authorization in 1989 and President George H.W. Bush did not "name an assistant administrator at the Environmental Protection Agency to handle the negotiations. A congressional aide said it 'definitely slow[ed] things down'" (Havemann, 4). Nevertheless, a post left unmanned will have at least some portion of its duties undone.

[65]For example, in 2007, the Consumer Product Safety Commission was without a chairman and therefore, as a three-person commission, lacked quorum. President George W. Bush had not submitted a nominee even though "public safety may be at stake, too, because the lack of a quorum means the agency can't pursue its regulatory agenda to lower the level of led in children's jewelry, redesign portable generators and address safety risks of all-terrain vehicles" (Skrzycki, 3).

[66]While this model does not explicitly incorporate the time horizon of a president's term, player's common knowledge of the remaining time for a position to be either filled or empty implicitly incorporates this limit. In other words, players

6

distinction, such that

$$\tau_{(f,\neg f)} = \begin{cases} \tau_k \leq -1, & \text{if } k = \neg f; \\ \tau_k \geq 1, & \text{if } k = f \end{cases}$$

***Permanence and Oversight.*** The president sets the reversion point by either choosing to leave a position empty or filling it immediately and choosing the effectiveness of the interim and nominee. In response, the Senate determines the magnitude of the *permanence and oversight* multiplier, $|\gamma| \geq 1$, with confirmation.[67] Permanent, confirmed appointees magnify the position's value in two circumstances. First, interim appointees are subject to tenure limitations required for compliance with the Federal Vacancies Reform Act, which creates expectations for future attention to the position. Confirmed appointees are not subject to these limits and do not have any anticipated cutoff to their tenure before the end of the president's term. While Senate confirmation does not guarantee that the appointee will serve the entire term, and the well-documented turnover of PAS appointees indicates a sustainable uncertainty about the actual permanence of the appointee (see Chang, Lewis, and McCarty), this theory concentrates on the decisions to appoint and confirm rather than the decision to keep one's position. In this context, appointees are expected to serve the length of their allotted tenure which makes permanent, confirmed appointees unlikely to require future attention. Thus, confirmation generates confidence in the perpetuity of an appointee and magnifies the realized value of the position. Second, federal courts have generally treated interim appointees the same as confirmed appointees, but some argue that interim appointees have less influence over careerists than confirmed appointees and often fill multiple roles at once which depletes their attention to any one position (O'Connell). While this difference in clout does not stem directly from specific statutes, the implication is that confirmed appointees have potentially larger capacity to achieve the players' policy and political goals.

The magnitude of $\gamma$ indicates the length of tenure for a permanent appointee as determined by the length of the Senate's confirmation process. Accordingly, the Senate establishes this magnitude by limiting the time to confirmation. Greater values of $|\gamma|$ indicate longer tenures that permanent appointees serve, given the time remaining in the president's term.[68] Delays in confirmation reduce the maximum tenure of permanent appointees, thereby lowering $|\gamma|$. The Senate sets $|\gamma|$ at its minimum 1 by not confirming and returning the nomination to the president.

Senate confirmation establishes the *permanence* of an appointee, and a clear *oversight* respon-

---

know at the start of the game how much time remains in the president's term $\mathcal{T}$ such that

$$\mathcal{T} = \sum_{\neg f}^{f} |\tau_k|$$

This generalized form of the model does not specify a unit of time, however, future iterations (including expanding to repeated play) will incorporate a specific unit of time.

[67]Confirmation hearings offer ex ante oversight opportunities to establish expectations for the nominee should she be confirmed as the permanent appointee. They also provide a forum for senators to examine the direction of the agency or department as well as the administration's policies towards the major groups within the department's or agency's jurisdiction. When a president does not submit a nominee, the Senate loses these oversight opportunities.

[68]For simplicity, this theory assumes that both players experience the same horizon of the current president's term.

7

sibility. However, the effect of oversight activities depends on the players' preferences. If the president's policy priorities align with the Senate's, then oversight activities further increase the prospect of achieving those priorities: a positive multiplier. Alternatively, when the president's policy priorities conflict with the Senate's, oversight will naturally restrict the appointee's advancement of the president's agenda and circuitously impede the Senate's priorities: a negative multiplier. In other words, when priorities align $\gamma$ positively amplifies the value of the position ($\gamma > 1$), but when they diverge $\gamma$ decreases the value ($\gamma < -1$). Thus, the alignment of players' policy priorities determines the sign of the permanence and oversight multiplier while the Senate sets the value of $|\gamma| \geq 1$ such that:

$$|\gamma| = \begin{cases} \gamma, & \text{if } V_{yS} = V_{yP}; \\ -\gamma, & \text{if } V_{yS} \neq V_{yP} \end{cases}$$

*The Game*. These features of my formal model are carried out through the following sequence of game play:

1. Nature selects empty position $y_a \in Y$ in agency $a$ with value to player $i$, $V_{yi} \in (-1, 1)$, given the policy capacity level of position $y$, $s_y \sim U[0, 1]$, and agency $a$'s position on player $i$'s policy agenda
2. The president $P$ observes $V_{yi}$ and chooses strategy $p \in \{I\&\neg N, I\&N, \neg I\&N, \neg I\&\neg N\}$.
3. If $p = I\&\neg N$ or $p = \neg I\&\neg N$, the game ends with an interim appointee or empty position.
4. If $p = I\&N$ or $p = \neg I\&N$, the Senate $S$ chooses strategy $s \in \{Confirm, \neg Confirm\}$.

The figure below illustrates this sequence and the payoffs associated with each strategy pairing.

## Equilibrium Results

In this section, *Lemmas 1-3* describe the pure strategy Subgame Perfect Nash Equilibrium (SPNE) results that generate the testable hypotheses presented in *Proposition 1* and *Corollaries 1* and *2*. I assume that the president $P$ resolves indifference in strategy choices with a weak preference for filling the position immediately and subsequently submitting a nominee for confirmation, while the Senate $S$ resolves indifference in favor of confirming the president's nominee.

**Lemma 1** *The Senate S confirms the president P's nominee if*

1. $\{V_{yS} = V_{yP} = 1\}$;
2. $\{V_{yS} = -1, V_{yP} = 1\}$ *and* $p = I\&N$;
3. $\{V_{yS} = -1, V_{yP} = 1\}$, $p = \neg I\&N$, *and* $\gamma < -\frac{1}{\beta}$;
4. $\{V_{yS} = 1, V_{yP} = -1\}$, $p = \neg I\&N$, *and* $\gamma > -\frac{1}{\beta}$; *or*
5. $V_{yS} = 0$.

Lemma 1 describes the Senate $S$'s confirmation set when the president nominates a candidate. This result indicates that the *position value* namely the interaction of the position's policy control capacity (the ability of a minimally effective appointee to authorize and achieve desired policy implementation strategies) and players' policy priorities (expand or contract policy under the agency's jurisdiction), governs the Senate's acceptance of the president's nominee. When given

**Figure A 1. Vacant Positions Model in Extensive Form**
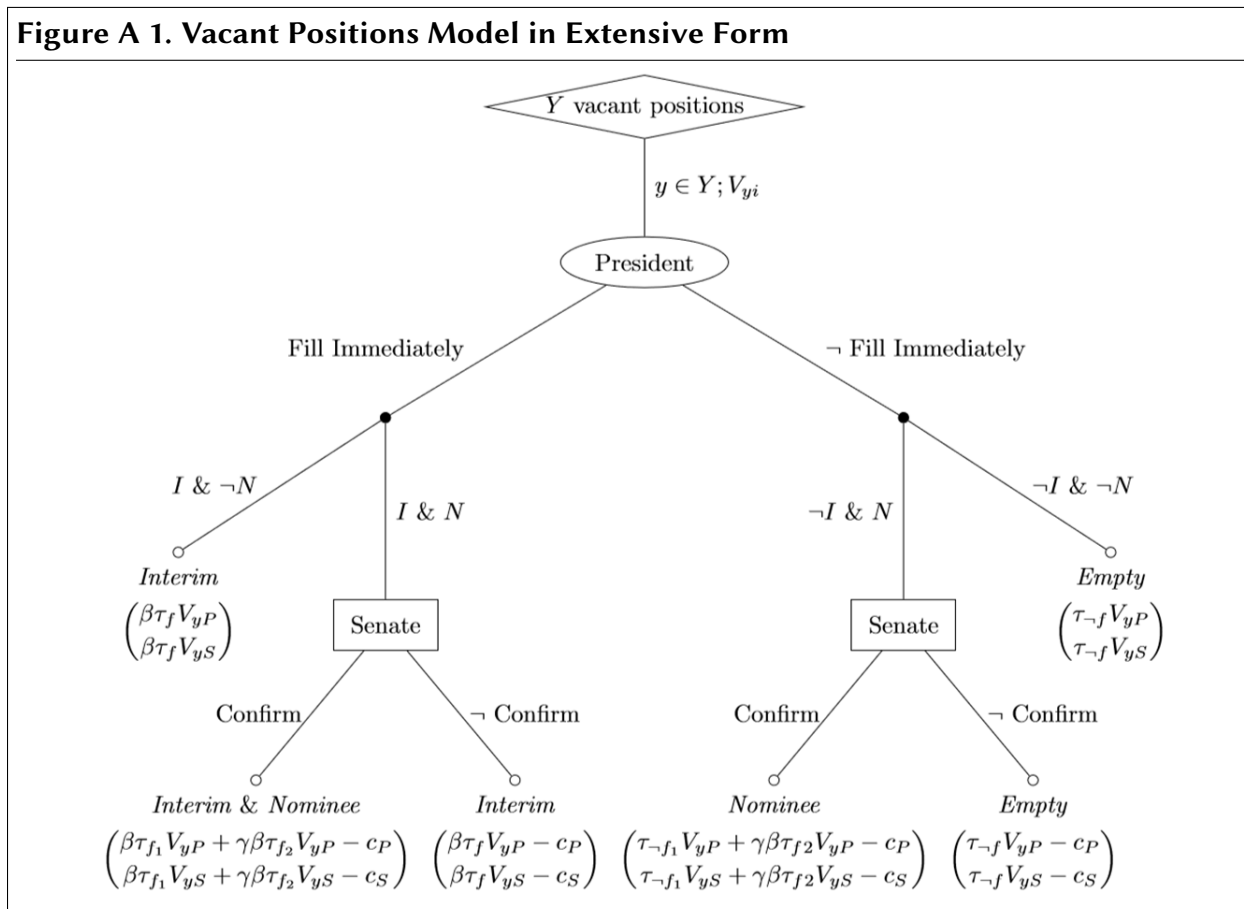


the choice, $S$ confirms the nominee under five sets of circumstances, the first four of which require that position $y$ is a position with high policy control capacity . First, $S$ confirms when the president and Senate both prioritize policy expansion ($V_{yi} = 1$), irrespective of the reversion point. $S$ also confirms a nominee when the president and Senate *do not* agree on policy priorities, albeit under specific conditions. In particular, when the president prioritizes policy expansion ($V_{yP} = 1$) and the Senate prioritizes policy contraction ($V_{yS} = -1$), the Senate confirms if an interim has been appointed ($p = I\&N$). If an interim has not been appointed ($p = \neg I\&N$), then the Senate confirms only when $\gamma < -\frac{1}{\beta}$ which indicates the trade-off between an effective nominee ($\beta$) and the Senate's capacity for permanence and oversight ($\gamma$). Fourth, $S$ confirms when the president prioritizes policy contraction ($V_{yP} = -1$) and the Senate prioritizes policy expansion ($V_{yS} = -1$)) only if the reversion point is an empty position ($p = \neg I\&N$) and $\gamma > -\frac{1}{\beta}$. Lastly, the Senate also confirms the president's nominee when the position delivers no value ($V_{yS} = 0$)[69] because indifference is resolved in favor of confirmation.

More specifically, when the president and Senate both support a policy area (for example, understanding the likelihood of large scale natural disasters due to climate change) and the vacant position is high capacity (i.e. the Director of the U.S. Geological Survey), the Senate will confirm

---

[69] $V_{yS} = 0$ either because it is low capacity or the Senate is policy neutral

the president's nominee. This result supports an expected scenario: when both players prioritize strengthening policy under the jurisdiction of a high capacity position that affords an appointee the discretion to meet those goals, the Senate will always confirm the president's nominee.

Alternatively, if the Senate opposes a policy that the president supports (for instance, government interventions in corporate mergers and acquisitions) and the position has high policy control capacity (i.e. the Assistant Attorney General for the Antitrust Division at the Department of Justice), the Senate will confirm the president's nominee if an interim has been appointed. In this case, the Senate and the president are at odds in their priorities for a position that has the capacity to effect policy change. With an interim appointee from a president who prioritizes policy expansion, the Senate faces an unfavorable reversion point without the benefit of oversight from confirmation. The Senate, under these circumstances, would be better served to acquiesce with the advantage of oversight than to contend with the identical appointee in an interim capacity without the institutional constraints of confirmation. If no interim has been appointed, the Senate will confirm only if the *permanence and oversight* multiplier ($\gamma$) is sufficiently small given a relatively effective nominee or, conversely, if the nominee is relatively ineffective ($\beta \to 0$) and $|\gamma|$ is sufficiently large. Without an interim appointee, the Senate faces an empty post as the reversion point. Given the high capacity position, the Senate intuitively prefers leaving the post empty than confirming an effective nominee ($\beta \to 1$) from a president who seeks to expand policy. However, the Senate has an oversight incentive to confirm if the nominee is ineffective and appointee's tenure ($|\gamma|$) is sufficiently long to allow for oversight activities. On the other hand, the Senate will confirm a relatively effective nominee only if the tenure of that permanent appointee is sufficiently small ($\gamma \to -1$).

These two scenarios might appear at odds, particularly for the same confirmation strategy. However, once we consider the role of permanence and oversight the inconsistency dissipates. When the Senate shares the president's priorities to expand policy ($V_{yS} = V_{yP} = 1$), the permanence of a confirmed appointee magnifies that position value (by $\gamma > 1$) and produces a dominant strategy of Senate confirmation. When the Senate prioritizes policy contraction and the president seeks expansion ($V_{yS} = -1$ and $V_{yP} = 1$), oversight of a formally confirmed appointee, compared to the reversion point of an interim appointee, offers an avenue to limit the president's influence and achieve more of the Senate's agenda thereby amplifying the value of that position. If the Senate prioritizes policy contraction and the president seeks expansion, but the reversion point is an empty position ($p = \neg I \& N$), the Senate will prefer confirmation only if the president submits a sufficiently ineffective nominee, since $\beta \to 0$ mirrors the ineffectiveness of a low policy control capacity position. Higher levels of incapacity further limit the influence of the president, which complements the oversight of a formal confirmation. Otherwise, if the president offers a more effective nominee ($\beta > \frac{1}{|\gamma|}$) the Senate would prefer to return the nominee and revert to an empty position.

Lastly, if the Senate supports policy expansion while the president prioritizes policy contraction and the position is high capacity, the Senate will confirm the president's nominee if an interim is not appointed and the magnitude of the *permanence and oversight* multiplier ($|\gamma|$) is sufficiently small ($\gamma \to -1$) given a relatively effective nominee ($\beta \to 1$).

Lemma 2 presents the complement to the results in Lemma 1 and characterizes the Senate $S$'s rejection set when the president submits a nominee:

**Lemma 2** *The Senate S does not confirm the president P's nominee if*

1. $\{V_{yS} = V_{yP} = -1\}$;
2. $\{V_{yS} = 1, V_{yP} = -1\}$ *and* $p = I\&N$;
3. $\{V_{yS} = 1, V_{yP} = -1\}$, $p = \neg I\&N$, *and* $\gamma < -\frac{1}{\beta}$ ; *or*
4. $\{V_{yS} = -1, V_{yP} = 1\}$, $p = \neg I\&N$, *and* $\gamma > -\frac{1}{\beta}$.

Specifically, Lemma 2 states that the Senate prefers to not confirm the nominee when the position is high capacity and its priorities to contract policy align with the president's $\{V_{yS} = V_{yP} = -1\}$. The Senate also has a dominant strategy to not confirm for a high capacity position if policy priorities conflict such that the president prioritizes policy contraction while the Senate seeks expansion and there is an interim appointee. As described above, the Senate will also return the nominee when the president seeks expansion counter to the Senate's priority for contraction ($\{V_{yS} = -1, V_{yP} = 1\}$), the reversion point is an empty post, and the president offers a relatively effective nominee ($\beta > \frac{1}{|\gamma|}$).

The first of these results, that is when $V_{yS} = V_{yP} = -1$, appears the most surprising, particularly as one might imagine that aligned priorities for contracting policy encourage a confirmed nominee that actively seeks to derail agency activity and performance. However, implicit in the construction of this model is an assumption that an appointee, however (in)effective, will minimally perform the responsibilities ascribed to that position. Ultimately, the ability of an appointee to impact the agency's performance is constrained by the cost (oversight, budgetary, or electoral/political) of appointees actively and/or visibly damaging agency performance. Government watchdog groups, vested interests, client advocacy groups, and potential electoral opponents have multiple methods of drawing attention to explicit bureaucratic drift. An appointee's actions are at least marginally undesirable compared to an empty position for players who prioritize contracting policy. Thus, the Senate's optimal strategy to narrow an agency's policy reach is to return a nominee if one is submitted.

Alternatively, the strategy choice to return a nominee if the president prioritizes policy contraction while the Senate seeks expansion results, in large part, from the oversight cost associated with disparate policy priorities ($\gamma < -1$). Conceptually, oversight that obstructs or delays agency actions – as occurs when the Senate prefers policy contraction over expansion – requires less political capital and intervention than oversight that demands action. The capacity to achieve the Senate's expansion priorities diminish with larger values of $|\gamma|$ where $\gamma < -1$, which decreases the expected utility received with confirmation and makes returning the nomination the preferred choice.

**Lemma 3** *The president P plays the following strategy choice after observing $V_{yi}$ for $i \in \{S, P\}$:*

$$
p = \begin{cases}
I\&N, & \text{if } V_{yS} = V_{yP} = 1 \text{ and } c_P \leq (\gamma - 1)\beta\tau_{f_2}V_{yP}; \\
I\&\neg N, & \text{if } V_{yS} = V_{yP} = 1 \text{ and } c_P > (\gamma - 1)\beta\tau_{f_2}V_{yP}, \\
& \text{or } V_{yS} = -1 \text{ and } V_{yP} = 1, \\
& \text{or } V_{yP} = 0; \\
\neg I\&\neg N, & \text{if } V_{yS} = V_{yP} = -1, \\
& \text{or } V_{yS} = 1 \text{ and } V_{yP} = -1,
\end{cases}
$$

Lemma 3 presents an important result: $p = \neg I\&N$, while contained in the president $P$'s strategy space, is not contained within the set of optimal strategies. If the president chooses to not fill a position immediately, he will not then submit a nominee for Senate confirmation. This result is driven primarily by the strategic anticipation that the Senate will not confirm a nominee if one was submitted (under the scenario that the president has set an empty position as the reversion point). In other words, anticipating the Senate's pure strategy to return a nominee and end the game with an empty position, the president prefers to avoid the bargaining cost of appointment negotiations, forgo submitting a nominee entirely and arrive at the same result of an empty position. Consequently, the mixed strategy SPNE or relaxing the common knowledge assumption and introducing uncertainty about policy priorities would likely result in $p = \neg I\&N$ included in the president's set of optimal strategies.

Given the SPNE results from Lemmas 1-3, the following propositions describe the testable predictions that obtain in equilibrium.

**Proposition 1** *Vacant position y will stay empty in equilibrium if and only if the position is high-capacity and the president P prioritizes policy contraction ($V_{yP} = -1$).*

Proposition 1 asserts that a vacant position $y$ with position value to the president of $V_{yP} = -1$ will not be filled by either an interim or confirmed appointee when the game ends. A few aspects of Proposition 1 are worth noting. First, as expected, the president's first-mover advantage manifests as dictatorial control over empty posts. Anticipating that the Senate will confirm a nominee for high capacity positions when the president prioritizes contracting policy only if it is policy neutral ($V_{yS} = 0$) and will return nominees if $V_{yS} \neq 0$, the president prefers to avoid the bargaining cost by forgoing a nomination.

Second, and relatedly, the proposition implies that, when an empty position is sustained, a nominee was not submitted for confirmation no matter the policy priority alignment with the Senate. While policy priorities are not explicit indicators of ideology, one can easily posit that a unified government would have considerable overlap in policy priorities. Consequently, Proposition 1 implies that sustained empty positions would occur even in unified government if the president prefers policy contraction.

Finally, the third implication of the proposition is that, when a president chooses to keep a position empty, the vacant position is high-capacity. These positions have the most potential for advancing policy priorities but also have real-world consequences for agency performance and policy outcomes when left empty. This proposition implies that widespread empty posts are not among low-level, heavily administrative PAS positions, but rather among exactly those positions that need to be filled for a functioning agency. The following corollaries describe the conditions of confirmed and interim appointments in equilibrium.

**Corollary 1** *A confirmed appointment to position y will occur in equilibrium if and only if the following occurs*:

1. *The position is high-capacity,*
2. *The Senate S and the president P both prioritize policy expansion ($V_{yS} = V_{yP} = 1$) or the*

*president prioritizes policy expansion ($V_{yP} = 1$) while the Senate is policy neutral ($V_{yS} = 0$), and*

3. *The president's bargaining cost, $c_P$, is less than or equal to the president's cutpoint $c_P^*$ ($c_P \leq c_P^*$) such that $c_P^* = (\gamma - 1)\beta\tau_{f_2}V_{yP}$.*

**Corollary 2** *An interim appointment to position y will occur in equilibrium if and only if the following occurs*:

1. *The position is high capacity, the Senate S and the president P both prioritize policy expansion $V_{yS} = V_{yP} = 1$ or the president prioritizes policy expansion ($V_{yP} = 1$) while the Senate is policy neutral ($V_y = yS = 0$), and the president's bargaining cost is $c_P \leq c_P^*$ (such that $c_P^* = (\gamma - 1)\beta\tau_{f_2}V_{yP}$)), or*
2. *The position is high capacity, the Senate prioritizes policy contraction ($V_{yS} = -1$), and the president prioritizes policy expansion ($V_{yP} = 1$), or*
3. *The position is low capacity or the president is policy neutral such that $V_{yP} = 0$.*

The implications of Corollary 1 and 2 complement those of Proposition 1 in the following two ways. First, Corollary 1 implies that the president seeks to submit a nominee for only high-capacity positions when prioritizing policy expansion, and the Senate, when given the choice to confirm, will do so only when prioritizing expansion or policy neutrality. Importantly, the president's choice to submit a nominee hinges on the cost to bargain with the Senate over confirmation and the cut-point in equilibrium ($c_P^*$) is largely driven by the Senate's value for permanence and oversight $\gamma$. Thus, by setting a high value of $\gamma$ (e.g., speedy confirmation hearings), the Senate increases the likelihood that the president's bargaining costs will fall below the cut-point, thereby ensuring a nominee to confirm. Second, Corollary 2 implies that interim appointees fill high and low-capacity positions, but that the president does not use interim appointees in high capacity positions when prioritizing policy contraction. This implication suggests that as policy agendas are increasingly dominated by expansion priorities, the frequency of vacant positions filled with interim appointees will also increase.

## PROOFS

**Proof for Lemma 1.** First, suppose Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and from an agency with jurisdiction that aligns with both players policy expansion priorities such that position value $V_{yP} = V_{yS} = 1$. If the president chooses to fill the position immediately with an interim appointee and submit a nominee for Senate confirmation,[70] the Senate prefers to confirm the nominee only if the expected utility from confirmation outweighs the expected utility from not confirming:

---

[70]Players know at the start of the game how much time remains in the president's term $\mathcal{T}$ such that

$$\mathcal{T} = \sum_{\neg f}^{f} |\tau_k|$$

13

$$EU_S(C|I\&N) > EU_S(\neg C|I\&N)$$
$$\beta\tau_{f_1}V_{yS} + \gamma\beta\tau_{f_2}V_{yS} - c_S > \beta\tau_f V_{yS} - c_S$$
$$\beta(\tau_{f_1} + \gamma\tau_{f_2})V_{yS} > \beta(\tau_{f_1} + \tau_{f_2})V_{yS}$$
$$\tau_{f_1} + \gamma\tau_{f_2} > \tau_{f_1} + \tau_{f_2}$$
$$\gamma\tau_{f_2} > \tau_{f_2}$$
$$\gamma > 1$$

By definition, if $V_{yP} = V_{yS}$ then $\gamma > 1$; therefore $EU_S(C|I\&N) > EU_S(\neg C|I\&N)$. If, instead, the president chooses to not fill the position immediately but still submits a nominee for Senate confirmation, the Senate prefers to confirm the nominee only if the expected utility from confirmation outweighs the expected utility from not confirming:

$$EU_S(C|\neg I\&N) > EU_S(\neg C|\neg I\&N)$$
$$\tau_{\neg f_1}V_{yS} + \gamma\beta\tau_{f_2}V_{yS} - c_S > \tau_{\neg f}V_{yS} - c_S$$
$$(\tau_{\neg f_1} + \gamma\beta\tau_{f_2})V_{yS} > (\tau_{\neg f_1} - \tau_{f_2})V_{yS}$$
$$\tau_{\neg f_1} + \gamma\beta\tau_{f_2} > \tau_{\neg f_1} - \tau_{f_2}$$
$$\gamma\beta\tau_{f_2} > -\tau_{f_2}$$
$$\gamma\beta > -1$$

By definition, $\beta \in (0, 1]$ and if $V_{yP} = V_{yS}$ then $\gamma > 1$; therefore $\gamma\beta > -1$ and $EU_S(C|\neg I\&N) > EU_S(\neg C|\neg I\&N)$. This proves that if $V_{yP} = V_{yS} = 1$, the Senate has a dominant strategy to confirm whenever the president submits a nominee.

Now consider the Senate's possible strategies when Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and from an agency with jurisdiction that aligns with the president's policy expansion priorities but the Senate prioritizes policy contraction such that position value $V_{yS} = -1$ and $V_{yP} = 1$. If the president chooses to fill the position immediately and submit a nominee for Senate confirmation, the Senate prefers to confirm the nominee only if the expected utility from confirmation outweighs the expected utility from not confirming:

$$EU_S(C|I\&N) > EU_S(\neg C|I\&N)$$
$$\beta\tau_{f_1}V_{yS} + \gamma\beta\tau_{f_2}V_{yS} - c_S > \beta\tau_f V_{yS} - c_S$$
$$\beta(\tau_{f_1} + \gamma\tau_{f_2})V_{yS} > \beta(\tau_{f_1} + \tau_{f_2})V_{yS}$$
$$\tau_{f_1} + \gamma\tau_{f_2} < \tau_{f_1} + \tau_{f_2}$$
$$\gamma\tau_{f_2} < \tau_{f_2}$$
$$\gamma < 1$$

---

The *filled position* multiplier $\tau_{(f,\neg f)} \in \{\mathbb{Z}^-, \mathbb{Z}^+\}$ such that

$$\tau_{(f,\neg f)} = \begin{cases} \tau_k \leq -1, & \text{if } k = \neg f; \\ \tau_k \geq 1, & \text{if } k = f \end{cases}$$

By definition, $\gamma < -1$ if $V_{yP} \neq V_{yS}$; therefore $\gamma < 1$ and $EU_S(C|I\&N) > EU_S(\neg C|I\&N)$. If the president chooses to not fill the position immediately but still submit a nominee for Senate confirmation, the Senate prefers to confirm the nominee only if the expected utility from confirmation outweighs the expected utility from not confirming. Given that $V_{yS} = -1$, the expected utility of confirmation is greater than that of rejection only when $\gamma < -\frac{1}{\beta}$:

$$EU_S(C|\neg I\&N) > EU_S(\neg C|\neg I\&N)$$
$$\tau_{\neg f_1} V_{yS} + \gamma \beta \tau_{f_2} V_{yS} - c_S > \tau_{\neg f} V_{yS} - c_S$$
$$(\tau_{\neg f_1} + \gamma \beta \tau_{f_2}) V_{yS} > (\tau_{\neg f_1} - \tau_{f_2}) V_{yS}$$
$$\tau_{\neg f_1} + \gamma \beta \tau_{f_2} < \tau_{\neg f_1} - \tau_{f_2}$$
$$\gamma \beta \tau_{f_2} < -\tau_{f_2}$$
$$\gamma < -\frac{1}{\beta}$$

Thus, if $V_{yS} = -1$ and $V_{yP} = 1$, the Senate will confirm the president's nominee whenever an interim is also appointed ($p = I\&N$) and, if an interim is not appointed ($p = \neg I\&N$), only when $\gamma < -\frac{1}{\beta}$.

Third, suppose that Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and from an agency with jurisdiction that aligns with the Senate's policy expansion priorities but the president prioritizes policy contraction such that position value $V_{yS} = 1$ and $V_{yP} = -1$. If the president chooses to not fill the position immediately but still submit a nominee for Senate confirmation, the Senate prefers to confirm the nominee only if the expected utility from confirmation outweighs the expected utility from not confirming. Given that $V_{yS} = 1$, the expected utility of confirmation is greater than that of rejection only when $\gamma > -\frac{1}{\beta}$:

$$EU_S(C|\neg I\&N) > EU_S(\neg C|\neg I\&N)$$
$$\tau_{\neg f_1} V_{yS} + \gamma \beta \tau_{f_2} V_{yS} - c_S > \tau_{\neg f} V_{yS} - c_S$$
$$(\tau_{\neg f_1} + \gamma \beta \tau_{f_2}) V_{yS} > (\tau_{\neg f_1} - \tau_{f_2}) V_{yS}$$
$$\tau_{\neg f_1} + \gamma \beta \tau_{f_2} > \tau_{\neg f_1} - \tau_{f_2}$$
$$\gamma \beta \tau_{f_2} > -\tau_{f_2}$$
$$\gamma > -\frac{1}{\beta}$$

Thus, if $V_{yS} = 1$ and $V_{yP} = -1$, the Senate will confirm if an interim is not appointed ($p = \neg I\&N$) only when $\gamma > -\frac{1}{\beta}$.

Lastly, consider the Senate's confirmation strategy if Nature chooses a position $y \in Y$ that is low capacity where $s_y = 0$ or for whose parent agency the Senate has no preference for either expanding or contracting policy (is policy neutral) $w_a i = 0$ such that $V_{yS} = 0$. Assuming that indifference is resolved in favor of confirmation, when $V_{ys} = 0$, the Senate will always confirm the president's nominee. ∎

**Proof for Lemma 2.** First, suppose Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and from an agency with jurisdiction that aligns with both players policy contraction

priorities such that position value $V_{yP} = V_{yS} = -1$. If the president chooses to fill the position immediately with an interim appointee and submit a nominee for Senate confirmation, the Senate will not confirm the nominee only if the expected utility from rejecting the nominee outweighs the expected utility from confirmation:

$$EU_S(C|I\&N) < EU_S(\neg C|I\&N)$$
$$\beta\tau_{f_1}V_{yS} + \gamma\beta\tau_{f_2}V_{yS} - c_S < \beta\tau_f V_{yS} - c_S$$
$$\beta(\tau_{f_1} + \gamma\tau_{f_2})V_{yS} < \beta(\tau_{f_1} + \tau_{f_2})V_{yS}$$
$$\tau_{f_1} + \gamma\tau_{f_2} > \tau_{f_1} + \tau_{f_2}$$
$$\gamma\tau_{f_2} > \tau_{f_2}$$
$$\gamma > 1$$

By definition, if $V_{yP} = V_{yS}$ then $\gamma > 1$, therefore $EU_S(C|I\&N) < EU_S(\neg C|I\&N)$. If, instead, the president chooses to not fill the position immediately but still submits a nominee for Senate confirmation, the Senate prefers to not confirm the nominee only if the expected utility from rejecting the nominee outweighs the expected utility from confirmation:

$$EU_S(C|\neg I\&N) < EU_S(\neg C|\neg I\&N)$$
$$\tau_{\neg f_1}V_{yS} + \gamma\beta\tau_{f_2}V_{yS} - c_S < \tau_{\neg f}V_{yS} - c_S$$
$$(\tau_{\neg f_1} + \gamma\beta\tau_{f_2})V_{yS} < (\tau_{\neg f_1} - \tau_{f_2})V_{yS}$$
$$\tau_{\neg f_1} + \gamma\beta\tau_{f_2} > \tau_{\neg f_1} - \tau_{f_2}$$
$$\gamma\beta\tau_{f_2} > -\tau_{f_2}$$
$$\gamma\beta > -1$$

By definition, $\beta \in (0, 1]$ and if $V_{yP} = V_{yS}$ then $\gamma > 1$; therefore $\gamma\beta > -1$ and $EU_S(C|\neg I\&N) < EU_S(\neg C|\neg I\&N)$. This proves that given $V_{yP} = V_{yS} = -1$, the Senate has a dominant strategy to not confirm whenever the president submits a nominee.

Suppose now that Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and from an agency with jurisdiction that aligns with the Senate's policy expansion priorities but the president prioritizes policy contraction such that position value $V_{yS} = 1$ and $V_{yP} = -1$. If the president chooses to fill the position immediately and submit a nominee for Senate confirmation, the Senate prefers to reject the nominee only if the expected utility from not confirming outweighs the expected utility from confirmation:

$$EU_S(C|I\&N) < EU_S(\neg C|I\&N)$$
$$\beta\tau_{f_1}V_{yS} + \gamma\beta\tau_{f_2}V_{yS} - c_S < \beta\tau_f V_{yS} - c_S$$
$$\beta(\tau_{f_1} + \gamma\tau_{f_2})V_{yS} < \beta(\tau_{f_1} + \tau_{f_2})V_{yS}$$
$$\tau_{f_1} + \gamma\tau_{f_2} < \tau_{f_1} + \tau_{f_2}$$
$$\gamma\tau_{f_2} < \tau_{f_2}$$
$$\gamma < 1$$

By definition, $\gamma < -1$ if $V_{yP} \neq V_{yS}$; therefore $\gamma < 1$ and $EU_S(C|I\&N) < EU_S(\neg C|I\&N)$. If the president chooses to not fill the position immediately but still submits a nominee for Senate confirmation, the Senate prefers to reject the nominee only if the expected utility from rejection outweighs the expected utility from confirmation. Given that $V_{yS} = 1$, the expected utility of returning the nominee is greater than that of confirmation only when $\gamma < -\frac{1}{\beta}$:

$$EU_S(C|\neg I\&N) < EU_S(\neg C|\neg I\&N)$$
$$\tau_{\neg f_1} V_{yS} + \gamma\beta\tau_{f_2} V_{yS} - c_S > \tau_{\neg f} V_{yS} - c_S$$
$$(\tau_{\neg f_1} + \gamma\beta\tau_{f_2}) V_{yS} > (\tau_{\neg f_1} - \tau_{f_2}) V_{yS}$$
$$\tau_{\neg f_1} + \gamma\beta\tau_{f_2} < \tau_{\neg f_1} - \tau_{f_2}$$
$$\gamma\beta\tau_{f_2} < -\tau_{f_2}$$
$$\gamma < -\frac{1}{\beta}$$

Thus, if $V_{yS} = 1$ and $V_{yP} = -1$, the Senate will reject the president's nominee whenever an interim is also appointed ($p = I\&N$) and, if an interim is not appointed ($p = \neg I\&N$), only when $\gamma < -\frac{1}{\beta}$.

Lastly, suppose that Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and from an agency with jurisdiction that aligns with the president's policy expansion priorities but the Senate prioritizes policy contraction such that position value $V_{yS} = -1$ and $V_{yP} = 1$. If the president chooses to not fill the position immediately but still submit a nominee for Senate confirmation, the Senate prefers to not confirm the nominee only if the expected utility from rejection outweighs the expected utility from confirmation. Given that $V_{yS} = -1$, the expected utility of confirmation is greater than that of rejection only when $\gamma > -\frac{1}{\beta}$:

$$EU_S(C|\neg I\&N) < EU_S(\neg C|\neg I\&N)$$
$$\tau_{\neg f_1} V_{yS} + \gamma\beta\tau_{f_2} V_{yS} - c_S < \tau_{\neg f} V_{yS} - c_S$$
$$(\tau_{\neg f_1} + \gamma\beta\tau_{f_2}) V_{yS} < (\tau_{\neg f_1} - \tau_{f_2}) V_{yS}$$
$$\tau_{\neg f_1} + \gamma\beta\tau_{f_2} > \tau_{\neg f_1} - \tau_{f_2}$$
$$\gamma\beta\tau_{f_2} > -\tau_{f_2}$$
$$\gamma > -\frac{1}{\beta}$$

Thus, if $V_{yS} = -1$ and $V_{yP} = 1$, the Senate will reject a nominee (prefer an empty post) if an interim is not appointed ($p = \neg I\&N$) only when $\gamma > -\frac{1}{\beta}$. ∎

**Proof for Lemma 3.** Since I have structured this model as a sequential game, I employ a Subgame Perfect Nash Equilibrium concept. Let us examine the president's pure strategy choice given $V_{yi}$ and the Senate's strategies for confirming and rejecting a nominee.

First, suppose Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and from an agency with jurisdiction that aligns with both players policy expansion priorities such that position value $V_{yP} = V_{yS} = 1$. Anticipating that the Senate plays a dominant strategy of confirming whenever

a nomination is tendered, the president chooses to submit a nominee after filling the position immediately with an interim appointee only if the expected utility from the nominee's confirmation outweighs the expected utility from not having submitted a nominee (with the outcome being an interim appointee). Given that $V_{yP} = V_{yS} = 1$ and $\gamma > 1$, the expected utility of nominating what will be a confirmed appointee is greater than not nominating only when $c_P < (\gamma - 1)\beta\tau_{f_2}V_{yP}$:

$$EU_P(I\&N|C) > EU_P(I\&\neg N|C)$$
$$\beta\tau_{f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P > \beta\tau_f V_{yP}$$
$$\beta\tau_{f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P > \beta\tau_{f_1}V_{yP} + \beta\tau_{f_2})V_{yP}$$
$$\gamma\beta\tau_{f_2}V_{yP} - c_P > \beta\tau_{f_2})V_{yP}$$
$$\gamma\beta\tau_{f_2}V_{yP} - \beta\tau_{f_2})V_{yP} > c_P$$
$$(\gamma - 1)\beta\tau_{f_2}V_{yP} > c_P$$

Thus, if $V_{yP} = V_{yS} = 1$ and given the Senate's dominant strategy to confirm, if the president appoints an interim official immediately he will also submit a nominee for Senate confirmation only when $c_P < (\gamma - 1)\beta\tau_{f_2}V_{yP}$.

Alternatively, the president chooses to submit a nominee after not filling the position immediately only if the expected utility from the nominee's confirmation outweighs the expected utility of not submitting a nominee and maintaining the empty post. Given that $V_{yP} = V_{yS} = 1$ and $\gamma > 1$, the expected utility of nominating what will be a confirmed appointee is greater than not nominating only when $c_P < (\gamma\beta + 1)\tau_{f_2}V_{yP}$:

$$EU_P(\neg I\&N|C) > EU_P(\neg I\&\neg N|C)$$
$$\tau_{\neg f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P > \tau_{\neg f}V_{yP}$$
$$\tau_{\neg f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P > (\tau_{\neg f_1} - \tau_{f_2})V_{yP}$$
$$\tau_{\neg f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P > \tau_{\neg f_1}V_{yP} - \tau_{f_2}V_{yP}$$
$$\gamma\beta\tau_{f_2}V_{yP} + \tau_{f_2}V_{yP} > c_P$$
$$(\gamma\beta + 1)\tau_{f_2}V_{yP} > c_P$$

Thus, if $V_{yP} = V_{yS} = 1$ and given the Senate's dominant strategy to confirm, if the president does not appoint an interim official immediately he will submit a nominee for Senate confirmation only when $c_P < (\gamma\beta + 1)\tau_{f_2}V_{yP}$.

Since $(\gamma - 1)\beta\tau_{f_2}V_{yP} < (\gamma\beta + 1)\tau_{f_2}V_{yP}$, to consider the choice between filling a position immediately or not, with the anticipation of submitting a nominee, assume $c_P < (\gamma - 1)\beta\tau_{f_2}V_{yP}$ as the maximal condition. Given $c_P < (\gamma - 1)\beta\tau_{f_2}V_{yP}$ and that a nominee will be submitted and confirmed, the president chooses to fill the position immediately with an interim only if the expected utility from the confirmed nominee with an interim appointee outweighs the expected utility from

the confirmed nominee without an interim appointee:

$$EU_P(I\&N|C) > EU_P(\neg I\&N|C)$$
$$\beta\tau_{f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P > \tau_{\neg f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P$$
$$(\beta\tau_{f_1} + \gamma\beta\tau_{f_2})V_{yP} > (\tau_{\neg f_1} + \gamma\beta\tau_{f_2})V_{yP}$$
$$\beta\tau_{f_1} + \gamma\beta\tau_{f_2} > \tau_{\neg f_1} + \gamma\beta\tau_{f_2}$$
$$\beta\tau_{f_1} > -\tau_{f_1}$$
$$\beta > -1$$

By definition, $\beta \in (0, 1]$ therefore $\beta > -1$ and $EU_P(I\&N|C) > EU_P(\neg I\&N|C)$. This proves that, given $V_{yP} = V_{yS} = 1$, $c_P < (\gamma - 1)\beta\tau_{f_2}V_{yP}$ and anticipating the Senate's dominant strategy to confirm, the president will prefer to fill the position immediately with an interim appointee and also submit a nominee for Senate confirmation ($p = I\&N$).

Alternatively, if $c_P > (\gamma - 1)\beta\tau_{f_2}V_{yP}$ the president will prefer to not submit a nominee for Senate confirmation. Given $V_{yP} = V_{yS} = 1$ and that a nominee will not be submitted, the president chooses to fill the position immediately with an interim only if the expected utility from the interim appoint outweighs the expect utility from maintaining an empty position (not filling the position immediately):

$$EU_P(I\&\neg N|C) > EU_P(\neg I\&\neg N|C)$$
$$\beta\tau_f V_{yP} > \tau_{\neg f}V_{yP}$$
$$\beta\tau_f > -\tau_f$$
$$\beta > -1$$

By definition, $\beta \in (0, 1]$ therefore $\beta > -1$ and $EU_P(I\&\neg N|C) > EU_P(\neg I\&\neg N|C)$. This proves that, given $V_{yP} = V_{yS} = 1$, $c_P > (\gamma - 1)\beta\tau_{f_2}V_{yP}$, and the anticipation of Senate confirmation, the president will prefer to fill the position immediately with an interim appointee but not submit a nominee for Senate confirmation ($p = I\&\neg N$).

Now suppose Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and from an agency with jurisdiction that aligns with the president's policy expansion priorities but the Senate prioritizes policy contraction such that position value $V_{yS} = -1$ and $V_{yP} = 1$. Anticipating that the Senate confirms a nominee if an interim is appointed, the president chooses to not submit a nominee after filling the position immediately only if its expected utility outweighs that from a nominee's confirmation. Given that $V_{yP} \neq V_{yS}$ and $\gamma < -1$, the expected utility of not nominating what will be

a confirmed appointee after appointing an interim appointee is greater than nominating:

$$EU_P(I\&N|C) < EU_P(I\&\neg N|C)$$
$$\beta\tau_{f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P < \beta\tau_f V_{yP}$$
$$\beta\tau_{f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P < \beta\tau_{f_1}V_{yP} + \beta\tau_{f_2})V_{yP}$$
$$\gamma\beta\tau_{f_2}V_{yP} - c_P < \beta\tau_{f_2})V_{yP}$$
$$\gamma\beta\tau_{f_2}V_{yP} - \beta\tau_{f_2})V_{yP} < c_P$$
$$(\gamma - 1)\beta\tau_{f_2}V_{yP} < c_P$$

By definition, $\gamma < -1$ and $\beta \in (0, 1]$ which establishes that $(\gamma - 1)\beta\tau_{f_2}V_{yP} < 0$ and $c_P > 0$; therefore $EU_P(I\&N|C) < EU_P(I\&\neg N|C)$. Alternatively, anticipating that the Senate confirms a nominee if an interim is not appointed only when $\gamma < -\frac{1}{\beta}$, the president chooses to not submit a nominee after not filling the position immediately (maintaining the empty post) only if its expected utility outweighs that from a nominee's confirmation. Given that $V_{yP} \neq V_{yS}$ and $\gamma < -1$, the expected utility of not nominating what will be a confirmed appointee after not appointing an interim appointee is greater than nominating:

$$EU_P(\neg I\&N|C) < EU_P(\neg I\&\neg N|C)$$
$$\tau_{\neg f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P < \tau_{\neg f}V_{yP}$$
$$\tau_{\neg f_1}V_{yP} + \gamma\beta\tau_{f_2}V_{yP} - c_P < \tau_{\neg f_1}V_{yP} - \tau_{f_2}V_{yP}$$
$$\gamma\beta\tau_{f_2}V_{yP} - c_P < -\tau_{f_2}V_{yP}$$
$$\gamma\beta < -1$$
$$\gamma < -\frac{1}{\beta}$$

By definition, $\gamma < -\frac{1}{\beta}$; therefore $EU_P(\neg I\&N|C) < EU_P(\neg I\&\neg N|C)$. Thus, given $V_{yS} = -1$ and $V_{yP} = 1$ and the Senate's confirmation strategies, the president prefers to not submit a nominee whether he fills the position immediately or not. Given that the president will not submit a nominee, he prefers to fill the position immediately only if the expected utility of having the interim appointee outweighs the expected utility of maintaining the empty position:

$$EU_P(I\&\neg N|C) > EU_P(\neg I\&\neg N|C)$$
$$\beta\tau_f V_{yP} > \tau_{\neg f}V_{yP}$$
$$\beta\tau_f > -\tau_f$$
$$\beta > -1$$

By definition, $\beta \in (0, 1]$ therefore $\beta > -1$ and $EU_P(I\&\neg N|C) > EU_P(\neg I\&\neg N|C)$. This proves that, given $V_{yS} = -1$ and $V_{yP} = 1$ and the anticipation of Senate confirmation, the president will prefer to fill the position immediately with an interim appointee but not submit a nominee for Senate confirmation ($p = I\&\neg N$).

Furthermore, suppose Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and

from an agency with jurisdiction that aligns with both players policy contraction priorities such that position value $V_{yP} = V_{yS} = -1$. Anticipating that the Senate plays a dominant strategy of not confirming whenever a nomination is tendered, the president chooses to not submit a nominee after filling the position immediately with an interim appointee only if its expected utility outweighs that of the nominee's rejection. Given that $V_{yP} = V_{yS} = -1$ and $\gamma > 1$, the expected utility of not submitting a nominee is greater than for submitting what will be a returned nominee:

$$EU_P(I\&\neg N|\neg C) > EU_P(I\&N|\neg C)$$
$$\beta\tau_f V_{yP} > \beta\tau_f V_{yP} - c_P$$
$$c_P > 0$$

By definition, $c_P > 0$ therefore $EU_P(I\&\neg N|\neg C) > EU_P(I\&N|\neg C)$. Again, anticipating the Senate's dominant strategy of not confirming whenever a nomination is tendered, the president chooses to not submit a nominee after not filling the position immediately only if its expected utility outweighs that from the nominee's rejection outweighs. Given that $V_{yP} = V_{yS} = -1$ and $\gamma > 1$, the expected utility of not submitting a nominee is greater than that for nominating what will be a returned nominee:

$$EU_P(\neg I\&\neg N|\neg C) > EU_P(\neg I\&N|\neg C)$$
$$\tau_{\neg f} V_{yP} > \tau_{\neg f} V_{yP} - c_P$$
$$c_P > 0$$

By definition, $c_P > 0$ therefore $EU_P(\neg I\&\neg N|\neg C) > EU_P(\neg I\&N|\neg C)$. Lastly, consider the choice the president must make to fill the position immediately or not, given that he prefers to not submit a nominee in both scenarios. In this case, the president prefers to not fill the position immediately if the expected utility from the empty position outweighs that from the position filled by an interim, given that $V_{yP} = -1$:

$$EU_P(\neg I\&\neg N|\neg C) > EU_P(I\&\neg N|\neg C)$$
$$\tau_{\neg f} V_{yP} > \beta\tau_f V_{yP}$$
$$-\tau_f V_{yP} > \beta\tau_f V_{yP}$$
$$\beta > -1$$

By definition, $\beta \in (0, 1]$ therefore $\beta > -1$ and $EU_P(\neg I\&\neg N|\neg C) > EU_P(I\&\neg N|\neg C)$. This proves that, given $V_{yS} = V_{yP} = -1$ and the anticipation of Senate rejection, the president will prefer to maintain an empty post by filling not the position immediately with an interim appointee and not submit a nominee for Senate confirmation ($p = \neg I\&\neg N$).

Lastly, suppose Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and from an agency with jurisdiction that aligns with the Senate's policy expansion priorities but the president prioritizes policy contraction such that position value $V_{yS} = 1$ and $V_{yP} = -1$. Anticipating that the Senate only confirms a nominee if an interim is not appointed and $\gamma > -\frac{1}{\beta}$, the president chooses to not submit a nominee after not filling the position immediately only if its expected utility outweighs

that from a nominee's confirmation. Given that $V_{yP} \neq V_{yS}$ and $\gamma < -1$, the expected utility of not nominating what will be a confirmed appointee after not appointing an interim appointee is greater than nominating:

$$EU_P(\neg I \& \neg N | C) > EU_P(I \& \neg N | C)$$
$$\tau_{\neg f} V_{yP} > \tau_{\neg f} V_{yP} + \gamma \beta \tau_{f_2} V_{yP} - c_P$$
$$\tau_{\neg f_1} V_{yP} - \tau_{f_2} V_{yP} > \tau_{\neg f} V_{yP} + \gamma \beta \tau_{f_2} V_{yP} - c_P$$
$$-\tau_{f_2} V_{yP} > \gamma \beta \tau_{f_2} V_{yP} - c_P$$
$$c_P > \gamma \beta \tau_{f_2} V_{yP} + \tau_{f_2} V_{yP}$$
$$c_P > \tau_{f_2} V_{yP} (\gamma \beta + 1)$$

Given that $\gamma > -\frac{1}{\beta}$ then $\gamma \beta > -1$ and $V_{yP} = -1$, $\tau_{f_2} V_{yP}(\gamma \beta + 1) < 0$. By definition, $c_P > 0$ so $c_P > \tau_{f_2} V_{yP}(\gamma \beta + 1)$ and therefore $EU_P(\neg I \& \neg N | C) > EU_P(I \& \neg N | C)$.

Alternatively, anticipating that the Senate will not confirm a nominee if an interim has been appointed, the president chooses to not submit a nominee after appointing an interim only if the expected utility of not submitting a nominee outweighs the expected utility of a Senate rejection:

$$EU_P(I \& \neg N | \neg C) > EU_P(I \& N | \neg C)$$
$$\beta \tau_f V_{yP} > \beta \tau_f V_{yP} - c_P$$
$$c_P > 0$$

By definition $c_P > 0$, therefore $EU_P(I \& \neg N | \neg C) > EU_P(I \& N | \neg C)$. Given $V_{yP} = -1$, the president prefers to not fill the position immediately and not submit a nominee (maintain the empty post) if its expected utility outweighs the expected utility of filling the position immediately and not submitting a nominee:

$$EU_P(\neg I \& \neg N | \neg C) > EU_P(I \& \neg N | \neg C)$$
$$\tau_{\neg f} V_{yP} > \beta \tau_f V_{yP}$$
$$-\tau_f < \beta \tau_f$$
$$\beta > -1$$

By definition, $\beta \in (0, 1]$ therefore $\beta > -1$ and $EU_P(\neg I \& \neg N | \neg C) > EU_P(I \& \neg N | \neg C)$. This proves that, given $V_{yS} = 1$ and $V_{yP} = -1$ and the Senate's confirmation strategy, the president will prefer to maintain an empty post by filling not the position immediately and not submitting a nominee for Senate confirmation ($p = \neg I \& \neg N$). ∎

**Proof for Proposition 1.** Suppose Nature chooses a position $y \in Y$ that is high capacity such that $s_y = 1$ and from an agency with jurisdiction that aligns with the president's policy contraction priorities such that position value $V_{yP} = -1$. From Lemma 1 and Lemma 2: If $V_{yS} = 1$ and $\gamma > -\frac{1}{\beta}$, the Senate will confirm when the president submits a nominee without immediately filling the position with an interim appointee; If $V_{yS} = 1$ and $\gamma < -\frac{1}{\beta}$, the Senate will not confirm when the

president submits a nominee without immediately filling the position with an interim appointee; If $V_{yS} = -1$, the Senate has a dominant strategy to not confirm when the president submits a nominee regardless of whether the position has an interim appointee.

Given the Senate's confirmation strategy, from Lemma 3 the president chooses not to fill the position immediately and not to submit a nominee ($p = \neg I \& \neg N$) regardless of $V_{yS}$, leading to the outcome of an empty post. Moreover, from Lemma 2, an empty post arises when, given $V_{yS} = -1$, $V_{yP} = 1$, and $\gamma > -\frac{1}{\beta}$, the Senate does not confirm the president's nominee when the president does not appoint an interim appointee ($p = \neg I \& N$). However, Lemma 3 proves that $p = \neg I \& N$ is not contained within the set of optimal strategies. Thus, the vacant position $y$ will stay empty in equilibrium if and only if the position is high capacity ($s_y = 1$) and the president $P$ prioritizes policy contraction ($V_{yP} = -1$). ∎

## ONLINE APPENDIX B: EMPIRICAL APPENDIX

## Descriptive Analysis

To offer a wider perspective of the data at the heart of this project, Figures B1 and 2 summarize the sets of PAS positions left empty and filled with an interim appointee, respectively, by displaying the minimum, first quartile, median, third quartile, and outlying years. For example, in the Department of Commerce, the median percentage of PAS positions left empty is 8.33 percent, which occurred during Reagan's second term in 1987 and Bush's second term in 2006, and the first and third quantiles are 4.17 percent under Bush in 2003 and 13.64 percent under Reagan in 1984, respectively. Alternatively, in the Department of Education, the median percentage of PAS positions with interim appointees is 15.38 percent, with first and third quantiles of 6.67 percent and 31.25 percent, each under Clinton in 2000, 1996, and 1998, respectively. As Figure B1 illustrates, HUD and Interior have the highest concentrations of empty positions, while Justice and Homeland Security have the lowest.

**Table B 1. Political Characteristics Surrounding PAS Positions, by *Position Status*, 1977-2016**

| *Position Status* (N=11,043) | Obs (N) | Republican President | Divided Government | Co-partisan Senate & President |
|---|---|---|---|---|
| Filled with Permanent Appointee | 8,889 (80.49%) | 4,494 (50.56%) | 6,402 (72.92%) | 5,189 (58.38%) |
| Filled with Interim Appointee | 1,165 (10.55%) | 471 (40.43%) | 835 (71.67%) | 693 (59.48%) |
| Empty Position | 989 (8.96%) | 549 (55.51%) | 662 (66.94%) | 573 (57.94%) |

**Figure B 1.  Department-level Box and Whisker of Empty Positions as Percentage of PAS Positions (1977-2016)**
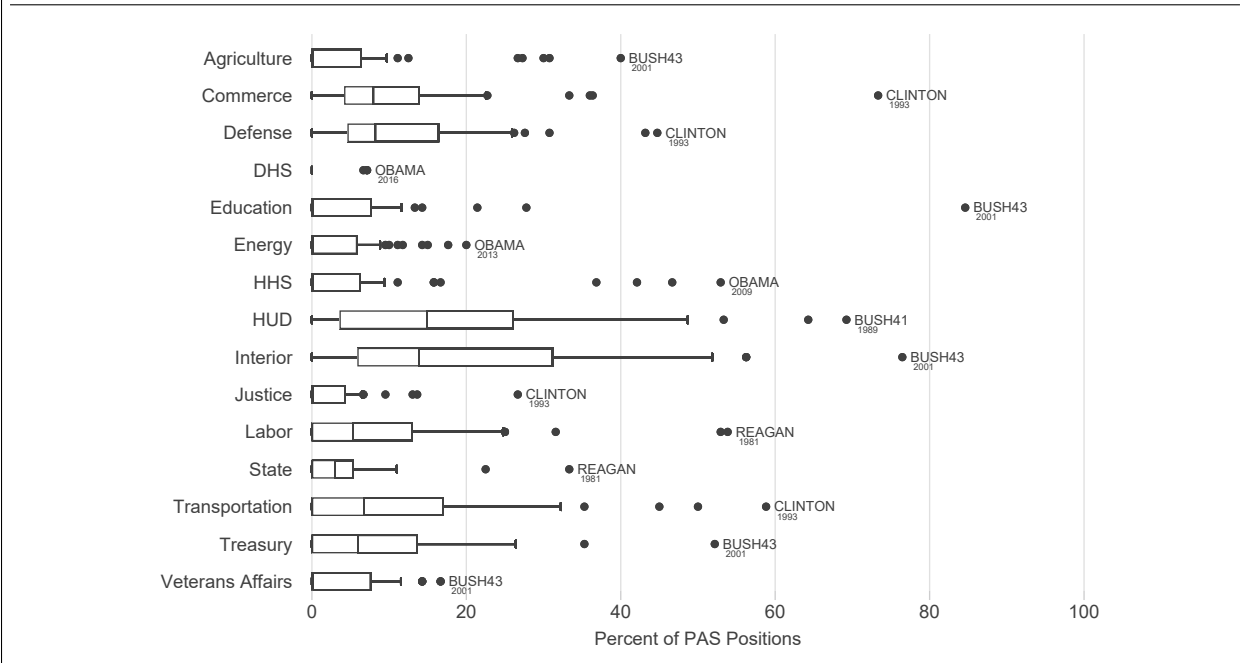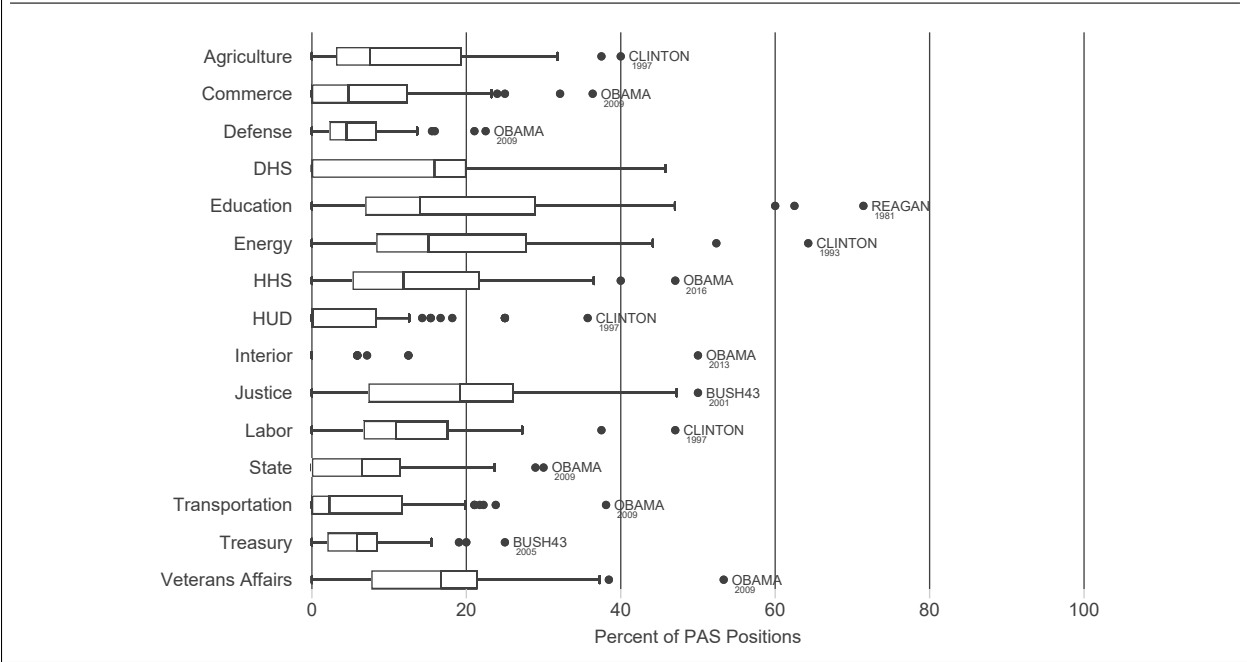


**Figure B 2.  Department-level Box and Whisker of Interim Appointees as Percentage of PAS Positions (1977-2016)**

As Table B1 reports, of the 8,889 positions filled with a permanent appointee and 989 positions left empty, over half of each were during Republican administrations; whereas, just 40 percent of the 1,165 positions filled with an interim appointee had Republican presidents. Our conventional wisdom might lead us to expect a smaller share of empty positions with co-partisan presidents and Senate majorities, since confirmation (and therefore nomination) would, presumably, be less costly. However, Table B1 shows that nearly a third of empty positions occurred during united government (House of Representatives, Senate, and president) and 58 percent saw party-aligned presidents and Senate majorities. In sum, Table B1 shows that *Position Status* varies by partisanship and institutional control, which suggests that there are other considerations beyond these traditional explanations – perhaps, as I posit, differences in the value of the position to the president and the Senate – that influence the decision to fill a position.

## Vacancies in Non-Defense PAS Positions

**Table B 2. Distributions of Permanent Appointees, Empty Positions, and Interim Appointees, excluding the Department of Defense**

| | | Percentage of PAS Positions | | | Percentage of Vacant PAS Positions | |
|---|---|---|---|---|---|---|
| | | Permanent Appointees | Empty Positions | Interim Appointees | Empty Positions | Interim Appointees |
| **President** ***Position*** ***Value*** | High Value (expansion) | 80.4% | 7.4% | 12.3% | 37.5% | 62.5% |
| | High Value (contraction) | 81.0% | 9.54% | 9.46% | 50.2% | 49.8% |
| | Low Value | 78.9% | 9.5% | 11.6% | 45.2% | 54.8% |

Note: For the percentage of overall PAS positions (N=9,414): $\chi^2 = 25.5143$, $p = 0.000$
For the percentage of vacant PAS positions (N=1,864): $\chi^2 = 22.4555$ $p = 0.000$

Critically, the Department of Defense (DOD) houses a considerable proportion of Executive department PAS positions (nearly 15 percent), and, uniquely, decisions about defense policy outputs are fundamentally decisions about defense personnel. This starkly differs with the policy outputs from all the other departments as policies are not centered on departmental personnel. When we examine the distribution of permanent appointees, empty positions, and interim appointees across the PAS positions in non-Defense departments, we find an even starker pattern. As Table B2 displays, 12.3 percent of "High Value (expansion)" non-Defense positions are filled with interim appointees, compared to 7.4 percent left empty; and 9.54 percent of "High Value (contraction)" non-Defense positions were left empty compared to 9.46 percent with interims. In other words, by excluding DOD positions, we see that 63 percent of vacancies in "High Value (expansion)" positions and 55 percent of "Low Value" positions were filled with interim appointees, while 50 percent of "High Value (contraction)" positions were left empty. Moreover, we can statistically differentiate between these percentages at a less than one percent level.

25

# Multinomial Probit Model Results

**Table B 3. Likelihood Models of Presidential Appointment Strategy in Executive Departments, 1977-2016**

| | | Multinominal Probit DV: *Position Status* | |
| --- | --- | --- | --- |
| | | (1) Empty Position | (2) Interim Appointee |
| President *Position Value* | High Value (expansion) | 0.061 (0.14) | -0.191 (0.15) |
| | High Value (contraction) | -0.017 (0.15) | -0.045 (0.15) |
| Congress *Position Value* | High Value (expansion) | -0.116 (0.11) | -0.129 (0.11) |
| | High Value (contraction) | -0.384 (0.18) | -0.341 (0.16) |
| *President X Congress Position Value* | High Value (contraction) X High Value (contraction) | 0.288 (0.24) | 0.102 (0.22) |
| | High Value (contraction) X High Value (expansion) | 0.182 (0.19) | -0.084 (0.20) |
| | High Value (expansion) X High Value (contraction) | 0.180 (0.24) | 0.284 (0.22) |
| | High Value (expansion) X High Value (expansion) | -0.036 (0.18) | 0.268 (0.18) |
| Established Administration | | -1.455 (0.06) | -0.752 (0.06) |
| Co-Partisan Control | | -0.075 (0.07) | 0.023 (0.06) |
| Procedural Regime | Transition Effectiveness Act | -0.067 (0.18) | 0.014 (0.18) |
| | FVRA | -0.062 (0.22) | 0.218 (0.22) |
| Department Fixed Effects | | ✓ | ✓ |
| Administration Fixed Effects | | ✓ | ✓ |
| Intercept | | -0.880 (0.16) | -1.817 (0.16) |

Note: N=11,043 in all models. Table entries are multinomial probit estimates of *Position Status*. The omitted (baseline) category is "Permanent Appointee," its coefficients have been normalized to zero in order to identify the model and allow for comparisons across equations. Reference category for *Position Value* is "Low Value." Robust standard errors appear in parentheses.

**Table B 4. Likelihood Models of Presidential Appointment Strategy in Executive Departments, Pre-FVRA (1977-1997) and Post-FVRA (1998-2016)**

| | | Multinominal Probit DV: *3 Category Position Status* | | | |
|---|---|---|---|---|---|
| | | Pre-FVRA | | Post-FVRA | |
| | | (1) | (2) | (3) | (4) |
| | | Empty Position | Interim Appointee | Empty Position | Interim Appointee |
| President *Position Value* | High Value (expansion) | -0.195 (0.23) | -0.205 (0.29) | 0.065 (0.19) | -0.174 (0.18) |
| | High Value (contraction) | 0.119 (0.18) | -0.273 (0.20) | 0.012 (0.26) | 0.324 (0.26) |
| Congress *Position Value* | High Value (expansion) | -0.249 (0.17) | -0.242 (0.17) | 0.012 (0.16) | -0.011 (0.16) |
| | High Value (contraction) | -0.396 (0.23) | -0.368 (0.22) | -0.368 (0.30) | -0.248 (0.24) |
| President X Congress *Position Value* | High Value (contraction) X High Value (contraction) | 0.229 (0.30) | 0.543 (0.29) | 0.170 (0.40) | -0.532 (0.37) |
| | High Value (contraction) X High Value (expansion) | 0.317 (0.26) | 0.125 (0.29) | -0.074 (0.31) | -0.580 (0.32) |
| | High Value (expansion) X High Value (contraction) | 0.703 (0.35) | 0.856 (0.39) | -0.052 (0.36) | -0.058 (0.30) |
| | High Value (expansion) X High Value (expansion) | 0.399 (0.28) | 0.483 (0.33) | -0.257 (0.23) | 0.072 (0.23 |
| Established Administration | | -1.369 (0.09) | -0.759 (0.09) | -1.462 (0.09) | -0.808 (0.09) |
| Co-Partisan Control | | 0.185 (0.11) | -0.001 (0.10) | -0.177 (0.09) | 0.082 (0.08) |
| Department Fixed Effects | | ✓ | ✓ | ✓ | ✓ |
| Administration Fixed Effects | | ✓ | ✓ | ✓ | ✓ |
| Intercept | | -1.316 (0.21) | -1.807 (0.22) | -0.087 (0.18) | -0.965 (0.17) |

Note: N=5,215 in models (1) and (2); N=5,828 in models (3) and (4). Table entries are multinomial probit estimates of *Position Status*. The omitted (baseline) category is "Permanent Appointee," its coefficients have been normalized to zero in order to identify the model and allow for comparisons across equations. Reference category for *Position Value* is "Low Value." Robust standard errors appear in parentheses.

**Table B 5. Predicted Probabilities of Position Status Outcomes, Pre-FVRA (1977-1997) and Post-FVRA (1998-2016)**

| | | Pre-FVRA | | | Post-FVRA | | |
|---|---|---|---|---|---|---|---|
| | | Permanent Appointee | Interim Appointee | Empty Position | Permanent Appointee | Interim Appointee | Empty Position |
| **President** *Position* *Value* | High Value (expansion) | 0.853 (0.01) | 0.078 (0.008) | 0.069 (0.007) | 0.823 (0.008) | 0.116 (0.007) | 0.061 (0.005) |
| | High Value (contraction) | 0.863 (0.01) | 0.046 (0.007) | 0.091 (0.01) | 0.813 (0.01) | 0.116 (0.01) | 0.071 (0.008) |
| | Low Value | 0.889 (0.01) | 0.056 (0.008) | 0.056 (0.008) | 0.797 (0.02) | 0.136 (0.02) | 0.067 (0.01) |

Note: Table entries are the predicted probabilities of each position status given specified row variables, derived from their corresponding estimated models. Standard errors are in parentheses. Explanatory variables were held constant at their mean values.

## Robustness Tests

The paper's principal MNL model specification, Model (1) reported in Table B6, includes a control for whether the administration is new and in transition, or if it is established; such that *Established Administration* indicates that the administration is no longer in its first year. However, we might consider whether the transitions between administrations have different dynamics at play than the transitions between terms within administrations. The results for Model (2) reported in Table B6, and the predicted probabilities for *Position Status* given president *Position Value* displayed in Figure B3 show that the paper's findings are robust to the specification that includes a control for established term: when administrations are no longer in the first year of a presidential term. Table B 7 reports the fit statistics for the principal model specification (Model (1) and the specification with *Established Term* (Model (2)); the comparison of the information criteria statistics supports the principal model specification.

Additionally, *Position Value* ($V_{iy_{jt}}$) is, fundamentally, the combination of *Policy Priorities* and *Position Capacity*. Kam and Franzese show that the individual terms of an interaction do not have to be included when there is clear theoretical evidence that points toward not including them. My theory offers a clear theoretical expectation that the predictors of the outcome variable are the various combinations of *Policy Priorities* and *Position Capacity* captured in *Position Value*, not the individual terms themselves. The results from the principal MNL estimation are robust to their inclusion, as shown below in the results for Model (3). Table B 7 reports the fit statistics for the principal model specification (Model (1)) and the specification with *Policy Priorities* and *Position Capacity* (Model (3)). While the comparison of the information criteria statistics indicate that the Model (3) offers a slightly better fit, multicollinearity restricts the ability for each of the president and Congress *Position Value* to be included with the interaction of these *Position Value* variables. Given the testable hypotheses require their inclusion, the only slight decrease in both AIC and BIC between the model specifications supports the principal model specification.

**Table B 6. Alternative Specifications of Likelihood Models**

| Mulinomial Probit with DV: *Position Status* | | (1) | | (2) | | (3) | |
|---|---|---|---|---|---|---|---|
| | | Empty | Interim | Empty | Interim | Empty | Interim |
| President *Position Value* | High Value (expansion) | 0.061 (0.14) | -0.191 (0.15) | 0.154 (0.15) | -0.123 (0.15) | | |
| | High Value (contraction) | -0.017 (0.15) | -0.045 (0.15) | -0.021 (0.15) | -0.054 (0.15) | | |
| Congress *Position Value* | High Value (expansion) | -0.116 (0.11) | -0.129 (0.11) | -0.215 (0.11) | -0.194 (0.11) | | |
| | High Value (contraction) | -0.384 (0.18) | -0.341 (0.16) | -0.384 (0.18) | -0.282 (0.16) | | |
| *President X Congress Position Value* | High Value (contraction) X High Value (contraction) | 0.288 (0.24) | 0.102 (0.22) | 0.291 (0.24) | 0.062 (0.23) | -0.626 (0.41) | 0.137 (0.41) |
| | High Value (contraction) X High Value (expansion) | 0.182 (0.19) | -0.084 (0.20) | 0.338 (0.19) | 0.004 (0.20) | -0.615 (0.41) | 0.479 (0.41) |
| | High Value (expansion) X High Value (contraction) | 0.180 (0.24) | 0.285 (0.22) | 0.057 (0.24) | 0.135 (0.23) | -0.587 (0.42) | -0.204 (0.42) |
| | High Value (expansion) X High Value (expansion) | -0.036 (0.18) | 0.268 (0.18) | -0.005 (0.18) | 0.289 (0.18) | -0.687 (0.39) | 0.306 (0.40) |
| *President Policy Priorities* | Expansion | | | | | -0.025 (0.21) | -0.133 (0.19) |
| | Contraction | | | | | 0.043 (0.23) | -0.524 (0.22) |
| *Congress Policy Priorities* | Expansion | | | | | 0.618 (0.27) | 0.431 (0.28) |
| | Contraction | | | | | 0.462 (0.29) | 0.760 (0.29) |
| High Position Capacity | | | | | | 0.540 (0.37) | -0.415 (0.38) |
| Established Administration | | -1.455 (0.06) | -0.752 (0.06) | | | -1.456 (0.06) | -0.769 (0.06) |
| Established Term | | | | -1.198 (0.06) | -0.719 (0.06) | | |
| Co-Partisan Control | | -0.075 (0.07) | 0.023 (0.06) | -0.235 (0.08) | -0.025 (0.08) | -0.083 (0.07) | 0.025 (0.06) |
| Procedural Regime | Transition | -0.068 (0.18) | 0.015 (0.18) | 0.302 (0.20) | 0.151 (0.20) | -0.079 (0.18) | 0.010 (0.18) |
| | Effectiveness Act FVRA | -0.062 (0.23) | 0.218 (0.22) | 1.169 (0.28) | 0.422 (0.26) | -0.085 (0.23) | 0.237 (0.22) |
| Department Fixed Effects | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Administration Fixed Effects | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Intercept | | -0.880 (0.16) | -1.818 (0.16) | -0.868 (0.35) | -1.799 (0.17) | -1.402 (0.34) | -1.999 (0.32) |

Note: N=11,043 in all models. The omitted (baseline) category is "Permanent Appointee," its coefficients have been normalized to zero in order to identify the model and allow for comparisons across equations. Reference category for *Position Value* is "Low Value." Robust standard errors appear in parentheses.

**Table B 7. Fit Statistics Alternative Specifications of Likelihood Models**

| | Model Specification | | |
| --- | --- | --- | --- |
| | (1) | (2) | (3) |
| Log-likelihood | -6238.300 | -6248.0480 | -6223.7050 |
| Count $R^2$ | 0.806 | 0.806 | 0.806 |
| AIC | 12604.6008 | 12640.0961 | 12595.4100 |
| AIC (divided by N) | 1.141 | 1.145 | 1.141 |
| BIC (df=6) | 13072.4122 | 13166.3838 | 13136.3169 |

**Figure B 3. Adjusted Predictions of the Probability of Empty Positions and Interim Appointees, given President's Position Value**