Hardwiring Organizational Continuity and Change in U.S. Federal Executive Agencies:
Incentive Compatibility and the Turnover of Administrative Leaders[*]

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Abstract

  Administrative leader turnover adversely affects the organizational stability of U.S. federal executive agencies, as well as undermines presidents' policy goals. An incentive compatibility theory of administrative leader turnover is proposed that distinguishes between *proponent* (on-agenda) versus *caretaker* (off-agenda) loyalist executive appointees. This theory predicts that the *proponents*' tenure will be comparatively more stable since it reflects incentive compatibility for both the president and executive appointee compared to *caretakers* where such a relationship is lacking. The evidence comports with this logic by revealing that appointee loyalty results in a longer tenure in office when their agency constitutes a stated policy priority for the president at the time of agreed upon service compared to when this happens not to be the case. Responsive competence in executive administration requires incentive compatibility that benefits *both* the president and executive appointees for ensuring leadership stability within U.S. federal agencies.

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A crucial element of executive authority granted by the U.S. Constitution is the concept of '*duration*' advocated by Alexander Hamilton in *Federalist 70, 72, and 77*. '*Duration*' refers to length of tenure in office by executive branch officials, and hence is a measure of the degree of continuity and change involving executive administration. '*Duration*' is necessary for ensuring sufficient time and stability such that government can both prepare and act upon its administrative activities (Green 2002: 549). '*Duration*' not only refers to the length of service of presidents, but also that of appointed executive officials (Caldwell 1964: 90; see also Green 1990: 514). Modern U.S. presidents' value both the continuity and experience necessary to ensure effective, coherent executive administration (e.g., Aberbach and Rockman 1988, 2000; Bertelli and Lewis 2013; Heclo 1977; Resh 2015; Seidman and Gilmour 1986). Turnover within the executive branch naturally transpires within a presidency, yet excessive turnover among administrative leaders signified by short tenures in office generates adverse consequences for executive administration (e.g., Heclo 1977; Seidman and Gilmour 1986).

The rapid turnover of presidential appointed leadership positions not only undermines the president's policy initiatives and implementation, but also executive agencies' performance. Presidents enter office with policy agendas that often require years to both enact and administer for purposes of attaining desired policy outcomes. Churn within these appointed positions generates bureaucratic stasis, which negatively impacts both administrative governance and public policy (Dull, et al. 2012; O'Connell 2009). Further, presidents also incur both greater information search and political costs when filling vacant positions, whether these positions happen to be filled with PAS or acting officials (Kinane 2021; O'Connell 2020). Higher turnover of U.S. federal agency appointees thus can induce organizational instability associated with executive branch governance.

A theory rooted in incentive compatibility is proposed asserting that presidents' choice of which agencies are responsible for administering policy priorities, from those that are not, at the time of appointee selection exert considerable influence on administrative leadership turnover within U.S. federal agencies. Presidents are privy to public information regarding each nominee's background that can assist them in facilitating executive administration that is responsive to their policy interests. Although loyalist political executives enjoy strong incentives to facilitate the president's agenda, these bureaucratic agents also experience costs associated with government service ranging from personal stress to foregoing financially lucrative careers outside of government to greater difficulty operating within the formal structure of government (Gill and Waterman 2004). Since loyalist political executives wish to be placed in a situation where they can facilitate the president's policy agenda (i.e., *proponents*), their appointed service will be longer when the agency is a stated priority at time of nomination. Yet, loyalist political executives placed in "off-agenda" agencies play a nominal role in advancing the president's policy agenda (i.e., *caretakers*). Caretaker administrative leaders experience an incentive incompatibility problem, whereby they are predicted to serve shorter tenures since their loyalty offers much less value-added to not only the executive administration, but also for themselves.

Based on a sample of 860 U.S. federal agency leadership at-will appointments spanning 41 major U.S. federal executive agencies and subagencies covering the Carter through Bush, 43 administrations, the statistical evidence uncovers compelling empirical support for the importance of reconciling the mutual interests of presidents and their loyalist political executives for explaining turnover among U.S. federal executive leadership appointees. These positions constitute major administrative policy positions that are vital for linking presidential objectives to administration action. Greater presidential loyalty displayed by administrative leaders is associated with longer service when an agency is a

presidential policy priority, while such loyalty results in shorter service when the agency is not part of the president's policy agenda.

This study underscores a key tension underlying executive branch governance – presidential efforts to ensure responsive competence and continuity in the leadership of U.S. federal executive agencies require aligning policy incentives among both elected and appointed officials. Otherwise, neither presidents nor loyalist executive appointees have sufficient incentives to ensure stable leadership of U.S. executive agencies. Although both the logic and evidence presented in this study targets a key element of presidential efforts at facilitating executive branch coordination through loyalist executive appointees (e.g., Moe 1985; Nathan 1983), it also underscores the limits of an effective top-down politicization strategy premised solely on presidential authority, void of administrative officials' incentives that affect their propensity to exit from appointed service. Next, the importance of continuity and change among U.S. federal executive appointees is discussed.

On the Importance of U.S. Federal Executive Appointees' Tenure: Continuity and Change in Administrative Leadership Positions

Personnel continuity is of the utmost importance to the president, and ultimately for coherent executive branch governance, especially for those individuals serving in administrative leadership positions within government agencies. Appointing loyalists is requisite for ensuring presidents' policy goals are to be faithfully executed by the federal bureaucracy (Gallo and Lewis 2012; Hollibaugh, et al. 2014; Moe 1985; Nathan 1983). Administrative leaders who serve longer in office enhance the probability of policy success while reducing potential of bureaucratic drift that a president may incur when high-level administrative officials must be routinely replaced (Bertelli and Lewis 2013). It is beneficial for individuals serving in administrative leadership positions to serve for a substantial

amount of time in their appointed leadership positions within U.S. federal agencies so that they can cultivate trust with careerist civil servants (Aberbach and Rockman 2000; Heclo 1977; Resh 2015). Administrative leadership continuity also mitigates turnover problems resulting in agency inactivity, loss of agency expertise, and disruption to implementing either new or nascent policies (Bertelli and Lewis 2013; Dull, et al. 2012; O'Connell 2009). Presidential appointment choices shape both stability and change in executive governance.

The duration of executive appointee service has broad consequences for public agencies. In 2005, Hurricane Katrina made land fall in the Gulf Coast region of the United States, causing vast destruction to both life and property. What followed was one of the largest failures in government response in U.S. history. At the time of the disaster, it is estimated that 15 to 20 percent of the positions in the Federal Emergency Management Agency (FEMA) were vacant (Bertelli and Lewis 2013). Without stable leadership in the upper-level positions, an agency is poorly equipped to handle the routine policy and management tasks required of all federal agencies. The 2006 bipartisan congressional report, *Failure of Initiative*, noted that the confusion within FEMA, and among its leadership, was exacerbated by such problems relating to 'inexperienced' political appointees (*U.S. House of Representatives* 2006: 298). Although the failures associated with an inadequate emergency response was numerous, clearly much of FEMA's failures can be traced to inexperienced leadership resulting from high levels of personnel turnover.

Considerable variation occurs in the tenure distribution of U.S. federal executive leadership appointees analyzed in this study. For instance, the Department of Education has a median leadership appointee tenure of 718 days, with Assistant Secretary Albert Bowker [Carter appointee] serving a low of 206 days and Secretary Richard Riley [Clinton appointee] serving a high of 2,920 days. Conversely, the Office of the U.S. Trade Representative has a median tenure of 1,352 days, with Rob Portman (George W. Bush

appointee, U.S. Trade Representative) holding the position for 403 days and U.S. Trade Representative Mickey Kantor (Clinton appointee, U.S. Trade Representative) 2,627 days. As it pertains to individual appointees, Leslie Kramerich (Clinton Appointee, Assistant Secretary of Labor) served for 20 days, while Ernest Ambler (Carter appointee, the Director of the National Institute of Standards and Technology, Commerce Department) held the position for 4,074 days. Over the entire sample, the median appointee tenure was 907 days [mean of 988 days] and a standard deviation of 588 days.

The few systematic empirical studies analyzing U.S. federal executive appointee turnover offer invaluable insight into how political and agency conditions shape appointee tenure service (Dull, et al. 2012; Wood and Marchbanks 2008). Nonetheless, these studies infer variability in administrative agent characteristics across presidential administrations (Wood and Marchbanks 2008: 386), or by the type of agency or position of service in question (Dull, et al. 2012: 903). Yet, the loyalty of presidential appointees is treated as *unobservable* to presidents when evaluating appointee choices, and hence, do not consider its consequences for tenure longevity. For instance, Wood and Marchbanks (2008: 380) note that "*The problem is that the president can never know the appointee's true values and preferences. Therefore, the president's choice requires an element of trust on the appointee's reason for serving. Under such conditions, errors in staffing may occur due to asymmetric information. Moreover, some appointees may engage in deception and misrepresent themselves. Thus, there will always be a proportion of presidential appointees who fail to effectively represent the president and/or exit the administration early. However, due diligence in initial selection decisions can reduce the severity of the adverse selection problem.*" Yet, recent research shows that both the type and caliber of political appointees is explicitly evaluated by presidents (Krause and O'Connell 2016, 2019; Lewis and Waterman 2013; Ouyang, Haglund, and Waterman 2017; Ouyang and Waterman 2020).

The present study focuses squarely on appointed administrative leaders that provide both critical direction to federal agencies, and hence, serve as the fulcrum between presidents and the bureaucracy largely responsible for U.S. executive branch policymaking. Prior studies of appointee turnover mostly comprise of positions with extremely limited policy influence, such as appointed officials in non-policymaking positions within federal agencies (e.g., Chief Financial Officer or General Counsel), or those whose position does not rise to a level of policy direction and leadership necessitating Senate confirmation. Next, an incentive compatibility logic is proposed to explain turnover among executive leadership appointees in U.S. federal agencies.

Understanding How U.S. Presidential Appointments Shape Both Continuity and Change in Executive Administration

American presidents view their appointment powers as an instrument to facilitate executive administration consistent with their policy objectives. Presidential appointment choices therefore have tangible consequences for executive administration (e.g., Aberbach and Rockman 2000; Lewis 2008; Lewis and Waterman 2013; Waterman, Haglund, and Ouyang 2017). Appointee characteristics are shown to have direct implications for administrative performance. A study of Obama era appointees finds that presidents seek to place non-policy oriented, patronage-type appointees in ideologically-aligned agencies to limit their adverse impact on administrative performance (Hollibaugh, Horton, and Lewis 2014). Because loyalist appointees earn lower performance ratings than counterparts exhibiting less loyalty to the president (Gallo and Lewis 2012), presidents must make tradeoffs between administrative responsiveness and effective performance when choosing PAS executive nominees (e.g., Hollibaugh 2015; Krause and O'Connell 2016, 2019).

Because these appointee characteristics are *known* at the time of nomination decisions, presidents can shape both continuity and change in U.S. federal agencies through

appointment choices. This is an important element of a president's executive branch governance strategy that has yet been fully understood or appreciated. In a sample of 860 administrative leadership positions (i.e., upper-echelon political executives) from the 41 major U.S. federal executive agencies from the Carter through G.W. Bush presidencies analyzed in this study, roughly 38% of these leadership appointees serve two years or less, while nearly 62% serve three years or less, and 84% serve four years or less.[1] Yet, appointee tenure is not solely determined by presidents. The length of an administrative leadership appointee's service to the president will also depend upon both incentives and opportunities for remaining in office. The confluence between the type of appointees' chosen by presidents and the context in which these individuals serve an administration is critical for determining leadership stability within U.S. federal executive agencies.

A president's ability to achieve desired policy goals crucially depends upon coherent executive administration, but also the requisite stability in terms of both direction and effort. Presidents must partner with leadership appointees in a manner such that both actors are in a mutually beneficial organizational arrangement for purposes of generating continuity in administrative leadership. Otherwise, both actors have a propensity for change in the form of higher turnover. The logic below outlines how the incentives for *both* the president and loyalist executive appointees are critical for predicting administrative turnover within U.S. federal executive agencies. Alternative theoretical mechanisms are explicitly considered that may account for administrative turnover that is distinct from the

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[1] Even accounting for the end of presidential period problem, the brevity of service remains high when excluding appointees who began service during the last two years of each presidential term (comprising almost 24% of leadership appointee serve 2 years or less, almost 53% for three years of service or less, and 82% for four years of service or less).

incentive compatibility logic proposed in this study. These empirical findings corresponding to these alternative mechanisms are summarized later in the manuscript, as well as discussed in fuller detail in the *Supplementary Appendix* [see **Appendices B, C, & D**].

Proponent **versus** *Caretaker* **Loyalists: On Leadership Stability in Public Agencies**

Appointee loyalty to the president is premised on both the ideological consistency and non-policy fealty exhibited by the appointed leader to the president (Krause and O'Connell 2016, 2019). That is, appointee loyalty to the president reflects the extent that they are congruent on policy with their appointing president, as well as exhibit an organizational loyalty to the administration by their willingness to serve as a 'team player'. With respect to appointee loyalty, presidents prefer those whom they believe will better reflect responsive competence in executive administration, ceteris paribus. Responsive competence refers to the necessity of modern presidents', utilizing senior administrative appointments, to consolidate authority and coordinate executive action consistent with presidential policy objectives (Moe 1985; Nathan 1983). This is an especially critical issue for obtaining coherent executive administration. Less loyal administrative leaders are more prone to side with careerist agency personnel on administrative policymaking matters than presidents (Heclo 1977; Seidman and Gilmour1986), thus undermining the latter's efforts at attaining their policy objectives. Administrative leaders can engage in bureaucratic delay, and thus undermine the long-run effects of these policies from the president's vantage point. For example, EPA head Christine Todd Whitman's effectiveness at delaying presidential-advocated reforms of the New Source Review (NSR) process used for evaluating new environmental rules undermined the George W. Bush administration's policy efforts at relaxing air pollution emission standards (Krause and Dupay 2009).

Yet, appointing more loyal administrative leaders is not a guarantor of greater leadership stability in executive agencies. This is because an appointee's tenure is not only determined by the president, but also of their own accord. Given president's desire for sufficient coherence and stability required to enact their programmatic goals, the constant churn among U.S. federal executive agency leadership positions is not desirable from the president's perspective (e.g., Aberbach and Rockman 1988, 2000; Bertelli and Lewis 2013; Heclo 1977; Resh 2015; Seidman and Gilmour 1986). That is, the willingness of executive appointed leaders to remain in office is *mutual decision* by both these individuals and the president. These individuals have established career backgrounds that that afford them with a nontrivial degree of control over how long they are willing to serve a president for a given administrative position. This is because they are typically in either a financial or career position where their credentials ensure that they have attractive employment opportunities external to the U.S. federal executive branch.[2]

Presidents want loyalist executive appointees whom they can rely upon to facilitate their policy objectives through administrative channels, while loyalist executive appointees wish to assist the president in carrying out their policy goals. Whether loyalist executive appointees represent a proponent or caretaker crucially depends upon whether the agency that the president assigns them to a leadership position at the time of nomination is either 'on' or 'off' the president's policy agenda. Individuals serving in presidential policy priority agencies represent 'proponents' who play a vital role in advancing the administration's

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[2] Recent studies of U.S. federal government career executives, individuals with greater external employment needs coupled with lesser employment opportunities compared to PAS executive appointed agency leaders, demonstrate that their exit decisions are strategically motivated in part by labor market conditions (e.g., Doherty, Lewis, and Limbocker 2019 Richardson 2019).

policy goals. For instance, Secretary of Education Richard W. Riley, who served 2,920 days

was a 'proponent' loyalist executive appointee (74th percentile of *Presidential Loyalty* among

this sample of executive appointees) with respect to educational reforms and initiatives that

he spearheaded on behalf of the Clinton administration as a stated policy priority at time of

his nomination (*U.S. Department of Education*). Conversely, an appointee exhibiting robust

loyalty to the president, albeit serving in an agency that is off the president's policy agenda,

is essentially a caretaker insofar that are of marginal value in achieving administration

policy goals in their appointed position. An example of a caretaker loyalist is U.S. Trade

Representative Robert J. Portman (98th percentile of *Presidential Loyalty* among this

sample of executive appointees) who served only 403 days before being appointed to a

relatively more prestigious position as Director of the Office of Management and Budget

(OMB) within the George W. Bush administration.[3]

Incentive compatibility between presidents and unelected executive branch officials

confer benefits to each actor (e.g., Gailmard and Patty 2013, see Dixit 2002 for a more

general summary discussion as it relates to public sector/governmental applications).

Presidents strategically desire greater administrative leadership stability for policy priority

agencies that require a proponent whom they depend upon to facilitate their policy

priorities compared to off-agenda agencies led by caretakers. Similarly, proponent

appointees enjoy greater benefits accrued from service in the form of advancing a

president's policy goals compared to caretaker appointees whose agency does not constitute

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[3] It is extremely rare for any administrative leader serving in an off-agenda executive agency to be

moved into a (different) priority executive agency by the same president (nine cases out of 860

[1.05%]), as well as these executive appointees to move from a priority agency to a (different) off-

agenda agency (seven cases out of 860 cases [0.81%]).

a presidential priority. An incentive compatible arrangement that mutually benefits both the president and appointed leader is necessary to ensure greater administrative continuity that is often required to ensure that the presidents' policy goals can be faithfully executed.

The importance of incentive compatibility between presidents and their appointed administrative leaders is reflected in their respective interests and talents. These data can be broken down by analyzing the mean differences in appointee characteristics known at time of nomination between 'higher' loyalist appointees assigned to a position within an agency that is an administration policy priority at time of nomination [n = 223 leadership appointees] compared to those whose nomination does not represent such a priority at time of nomination [n = 113 leadership appointees].[4] Strong loyalists serving in off-agenda agencies are not noticeably more loyal than those placed in presidential priority agencies (mean difference: −0.041 standardized units, t = −0.49, p = 0.623). Although strong loyalist executives appointed to presidential priority agencies do not exhibit noticeably stronger management skills reflected by qualifications than counterparts placed in off-agenda agencies (mean difference: 0.136, t = 1.136, p = 0.257), such a policy expertise differential derived from qualifications is observed favoring proponents vis-à-vis caretakers (mean difference: 0.26, t = 2.61, p = 0.009). Therefore, proponent administrative leaders exhibit stronger policy-specific human capital attributes compared to their caretaker counterparts.

Although no systematic presidential loyalty differences favoring executive appointees placed in priority agencies over off-agenda agencies are observed from these data, clearly 'proponent' type loyalists enjoy both a greater capacity and willingness to facilitate the president's policy objectives compared to caretaker loyalist counterparts.

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[4] 'Higher' loyalty is defined here as standardized loyalty scores above zero (61st percentile), which lies between the median value of −0.165 and mean value of 0.128 in this study's sample of observations.

Analogous to Gailmard and Patty's (2013) endogenous theory of executive policy investment, higher skilled loyalists will invest greater service time in their appointed leadership positions when facilitating the president's policy priorities relative to less skilled loyalists who are not afforded the same opportunity to serve the president's policy interests. In short, presidents and administrative leaders both desire continuity of the latter's service – but only when it serves each parties' mutual interests. Otherwise, the president and administrative leader each have an incentive to 'defect'. Hence, the connection between appointee loyalty and tenure in office will enhance leadership stability in the presence of incentive compatibility between a president and loyalist executive appointees. This incentive computability logic yields the following testable prediction for explaining administrative leader turnover within U.S. federal executive agencies:

> **Incentive Compatibility Hypothesis:** *Appointed leaders' loyalty to the president is associated with **relatively longer tenure** when their service is predicated on administering a presidential policy priority compared to 'off-agenda' items.*
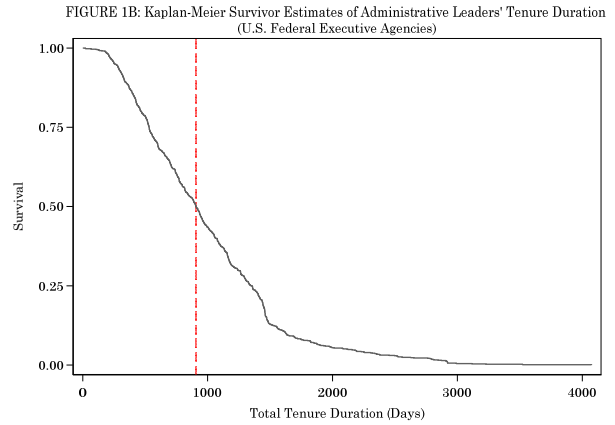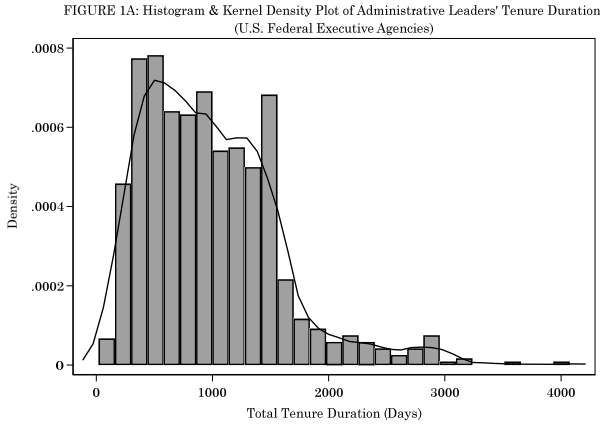
This hypothesis infers that organizational continuity and change involving executive is conditioned by the presidents' premium for responsive competence for those agencies central to their policy agenda, as well as loyalist appointee's desire for facilitating such policy investments on behalf of presidents.

Data and Empirical Strategy

The empirical analysis focuses on 860 U.S. federal executive branch agency leadership appointees covering a sample of 41 organizational units comprised of presidential units, executive departments, executive bureaus and offices, and independent

executive agencies that cover a 32 year period (1977-2008) across five presidential administrations (Jimmy Carter through George W. Bush). These data cover the sample of U.S. federal agencies and appointed leadership positions that contain latent trait measures of presidential loyalty, managerial skills, and policy expertise (see Krause and O'Connell 2016, 2019). The focus on leadership PAS positions is simply due to these individuals being largely responsible for both setting and directing policies administered by U.S. federal agencies. Turnover among both mid and lower level appointees is less consequential for the broader operations of federal agencies. The sample is restricted to executive agencies since they serve 'at-will' of the appointing president, and hence, account for challenges attributable to confounding with respect to administrative leader tenure duration due to alternative constraints on appointment (e.g., partisan balancing requirements), terms of appointment (e.g., staggered terms), and other unobserved characteristics relating to tenure (e.g., term renewals) that undermine comparisons with non-executive agencies.

The dependent variable is *Appointee Leader Tenure Duration* and has a median/mean of 907 / 988 days (2.485 / 2.707 years), a standard deviation of 588 days (1.611 years), with a minimum of 20 days and a maximum of 4,074 days (11.162 years). **Figures 1A** and **1B** display the histogram plot (with kernel density overlay) and univariate Kaplan-Meier nonparametric survival function. **Figure 1A** reveals some positive skewness in the distribution of administrative leadership tenure (skewness = 1.20), with service exceeding 1400 days (3.836 years) becoming less common compared to those individuals serving a shorter duration. Similarly, **Figure 1B** shows a corresponding sharp tapering off of the survival estimates among this sample of U.S. federal executive agency leadership appointees beyond the 1,460 day (four year) service mark (with the vertical red line

13

FIGURE 1A: Histogram & Kernel Density Plot of Administrative Leaders' Tenure Duration (U.S. Federal Executive Agencies)

FIGURE 1B: Kaplan-Meier Survivor Estimates of Administrative Leaders' Tenure Duration (U.S. Federal Executive Agencies)

representing the unconditional median days of service [907 days]). Much of this distinction occurs for those individuals who serve across terms of a given presidential administration.[5]

Evaluating Incentive Compatibility Between Presidents and Agency Leaders

The first key covariate of interest, *Presidential Loyalty*, is operationalized as the perceived loyalty that an appointee has towards the appointing president at the time of nomination. An appointee's loyalty consists of an indicator that reflects a *shared political orientation* between the president and the appointee (i.e., nominee is a co-partisan of the president and made a campaign donation prior to their nomination). This latent trait measure also employs a set of binary indicators to account for *fealty*, or *non-policy responsiveness*, that appointees may have towards the president (i.e., whether the nominee previously served in an appointed position by an administration of the same party, the nominee had prominent experience with national or state party organizations of the president's party, previous electoral experience, and whether the nominee served in the

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[5] The respective means and variances are significantly larger and more dispersed among these long-term service individuals compared to those serving 1400 days or less:

$(\overline{x}_{T>1400} = 1,811 \ days, \overline{x}_{T \leq 1400} = 749 \ days, p = 0.000; \ sd_{T>1400} = 506 \ days, sd_{T \leq 1400} = 342 \ days, p = 0.000)$.

executive branch of a state during the time when the president previously served as governor). This measure is estimated from a Bayesian generalized latent trait structural measurement model (Krause and O'Connell 2016, 2019: 532-533).

The second key covariate is *Policy Priority Agency* which is simply a binary indicator whether a policy issue is mentioned by a president in the State of the Union (SOTU) is directly relevant to the (sub)agency in question for a given appointee in their nomination year. Because SOTU addresses are constitutionally mandated (see, Article II, Section 3, clause 1), they are utilized by presidents to provide direct insight into their administration's policy priorities (Kreiser and Greene 2022).[6] SOTU addresses constitute president's formal policy agenda containing information on presidential policy priorities reflected in their budgetary and legislative programs (e.g., Byers, Carson, and Williamson 2019; Baumgartner and Jones 2009; Cohen 1995; Eshbaugh-Soha 2005, 2017). Support for the incentive compatibility hypothesis is observed when the interaction between *Presidential Loyalty × Policy Priority Agency* exhibits a smaller hazard rate (i.e., negative coefficient/ hazard ratio < 1.0) relative to the relationship between loyalty and tenure when an agency is not a policy priority in the year a nomination (*Presidential Loyalty*).

Control Covariates

Other appointee characteristics may also affect executive appointees' tenure longevity. *Managerial Competence* refers to the relevant public sector managerial skills of the appointee. This is a latent measure constructed from information regarding whether the appointee recently lived in the DC area (i.e., 'social embeddedness' with those both living and working in the U.S. federal bureaucracy), had substantial federal government management related professional experience (defined as being at the assistant secretary or

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[6] Kreiser and Greene (2022) https://sgp.fas.org/crs/misc/R44770.pdf.

equivalent level outside the federal government), possessed any prior federal management experience, or whether the nominee had prior agency-specific managerial experience via an appointed PAS or Non-PAS position (Krause and O'Connell 2016, 2019: 533-534). This covariate is predicted to be inversely related to administrative leader stability since these generalist skills are highly portable in other administrative contexts. Conversely, an appointee's policy expertise should be less portable across organizations, and hence, should translate into longer appointed service, ceteris paribus. Policy expertise is measured in terms of skills and qualifications as a latent measure (*Policy Competence*) that gauges the nominee's policy-relevant specific expertise for the agency. This expertise is represented by indicators consisting of the nominee's educational background, whether the appointee had prior professional experience in the policy issue area, whether the appointee had prior policy relevant employment in the federal government, had any prior civil service experience, or whether the appointee had any prior civil service position within the agency that they were appointed (Krause and O'Connell 2016, 2019: 534-535).

A variety of agency specific characteristics are also relevant for potentially shaping administrative leader tenure. *Agency Position Type* indicates whether the position is within the top executive positions (i.e., cabinet secretaries and administrator/director positions within executive bureaus and stand-alone agencies) or a subordinate leadership position (i.e., assistant/deputy/under cabinet secretaries, under cabinet secretaries, and deputy directors/administrators). Additionally, a pair of indicators are included to account for whether tenure durations vary amongst those agencies that are ideologically aligned with the president (*President-Agency Aligned)* or ideologically opposed with the president *(President-Agency Opposed),* by interacting the ordinal classification of the Clinton and Lewis (2008) agency ideology measure with the party of the president, with moderate agencies being captured in the baseline intercept term. Agencies that are ideologically

aligned with the president are posited as having a positive effect on tenure duration. Conversely, an appointee's tenure duration is hypothesized to decrease when the agency and the president are ideologically opposed. Another factor that may impact an administrative leader's tenure length is the agency in which the appointee is confirmed.

A pair of indicator variables are employed to distinguish among independent agencies, subagencies, and executive department positions. *Independent Executive Agency* indicates whether an agency is a 'stand-alone' agency (i.e., Central Intelligence Agency, Environmental Protection Agency, Federal Emergency Management Agency), and *Executive Subagency* corresponds to whether the position is for a subagency of an executive department (i.e., Census, Drug Enforcement Administration, Food and Drug Administration). Tenure duration, for both independent executive agency and subagencies positions, should be shorter than for Executive Cabinet department positions since the latter are more prestigious positions with greater responsibility. In addition, whether a leadership appointee serves multiple presidential terms is accounted for in model specifications using a binary indicator, *Crossover Presidential Terms*, that equals 1 when an appointee serves longer than one presidential term, and 0 otherwise.

In addition, a variety of political covariates are accounted for based on a single-record data design employ the starting day of service. *Senate Party Polarization* corresponds to the absolute difference between the ideological means of the two major political parties within the Senate at the start of service. As the ideological distance between the two parties' increases, creating divergent priorities for the principle [the political parties within the Senate], an appointee has greater latitude within their agency. As Senate party polarization increases, appointees should be more likely to stay in their respective positions for an increased amount of time since they will incur a divided Senate that will afford them greater leeway from this institution. *Filibuster Distance* measures the

absolute distance between the Senate filibuster and the president's ideal points at the start

of service. The distance between the president's ideal point and the Senate filibuster

provides insights into the ideological differences between the administration and the

Senate. As the ideological distance between the two political branches increase, the

legislative branch has an incentive to escalate executive branch oversight activity, limiting

an appointee's ability to pursue the president's [and their own] policy/agency objectives.

Therefore, the ideological distance between the president and the Senate is posited as being

inversely related to an appointee's tenure.

Likewise, the average monthly *Presidential Job Approval* rating at start of service is

hypothesized as being inversely related to an appointee's tenure. As the president's job

approval increases, appointees will not only enjoy the benefits from the administration's

positive public standing in terms of job opportunities outside of government, but also may

result in presidents feeling more comfortable at moving appointees to other positions.

Unemployment Rate is the seasonally-adjusted civilian monthly civilian unemployment rate

at the start of service. This measure is posited as being inversely related to risk of

departure by executive appointees. *Administration Year* is a series of binary indicators that

equal 1 for each administration year in which appointee service commences for Years 2

through 8 of presidential administration (Year 1 is captured in the baseline intercept term).

These measures account for within administration timing of service cycles since an

administrative leader's tenure is finite since it typically ends (with few exceptions) at the

close of a given presidential administration. Finally, model specifications are estimating

that incorporate both agency and presidential administration unit effects to account for

variations in executive appointees' tenure attributable to idiosyncratic aspects of both

agencies and presidents not accounted for by the preceding set of covariates.

Appointed executive leader tenure is modeled using both Cox semiparametric and Weibull parametric models to arrive at statistical estimates. Standard errors are clustered by agency to account for intra-unit correlation among leadership appointees' tenure within a given administrative unit. Allowing for intra-agency dependence among administrative leaders within a given agency is sensible since these individuals' service within a given agency are unlikely to be independent of one another's length and timing of service.

Empirical Findings

Table 1 presents the main regression estimates from the Cox semiparametric model (**Models 1 & 2**) and Weibull parametric model (**Models 3 & 4**), based on omission of both agency and presidential administration unit effects (**Models 1 & 3**), as well as the inclusion of these unit effects (**Model 2 & 4**). The findings relating to the control covariates offer additional insights for explaining variation in administrative leaders' duration of appointed service for a given position. Although neither the policy nor managerial qualifications of these individuals systematically affect their tenure of service based on the null findings for the *Policy Competence* and *Managerial Competence* covariates, clearly individuals serving in top administrative leadership positions (*Agency Position Type*) are anywhere from 39.9% [**Model 3**] to 48.9% [**Model 2**] less likely to depart on a given day compared to those in subordinate level administrative leadership positions.[7] Ideological policy conflict between the president and Congress at the onset of service (*President−Senate Filibuster Pivot Distance at Start*) consistently increases the likelihood that administrative leaders depart their positions due to inter branch tensions, while internal party polarization within the

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[7] The reduction from the baseline hazard (1.0) is computed as (hazard estimate −1)*100.

Senate at the onset of service (*Senate Party Polarization at Start*) increases the likelihood of departure. In tandem, these findings suggest internal divisions within Congress ease pressures on administrative leaders and their respective agencies, while conflict that spills into over the executive branch ramps up political pressure on these executive appointees who often find themselves and their agencies as the object of interbranch policy conflict. Accounting for individuals serving across presidential terms (*Crossover Presidential Terms*) allows for the possibility that this subset of administrative leaders is less likely to depart at any point relative to those whose appointed service for a given position does not span presidential terms. A particular juncture within an administration that executive appointees commence service is expectedly linked to such a risk of departure. Specifically, the hazard of exiting an appointed executive leadership position for these sample of observations is most pronounced for those individuals that begin service during the final two years of each presidential term (*Administration: Years Three, Four, Seven, & Eight*). These set of covariates are important to explicitly consider as potential confounders since they net out the potential rival explanation that evidence of the incentive compatibility hypothesis is merely a byproduct of the temporal constraints imposed on service, as well these appointees' propensity to serve across presidential terms when significant natural turnover occurs primarily within a given administration.

The relationship between appointee loyalty and the tenure of administrative leaders serving in an 'off-agenda' agency (*Presidential Loyalty*) reveals between a 26.5% [**Model 4**] and 30.6% [**Model 3**] higher hazard rate across model specifications. In **Model 3** this translates into the hazard ratio ranging from a 15.82% [HR = 0.8418, p = 0.003: HR = 1.0] lower risk of departure when appointee loyalty is at the 10th percentile value (−0.6452) to a 57.89% [HR = 1.5789, p = 0.003: HR =1.0] higher risk of departure at its 90th percentile value (1.7113) – a total effect size of 73.71%. These findings indicate that low loyalist

TABLE 1

Cox and Weibull Regression Model Hazard Ratio Estimates of
Administrative Leaders' Tenure in U.S. Federal Executive Agencies

Covariates	Model 1 [Cox]	Model 2 [Cox]	Model 3 [Weibull]	Model 4 [Weibull]
Presidential Loyalty	1.290**	1.275*	1.306**	1.265*
	(0.112)	(0.131)	(0.117)	(0.129)
Policy Priority Agency	1.063	1.071	1.087	1.071
	(0.108)	(0.187)	(0.117)	(0.191)
Presidential Loyalty × Policy Priority Agency	0.697***	0.675**	0.690***	0.685**
	(0.073)	(0.090)	(0.073)	(0.089)
Policy Competence	0.987	1.030	0.995	1.036
	(0.065)	(0.076)	(0.066)	(0.075)
Managerial Competence	1.052	1.039	1.054	1.047
	(0.058)	(0.067)	(0.057)	(0.067)
Agency Position Type	0.582***	0.511***	0.601***	0.542***
	(0.043)	(0.051)	(0.045)	(0.052)
President−Agency Ideological Alignment	1.436***	0.749	1.451***	0.854
	(0.127)	(0.177)	(0.130)	(0.190)
President−Agency Ideological Opposed	1.356***	0.716	1.357***	0.805
	(0.123)	(0.173)	(0.123)	(0.183)
Executive Subagency	1.020	1.604**	1.119	1.522**
	(0.162)	(0.269)	(0.163)	(0.245)
Independent Executive Agency	0.881	1.804*	0.871	1.516
	(0.077)	(0.478)	(0.075)	(0.375)
Senate Party Polarization at Start	0.001**	0.000*	0.0004**	0.000*
	(0.001)	(0.000)	(0.001)	(0.000)
President − Senate Filibuster Distance at Start	1.629*	1002.277**	1.780**	784.467**
	(0.327)	(2296.928)	(0.347)	(1755.416)
Presidential Job Approval at Start	0.995	0.989*	0.995	0.990*
	(0.003)	(0.004)	(0.003)	(0.004)
Crossover Presidential Terms	0.196***	0.166***	0.203***	0.177***
	(0.032)	(0.034)	(0.034)	(0.035)
Unemployment Rate at Start	0.934	1.152	0.935	1.144
	(0.041)	(0.100)	(0.040)	(0.099)
Administration: Year Two	1.652*	1.384	1.618*	1.417
	(0.322)	(0.302)	(0.323)	(0.302)
Administration: Year Three	4.776***	3.374***	5.265***	3.786***
	(0.614)	(0.723)	(0.660)	(0.765)
Administration: Year Four	3.780***	2.982***	4.271***	3.371***
	(1.220)	(0.983)	(1.295)	(1.043)
Administration: Year Five	1.231	1.506	1.206	1.405
	(0.153)	(0.367)	(0.156)	(0.341)
Administration: Year Six	2.539***	3.378***	2.468***	3.163***
	(0.308)	(0.800)	(0.266)	(0.747)
Administration: Year Seven	4.425***	4.765***	4.980***	5.383***
	(1.209)	(1.556)	(1.261)	(1.686)
Administration: Year Eight	6.550***	7.983***	7.713***	9.006***
	(2.022)	(3.048)	(2.276)	(3.361)
Agency & Presidential Administration Fixed Effects	No	Yes	No	Yes
ln (p)	−	−	2.456***	2.633***
			(0.080)	(0.082)
AIC	9414.865	9365.089	1160.448	1076.445
Observations	860	860	860	860

Notes: ⁺ p ≤ 0.10, * p ≤ 0.05, ** p ≤ 0.01, *** p ≤ 0.001 (two-tailed test). Entries are hazard rate estimates (H_O: exp(ß) = 1.0). Robust standard errors clustered by agency appear inside parentheses. Probability values appear inside brackets. N = 860.

administrative leaders whose agencies are off the president's institutional agenda are at

lower risk for departure compared to high loyalist counterparts operating under similar

terms. The hypothesized sign of the incentive compatibility hypothesis is represented by a

hazard ratio < 1.0 corresponding to the interaction effect between *Presidential Loyalty ×*

Policy Priority Agency. That is, a rise in appointee loyalty is hypothesized to be associated

with a lower average level of departure for administrative leaders whose agencies are on

the president's policy agenda compared to those who serve in off-agenda executive agencies.

differential risk of departure on any given day, (2) the differential predicted median

confirmation days, and (3) differential survival rates at varying levels of appointee loyalty.

Figure 2 displays the substantive effects of the hazard ratio estimates pertaining to

the incentive compatibility hypothesis. Specifically, these substantive effects involve an

interquartile unit marginal increase in appointee loyalty [1.3653] multiplied by the hazard

ratio associated with the *Presidential Loyalty × Policy Priority Agency* interaction covariate.

The estimates reveal estimated hazard ratios that fall well below the 1.0 threshold

associated with null effects. Regardless of estimation strategy (Cox or Weibull) and model

specification (omission/inclusion of both agency and presidential unit effects), the evidence

shows a much lower likelihood of administrative leader departure takes place on a given

day of service. These substantive effects range from a low of a 39.0% ([0.610 – 1] *100)

decline in the hazard rate of appointee departure (**Model 1**) to a high of a 41.5% ([0.585 – 1]

*100) hazard rate decline in administrative leader departure (**Model 2**).

Figure 3 analyzes the incentive compatibility hypothesis in terms of the predicted

median survival times with corresponding 95% confidence intervals based on the Weibull

duration models (**Models 3 & 4**). This analysis arrives at estimates of the 'extra days' of

service differential that can be expected from administrative leaders serving in presidential

FIGURE 2

Marginal Differential Effect of Presidential Loyalty on Appointee Tenure Hazard
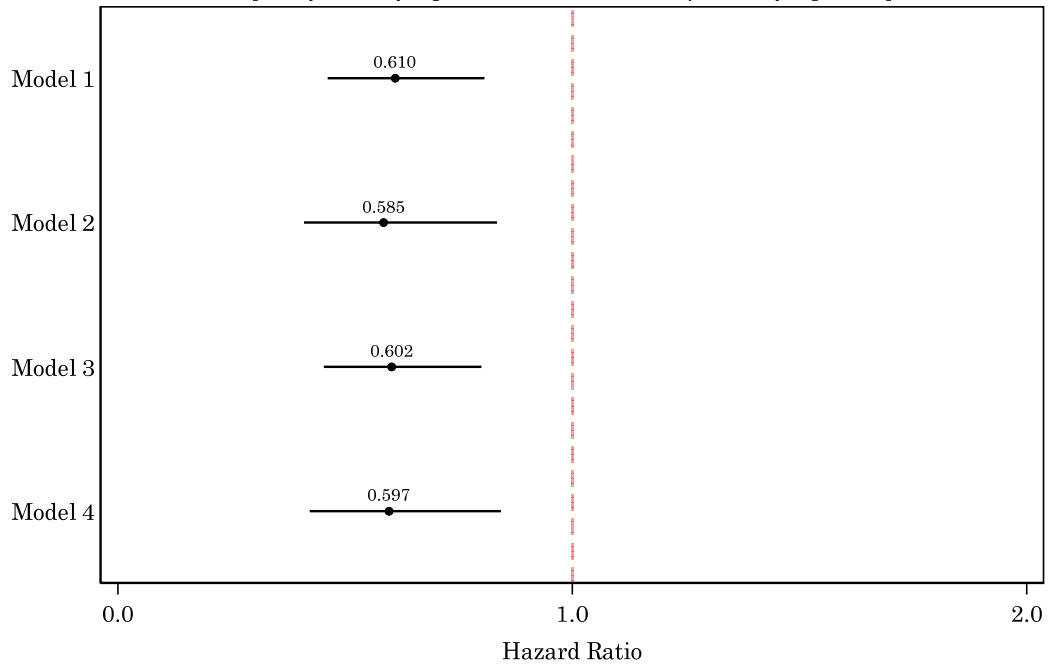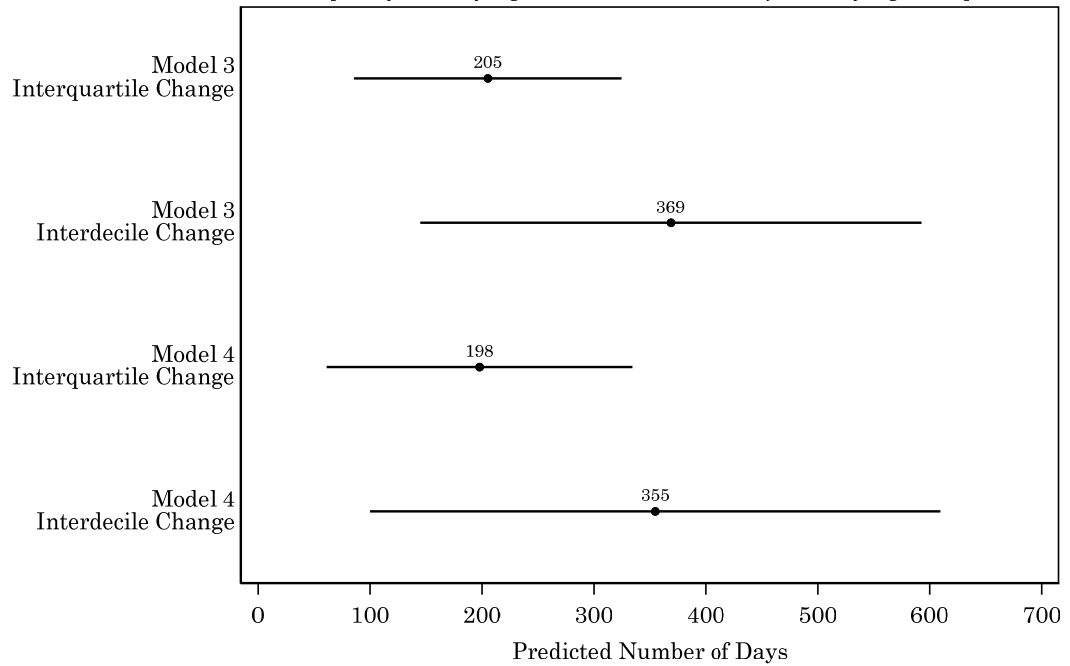[Policy Priority Agencies versus Non-Policy Priority Agencies]

FIGURE 3

Marginal Differential Effect of Presidential Loyalty on Median Appointee Tenure
[Policy Priority Agencies versus Non-Policy Priority Agencies]

policy priority agencies versus those that do not, known at time of nomination, based on

when appointee loyalty is evaluated at $q = 75$ minus and $q = 25$ (interquartile change), and

also evaluated at $q = 90$ minus $q = 10$ (interdecile change). These estimates are naturally

more imprecise than the estimated hazard rate effects reported in **Figure 2** since the

predicted median survival times account for both (point) estimate uncertainty and overall

model (prediction error) uncertainty generated from the full model specification. The

estimated interquartile increase in appointee loyalty on administrative leader length of

service between presidential policy priority agencies versus off-agenda agencies is 205 days

(0.56 years) and 198 days (0.54 years) additional confirmation days that respectively omit

and include both agency and presidential administration unit effects. These effects

constitute a 22.60% and 21.83% differential increase in predicted median tenure between

those administrative leaders serving in presidential policy priority agencies at the time of

nomination versus counterparts serving in off-agenda agencies.[8] When analyzing starker

interdecile changes in appointee loyalty, this differential commitment effect is associated

with a predicted median tenure increase for administrative leaders of 369 days (1.011

years) and 355 days (0.97 years) in these respective models. This interdecile unit change

yields a 40.68% and 39.14% differential increase in predicted median tenure relative to the

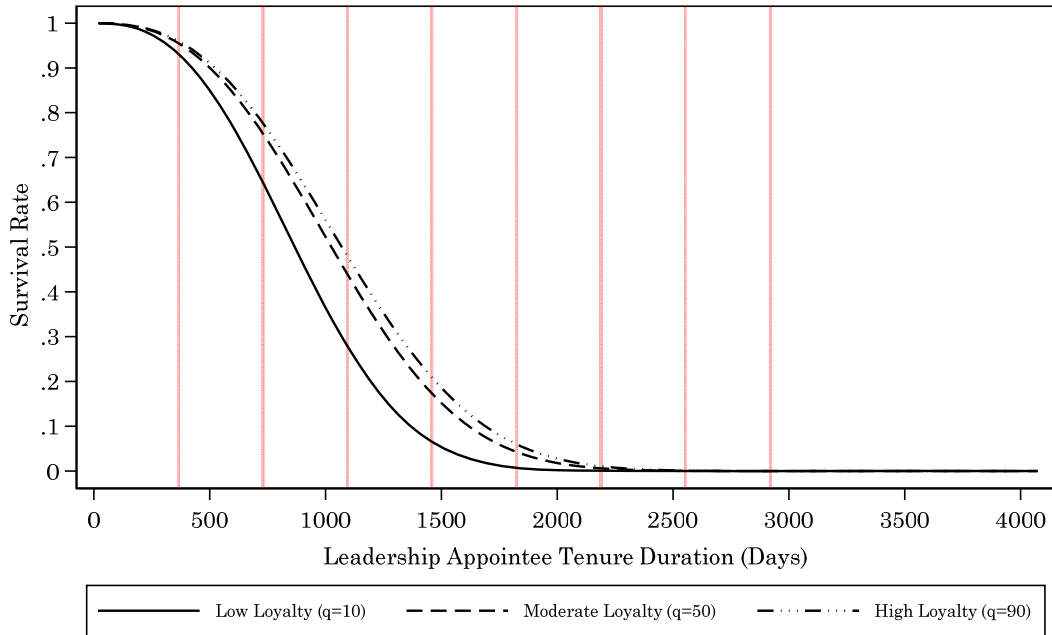baseline of unconditional median tenure.

     Figure 4 displays the predicted differential survival rates relating to low ($q = 10$),

moderate ($q = 50$), and high ($q = 90$) levels of appointee loyalty between serving in a

presidential policy priority agency versus an off-agenda agency for those occupying U.S.

federal executive agency leadership positions. Analysis of the **Model 4** estimates displays

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[8] These percentage change effects on predicted median tenure is computed as Unconditional Median

Tenure – UMT (907 days, 2.49 years), such that [(UMT + ΔAL | IQR) / UMT]*100.

the dynamic differential in survival attributable to appointee loyalty associated with the serving in a presidential policy priority agency compared to an off-agenda agency that cannot be gleaned from the preceding analysis of differential hazard rates and predicted median confirmtion days. Each of the vertical red lines represent predicted years of service time elapsed. Specifically, this predicted survival rate differential between Low ($q = 10$) and High ($q = 90$) appointee loyalty is a modest 2% [0.95 − 0.93] when evaluated at the end of the first year of service (T = 365 days). This differential rises to 12% [0.79 − 0.67] and 19% [0.48 − 0.29] respectively in the second (T = 730 days) and third (T = 1,095 days) years of service, before declining to 13% [0.22 − 0.09] at the end of the fourth year of service (T = 1,460 days). This three year range between two and four years of appointed service is substantively meaningful since it yields the greatest risk for appointee turnover that is germane for nearly half of the administrative leaders in this sample [83.84% − 38.26% = 45.58%]. For longer years of service, these differentials attenuate with the passage of survival time (i.e., appointee tenure), with estimated 5% [0.08 − 0.03] and 1% [0.02 − 0.01] differentials in the fifth and sixth years of service (T = 1,895 days, T = 2,190 days), respectively. Clearly, incentive compatibility between presidents and loyalist political executives' shared policy interests yields the best prospects for continuity of administrative leadership within U.S. federal executive agencies.

Taken together, these findings provide quantitative leverage for understanding what presidents can feasibly hope to obtain from enhancing greater stability among their appointed administrative leaders based on what is known at the time of nomination, and not subject to the vagaries associated with environmental conditions arising from both politics and economic conditions that are beyond the president's purview. The power of presidential appointments clearly go beyond what these unelected officials can accomplish once in office, but also determines the extent to which presidents can instill stability in

FIGURE 4
Predicted Survival Function Differential Between
Policy Priority Agencies versus Non-Policy Priority Agencies
[Varying Levels of Presidential Loyalty: Model 4]

executive administration. These findings indicate that presidents obtain a conditional

tenure premium that presidents obtain from loyalist executive appointees – one that can

only be realized when presidents' policy priorities are linked to an appointee's agency that

is known at the time of formal nomination. That is, incentive compatibility between

presidents and their administrative leaders facilitates the president's goals of responsive

competence insofar that they can attain greater stability. When these conditions are

lacking, presidents seemingly place less emphasis on responsive competence since either an

agency is either 'off-the-agenda' or a strong loyalist is not appointed. For 'off-agenda'

agencies, presidents appear to be rationally less averse to administrative leadership

turnover since this subset of executive appointees are less critical to advancing the

president's policy agenda.

Alternative Analyses: Alternative Mechanisms, Estimation and Data Structures

In supplementary analyses appearing in the **Supplementary Appendix**, the sensitivity of the core estimates to alternative modeling strategies and data structures are evaluated (***Appendix A***). These findings reveal that the reported estimates using both Cox and Weibull models to evaluate the incentive compatibility hypothesis are consistent with those generated from both Gompertz and Generalized Gamma distributional survival models. Also, estimation of a competing risks model indicates that these differential effects posited by the incentive compatibility hypothesis do not systematically differ when comparing the departure of an administrative leader for a subsequent presidential appointed position versus one that is outside the purview of U.S. executive branch politics.

In addition, a series of sensitivity checks are performed to evaluate alternative mechanisms distinct from the incentive compatibility hypothesis proposed in this study. ***Appendix B*** reveals that the differential effect of an appointee's level of managerial skills and policy expertise on administrative leader tenure, conditional on being a presidential policy priority agency at time of nomination is not observed in these data. In other words, although proponent types exhibit higher managerial skills and policy expertise than caretaker types as documented earlier in the study, such differences do not notably affect tenure of administrative leaders. In addition, differential effects of appointee loyalty on administrative leaders' tenure are analyzed based on whether they are in a top official leadership position or a subordinate leadership position, ideological policy conflict between the president and Senate filibuster pivot, and whether the position is in a less prestigious executive agency that is less proximate to the president (independent executive agency) or otherwise. With few exceptions, these conditional differential effects are not statistically

significant. Moreover, each of these alternative models provide an inferior model fit (based on AIC and BIC statistics reported in **Table B1**) compared to reported models.[9]

Alternative executive branch presidential loyalty-based incentive compatibility scenarios are explicitly analyzed in ***Appendix C*** that model dynamic sources of mutual commitment between presidents and their appointed executive agency leaders that is distinct from the logic predicated on the initial terms of service. These alternative incentive compatibility mechanisms occurring *ex post* to nomination include an agency (1) switching from on to off the president's policy agenda during an appointee's tenure in office; (2) switching from off to on the president's policy agenda during an appointee's tenure in office; and (3) the agency's presidential agenda-status at day of departure based on a multiple spells database that allows naturally time-varying covariates to vary across time (days of service) for each appointee observation. Accounting for these changes in policy priority status *ex post* to nomination reveals that executive appointee leadership stability is predicated on the incentive compatibility arrangement made at the time that the appointee agrees to serve, and not subsequent changes in the president's policy agenda that take place once an appointee is in office. Finally, ***Appendix D*** reveals that an alternative 'loyal

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[9] These exceptions include appointed leaders with higher levels of policy expertise located in presidential policy priority agencies are more likely to depart than similar counterparts serving in off-agenda agencies; and loyalist political executives serving in top level agency positions are also somewhat more likely serve shorter tenures than similar subordinate counterparts. Yet, the predicted median tenure effects for these covariates are much smaller than the incentive compatibility estimates (**Appendix B: Figure B2**), display marginal statistical significance ($0.05 < p < 0.10$) (**Appendix B: Figure B1**), while also yielding inferior model fit to these data (**Appendix B: Table B1**).

lieutenant' perspective is not supported by these data since presidential loyalty does not predict appointee tenure in an unconditional manner divorced from the incentive compatibility logic. Thus, one can infer that incentive compatibility (or lack thereof) between presidents and executive leadership appointees are vital for explaining leadership stability within U.S federal agencies.

Discussion

A critical, yet underappreciated aspect of executive power pertains to the duration of service of appointed administrative officials. '*Duration'*, as defined by Alexander Hamilton, is synonymous with governance stability since the executive branch, and more specifically, the administrative state, is responsible for ensuring that policies are implemented to achieved intended outcomes. The concept of *'Duration'* is central to the proper functioning of subordinate executive offices charged with responsibility for policy administration (Caldwell 1964: 90; see also Green 1990: 514), and also a means of avoiding both chaos and disruption in executive administration as duly noted in *Federalist 72* (Rossiter 1961: 436; see also, Green 1990: 514). This issue is critical to the modern study of administrative governance since different incentives and tensions naturally arise within the U.S. federal bureaucracy between highly transient executive appointees and relatively permanent career officials (e.g., Aberbach and Rockman 2000; Heclo 1977; Lewis 2008; Resh 2015), made even more critical in light of the emergence of 'acting' officials providing leadership to U.S. federal executive agencies (e.g., Kinane 2021; O'Connell 2020).

This study has sought to better understand Hamilton's concept of '*duration'* in office by analyzing administrative leaders charged with responsibility for setting, directing, and guiding executive administration of public policies. Although past studies bring to bear important empirical insights on longevity of service among U.S. federal appointees (Dull, et

al. 2012; Wood and Marchbanks 2008), they are also limited insofar that they treat presidential appointees as lacking policy-based incentives for service in U.S. federal executive agency leadership positions. This study underscores the downstream importance of presidential appointments for creating conducive conditions for shepherding the president's policy goals by ensuring that leadership stability within U.S. executive agencies.

Presidents' appointment choices have direct consequences for ensuring continuity among politically responsive agency leaders in those administrative settings most vital to their policy agenda. Because executive-level political appointees typically serve rather short tenures that only represent a small fraction of a president's time in office, coherent executive branch governance requires stable administrative leadership if efforts at reconciling the fundamental tension between political leadership ('mandates') and bureaucratic professionalism ('mandarins') are to be effective (Aberbach and Rockman 1988). Although presidents do seek to use administrative means to achieve policy goals (e.g., Nathan 1983; Moe 1985), presidents are additionally constrained beyond canonical control-expertise tradeoffs posed by entrusting authority in the hands of administrative officials. Specifically, presidents cannot attain Alexander's Hamilton's aim for adequate 'duration' in executive administration from merely appointing loyalists, unless it is coupled with a firm mutually beneficial commitment coinciding with an executive appointment. Hence, presidents must prioritize their efforts for effective politicization of executive agencies through ensuring leadership stability to those settings where responsive competence benefits both themselves and their chosen administrative leaders.

The analysis of the United States federal executive branch offers a distinctive test of incentive compatibility theory of organizational change and continuity in the form of administrative leader turnover. Future research extending this analysis into parliamentary systems can offer much needed insight regarding the extent that incentive compatibility is

critical to evaluating the underlying tension of tenure stability of cabinet ministers and their top subordinates possessing strong career (partisan) political career concerns (e.g., Berlinski Dewan, and Dowding 2010: 559-560) against institutional design features that make parliamentary systems less stable relative to presidential systems (e.g., Linz 1990: 64).

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SUPPLEMENTARY APPENDIX

Hardwiring Organizational Continuity and Change in U.S. Federal Executive Agencies:
Incentive Compatibility and the Turnover of Administrative Leaders

APPENDIX A

Appendix A considers alternative estimation and data designs for evaluating the *incentive compatibility hypothesis* to ensure that the findings reported in the manuscript are not an artifact of the type of statistical model or data design employed to evaluate this hypothesis. These alternatives are summarized in the manuscript (see *Alternative Analyses: Alternative Mechanisms, Estimation and Data Designs* subsection). As with **Appendix A**, comparisons to the reported model estimates involve both the Cox and Weibull model specifications accounting for both agency and presidential administration unit effects (**Models 2** & **4**) in **Figure A1**, while the same Weibull Model formulation (**Model 4**) is employed in **Figure A2**. Because the Generalized Gamma model parametric survival estimates are in a different time metric (Accelerated Time Failure [AFT]), they are not reported in this set of supplementary graphics. Nonetheless, these Generalized Gamma AFT estimates are extremely similar for those generated from the Weibull model (0.1391 versus 0.1438) and yield identical p-values (0.003 versus 0.003).

Figure A1 reveals that the reported model estimates denoted by **Models 2** & **4** are not only robust to alternative distributional assumptions (**Gompertz**, **Model A1.4**), but also to both omission of observations (n = 33, 3.85% of full sample) excluded from the competing risk model analysis due to lack of information on destination following appointee departure (**Cox Model, A2.2**). The predicted median survival times presented in **Figure A2** display that these sensitivity checks offer very similar, and in some cases, less

conservative estimates of the consequences of the *incentive compatibility hypothesis* on the estimated duration of service for upper-echelon political appointees within U.S. federal executive agencies.

The competing risk model analyzing whether the differential effect of conditional loyalty on departure destination reveals that loyalist executive appointees serving in presidential policy priority agencies are no more likely to land in a subsequent administration appointed position than a destination outside this purview (e.g., private sector, non-profit, or retirement) relative to loyalist executive appointees whose agencies are off the president's policy agenda. This estimate is comparatively modest relative to the primary estimates of interest evaluating the *incentive compatibility hypothesis* (hazard rate = −0.890, 11.0% differential effect), while being estimated with substantial imprecision that clearly renders a null finding.

FIGURE A1

Marginal Differential Effect of Presidential Loyalty on Appointee Tenure Hazard
Alternative Parametric Hazards & Data Designs
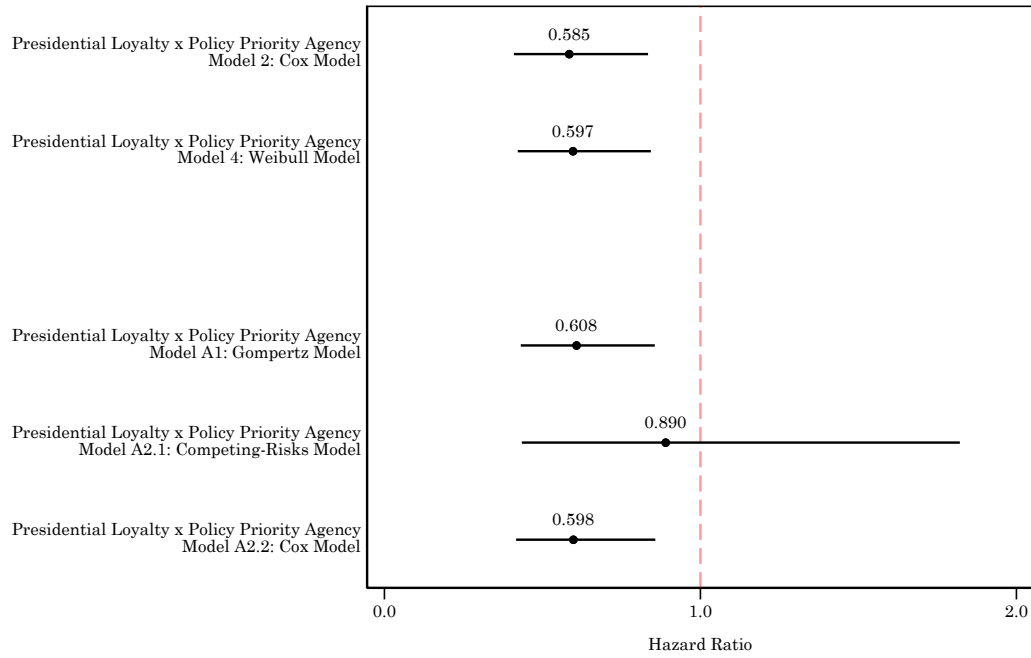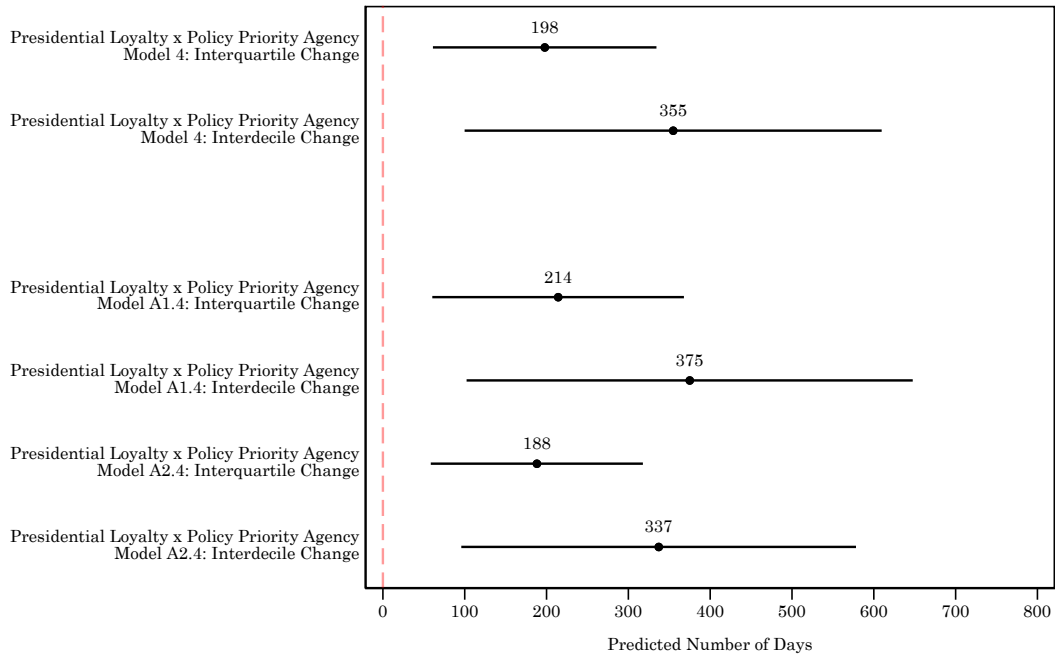[Policy Priority Agencies versus Non-Policy Priority Agencies]

FIGURE A2

Marginal Differential Effect of Presidential Loyalty Predicting Median Appointee Tenure
Alternative Parametric Hazards & Data Designs
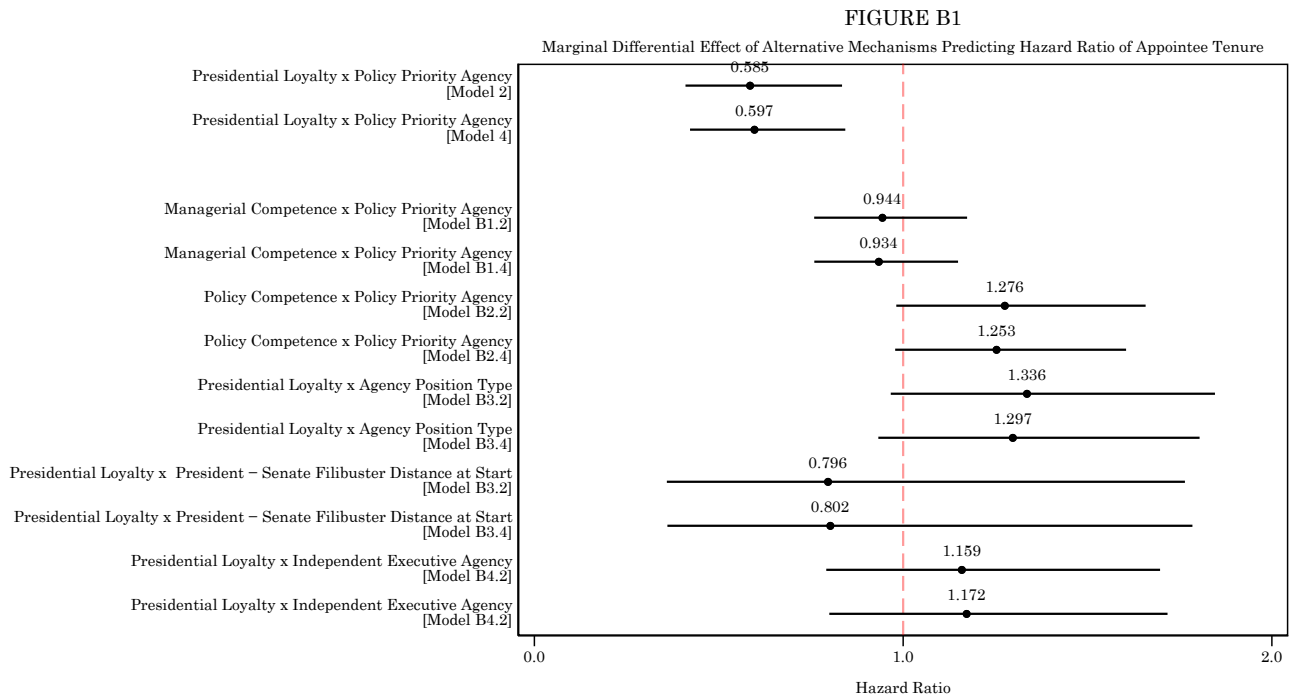[Policy Priority Agencies versus Non-Policy Priority Agencies]

3

Appendix B explicitly considers alternative competing mechanisms in comparison to the *Mutual Commitment Hypothesis* that is derived from the logic of a mutual commitment between president and executive appointee advanced in this study. These alternative mechanisms are discussed in the manuscript (see *Alternative Analyses: Alternative Mechanisms, Estimation and Data Designs* subsection). The Cox and Weibull model specifications accounting for both agency and presidential administration unit effects are employed in **Figure B1** (**Models 2** & **4**), while the same Weibull Model formulation (**Model 4**) is employed in **Figure B2**.

These alternative set of differential substantive effects on the hazard of appointee departure are not only more modest, but also fail to come close to attaining statistical significance at conventional levels in **Figure B1** with exception of *Policy Competence × Policy Priority Agency* (**Models B2.2 & B2.4**) and *Presidential Loyalty × Agency Position Type* (**Models B3.2 & B3.4**). For this particular set of estimates, an interquartile increase in presidential loyalty is associated with roughly a 25% to 34% higher likelihood of departure than compared to the baseline of a non-policy priority agency or a subordinate executive leadership appointee. The former finding oddly shows that executive leadership appointees with higher levels of agency-specific policy expertise from their prior background qualifications are more likely to depart a policy priority agency than a non-policy priority agency. This might be due to potential clashes resulting from the tension between political control and expertise regarding the conduct of executive administration. The latter finding contrasts with the unconditional effect of *Agency Position Type* on the hazard of appointee departure reported in the manuscript that finds top agency officials are less likely to depart, on average, compared to subordinate officials. Taken together, this finding suggests that lower and moderate loyalist chief political executives are

comparatively more durable in terms of service to the administration than their

subordinate counterparts. Yet, a closer inspection of the predicted median survival effects

in **Figure B1** reveals that these substantive differential interquartile and interdecile

effects for these *Policy Competence × Policy Priority Agency* and *Presidential Loyalty ×*

Agency Position Type covariates are rather numerically modest in magnitude (−83 & −141

days and −97 and −164 days, respectively) compared to the corresponding differential

median survival consequences attributable to *Presidential Loyalty × Policy Priority Agency*

(198 and 355 days), while the latter model estimates reported in the manuscript offer a

better representation of these data based on both lower AIC and BIC statistics (**Table B1**).

It should also be noted that the estimates for these alternative differential effects are

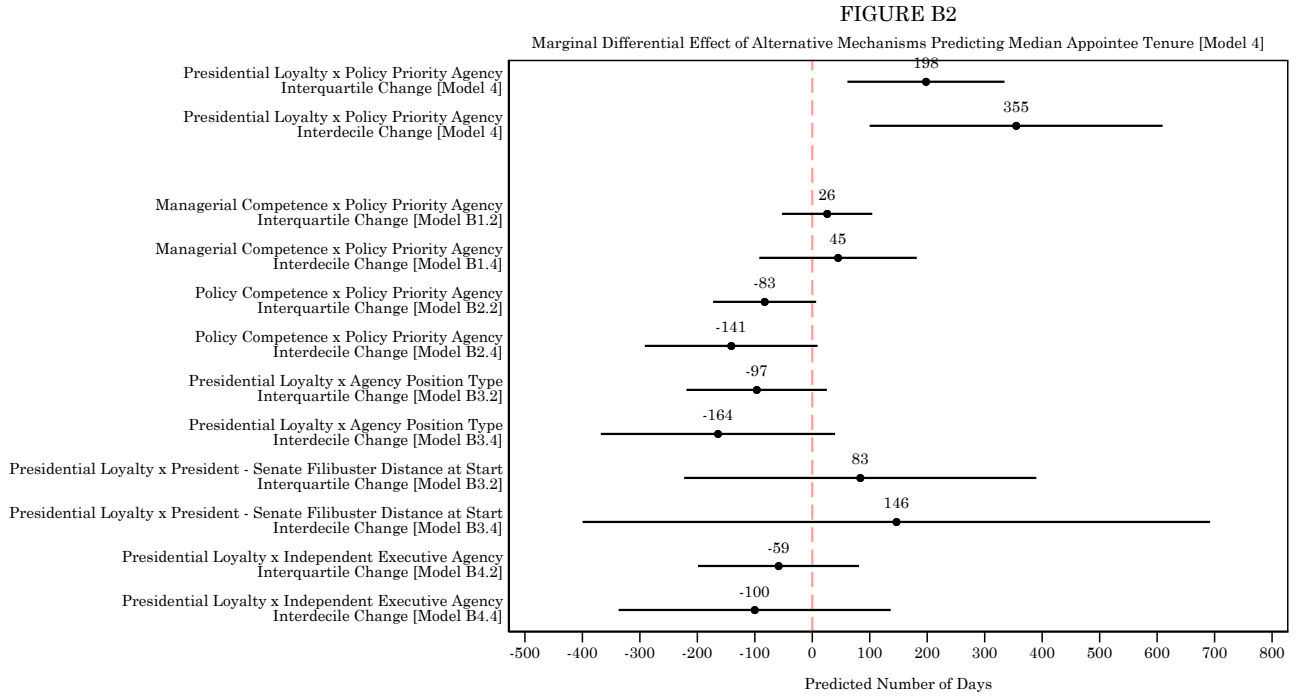estimated with somewhat less precision, and thus attain marginal significance at p < 0.10.

FIGURE B1

Marginal Differential Effect of Alternative Mechanisms Predicting Hazard Ratio of Appointee Tenure

FIGURE B2

Marginal Differential Effect of Alternative Mechanisms Predicting Median Appointee Tenure [Model 4]

TABLE B.1

Model Fit Statistics for Alternative Model Specifications (*Figures B1 & B2*)

Model Specification	AIC	BIC
Presidential Loyalty × Policy Priority Agency: **Model 2**	**9365.089**	**9555.366**
Presidential Loyalty × Policy Priority Agency: **Model 4**	**1076.445**	**1190.612**
Managerial Competence × Policy Priority Agency: **Model B1.2**	9381.751	9572.028
Managerial Competence × Policy Priority Agency: **Model B1.4**	1091.977	1206.143
Policy Competence × Policy Priority Agency: **Model B2.2**	9377.705	9567.982
Policy Competence × Policy Priority Agency: **Model B2.4**	1088.608	1202.774
Presidential Loyalty × Agency Position Type: **Model B3.2**	9376.76	9567.037
Presidential Loyalty × Agency Position Type: **Model B3.4**	1088.009	1202.176
Presidential Loyalty × President − Senate Filibuster Distance at Start: **Model B4.2**	9381.639	9571.916
Presidential Loyalty × President − Senate Filibuster Distance at Start: **Model B4.4**	1092.005	1206.172
Presidential Loyalty × Independent Executive Agency: **Model B5.2**	9381.467	9571.744
Presidential Loyalty × Independent Executive Agency: **Model B5.4**	1091.708	1205.875

Alternative scenarios where shifts in the president's policy agenda *ex post* to nomination are considered as rival incentive compatibility mechanisms to the one predicated on the initial mutual agreement by president and executive appointee to serve at time of nomination logic. These shifts in presidential agenda-status include: (1) an agency switching from being on to off the president's policy agenda during an appointee's tenure in office; (2) an agency switching from being off to on the president's policy agenda during an appointee's tenure in office; and (3) the agency's presidential agenda-status at time of departure based on a multiple spells database that allows naturally time-varying covariates to vary across time (days of service) for each appointee observation. The first pair of alternative mechanisms, *switch from on to off agenda status* and *switch from off to on agenda status*, are incorporated into a unrestricted model specification alongside the *time of nomination agenda status* used for evaluating the *incentive compatibility logic* proposed in the manuscript within the same model specifications. The final alternative scenario, analyzing *day of departure agenda status*, is modeled separately since it is estimated based on a different sample of observations via a multiple spells design that models time-varying covariates in a flexible manner.[1]

The findings clearly indicate that changes in policy priority status *ex post* to nomination reveals that executive appointee leadership stability is predicated on the incentive compatibility arrangement made at the time that the appointee agrees to serve, and not subsequent changes in the president's policy agenda that take place once an appointee is in office. The stronger predictive performance of *time of nomination agenda*

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[1] The single spells data design is based on 860 unique appointee observation cases; whereas, the multiple spells data design is based on 850,034 appointee-observation days.

status vis-à-vis these alternative agenda-status mechanisms in terms of estimated marginal

differential hazard rate effects (**Figure C1**), and also predicted median tenure effects in

days (**Figure C2**). The restricted model specifications reported in the manuscript generally

offer a superior model fit to these data based on both the AIC and BIC statistics compared

to the unrestricted model specifications also containing these former two alternative

mechanisms (**Table C1**), except for **Model 2/C2**, where both the AIC and BIC statistics are

marginally lower-valued for the unrestricted model compared to the restricted model (see
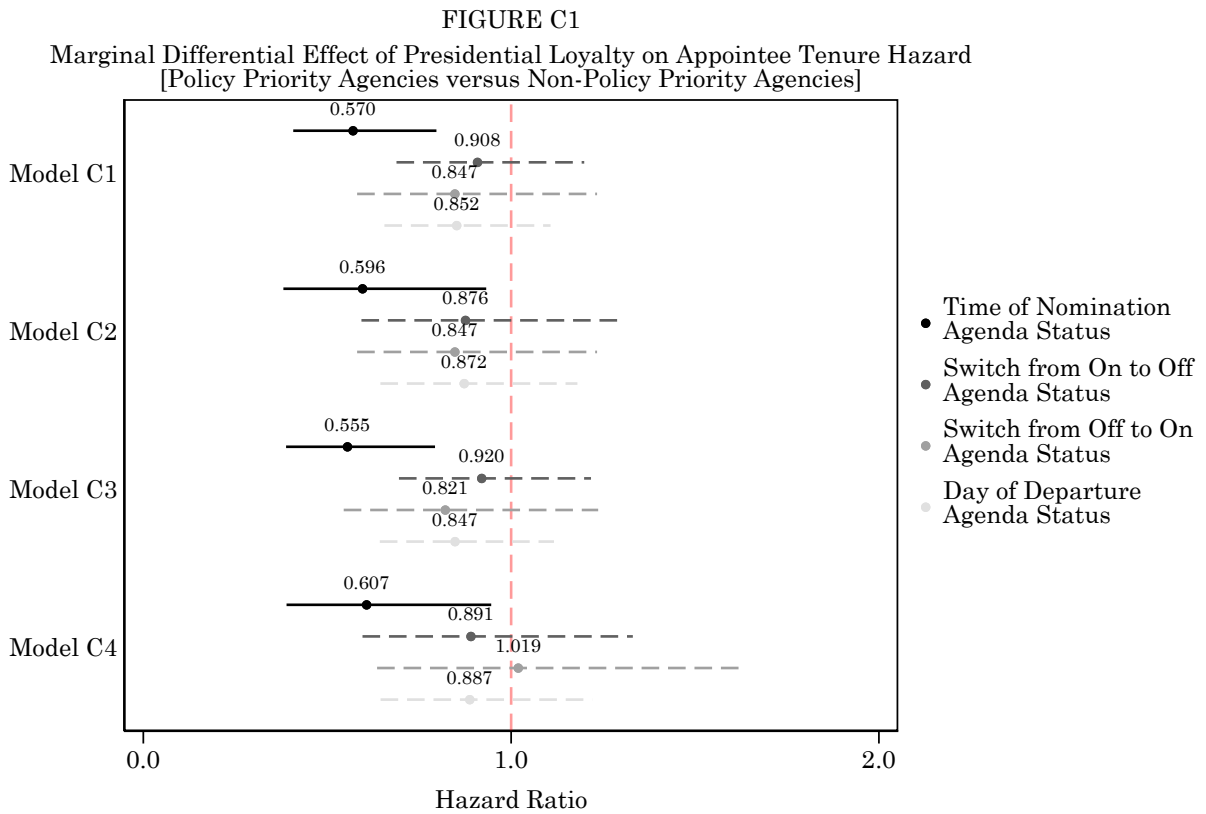
red typeface numerical entries).

FIGURE C1
Marginal Differential Effect of Presidential Loyalty on Appointee Tenure Hazard
[Policy Priority Agencies versus Non-Policy Priority Agencies]

FIGURE C2

Marginal Differential Effect of Presidential Loyalty on Median Appointee Tenure
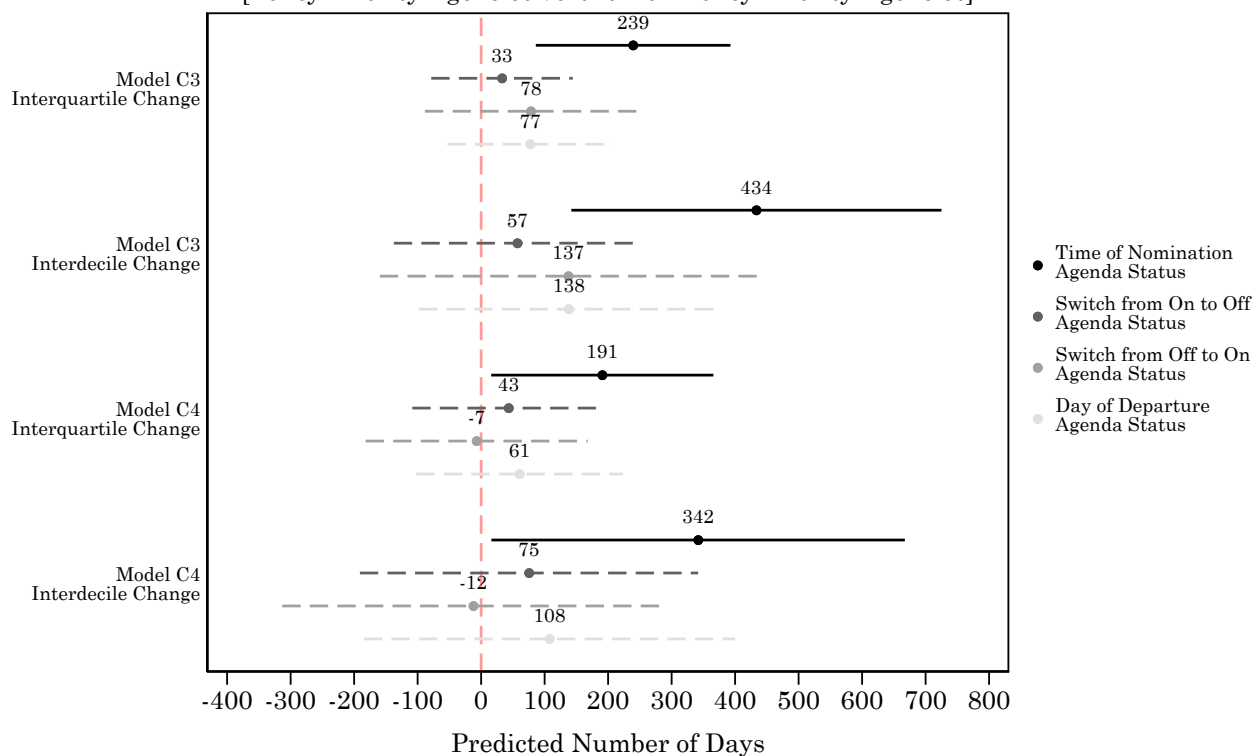### [Policy Priority Agencies versus Non-Policy Priority Agencies]

TABLE C.1

Model Fit Statistics for Alternative Comparable Model Specifications
(*Figures C1 & C2: Reported Models versus Multiple Interaction Models*)

Model Specification	AIC	BIC
Presidential Loyalty × Policy Priority Agency NOM: **Model 1 [Cox Model]**	**9414.865**	**9519.517**
Presidential Loyalty × Policy Priority Agency NOM/ON-OFF/OFF-ON: **Model C1 [Cox Model]**	9420.594	9544.274
Presidential Loyalty × Policy Priority Agency NOM: **Model 2 [Cox Model]**	9365.089	9555.366
Presidential Loyalty × Policy Priority Agency NOM/ON-OFF/OFF-ON: **Model C2 [Cox Model]**	*9363.717*	*9553.995*
Presidential Loyalty × Policy Priority Agency NOM: **Model 3 [Weibull Model]**	**1160.448**	**1274.615**
Presidential Loyalty × *Policy Priority Agency NOM/ON-OFF/OFF-ON*: **Model C3 [Weibull Model]**	1165.804	1298.998
Presidential Loyalty × Policy Priority Agency NOM: **Model 4 [Weibull Model]**	**1076.445**	**1190.612**
Presidential Loyalty × *Policy Priority Agency NOM/ON-OFF/OFF-ON*: **Model C4 [Weibull Model]**	1083.07	1216.265

9

Supplementary analysis is performed comparing the incentive compatibility logic against a naïve model, whereby presidential loyalty has an unconditional, additive relationship to executive leadership appointee tenure. This model subsumes that the extent that an appointed leader is loyal to the president will be correlated with their tenure of service for a given position. A summary of these estimates appears below in **Figures D1** and **Figures D2**, respectively. These estimates reveal trivial estimated hazard ratios that are not noticeably distinct from the null hypothesis of positive unity (**Figure D1**). Moreover, the estimates displayed in **Figure D2** uncover meager effects (ranging from −4 days to + 23 days) that can be attributed to an executive appointee's loyalty to the appointing president, independent from the latter's incentives for remaining in office. Finally, these simpler alternative model specifications yield an inferior fit to these data compared to the model specifications providing support for the *incentive compatibility hypothesis* reported in the manuscript.

FIGURE D1

Marginal Differential Effect of Presidential Loyalty on Appointee Tenure Hazard
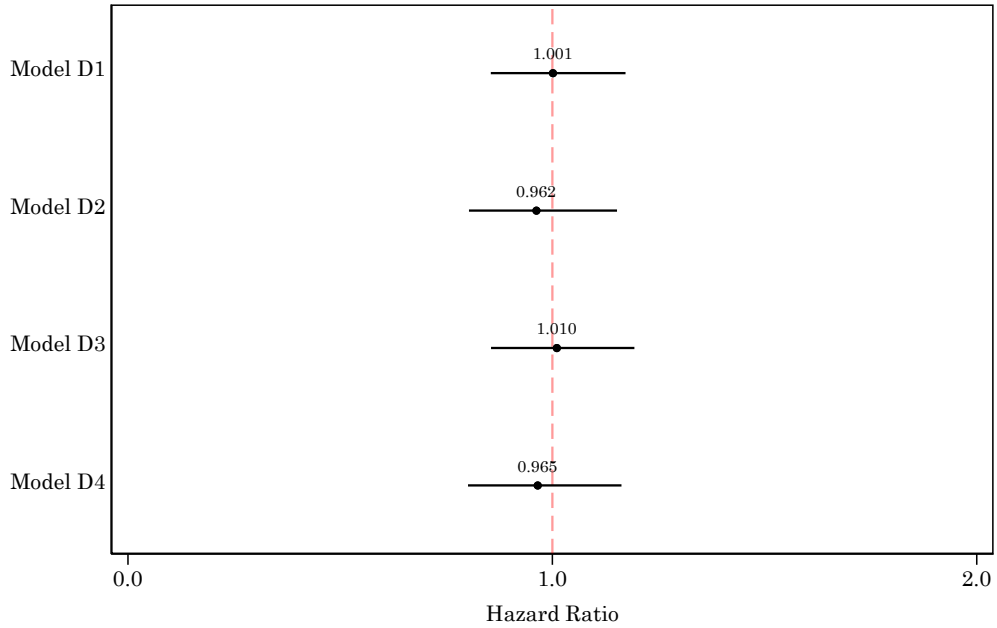[Unconditional Additive Effect]

Hazard Ratio

FIGURE D2

Marginal Differential Effect of Presidential Loyalty on Median Appointee Tenure
[Unconditional Additive Effect]
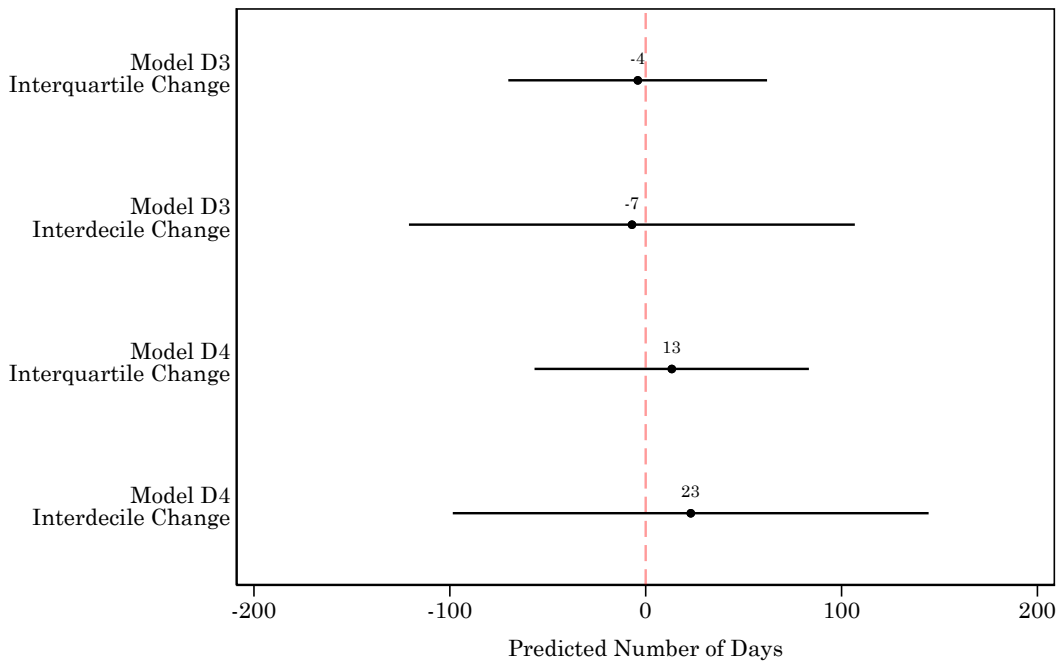

Predicted Number of Days

TABLE D.1

Model Fit Statistics for Alternative Comparable Model Specifications
(*Figures D1 & D2: Reported Models versus Additive/Unconditional Presidential Loyalty Models*)

Model Specification	AIC	BIC
Presidential Loyalty × Policy Priority Agency NOM: **Model 1 [*Cox Model*]**	**9414.865**	**9519.517**
Presidential Loyalty: **Model D1 [*Cox Model*]**	9430.723	9530.619
Presidential Loyalty × Policy Priority Agency NOM: **Model 2 [*Cox Model*]**	**9365.089**	**9555.366**
Presidential Loyalty: **Model D2 [*Cox Model*]**	9382.036	9572.313
Presidential Loyalty × Policy Priority Agency NOM: **Model 3 [*Weibull Model*]**	**1160.448**	**1274.615**
Presidential Loyalty: **Model D3 [*Weibull Model*]**	1177.743	1287.153
Presidential Loyalty × Policy Priority Agency NOM: **Model 4 [*Weibull Model*]**	**1076.445**	**1190.612**
Presidential Loyalty: **Model D4 [*Weibull Model*]**	1090.377	1199.787