Judicial Appointments, Electoral Accountability, and Polarization

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Abstract

In the US, judicial review constrains executive power. However, presidents appoint members of the court, potentially weakening this constraint. Elections may discipline who presidents appoint, but those appointments may also affect elections by shaping voter expectations about the court’s constraint on future officeholders and thereby altering the voting calculus. We develop a model of electoral accountability to study these strategic links between voters, politicians, and judges. An executive appoints a judge who constrains present and future policy. Our analysis delivers four substantive insights. First, electoral accountability may encourage moderate appointments, thus alleviating the counter-majoritarian difficulty. Second, policy reforms that increase turnover on the court may backfire and reduce voter welfare if they go too far. Third, polarization has important effects, but these effects are conditioned on the source of polarization. Finally, electoral forces may help to explain some empirical patterns not well explained by existing theory.

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Introduction

Established by *Marbury v. Madison* in 1803, judicial review by the Supreme Court is one of the most important constraints on executive behavior in the US.¹ Emphasizing this point, Alexander Hamilton stated that judicial independence provides the “essential safeguard against the effects of occasional ill humors in society” (1788). However, the judiciary itself is not isolated from the political process.

Presidents appoint the justices who sit on the US Supreme Court. Accordingly, the president wields significant influence over the composition of the judiciary, and this influence may undermine the court’s effectiveness as a check on executive power. However, if the composition of the Supreme Court is a salient concern to voters, then reelection incentives may be an effective constraint on presidential appointments. In recent decades, voters have been knowledgeable about the Supreme Court (Gibson and Caldeira, 2009a,b) and nominations have become an increasingly contentious and salient issue for voters (Gimpel and Wolpert, 1996, p. 164). Indeed, a Pew Research survey conducted before the 2020 presidential election found that 64% of voters listed the Supreme Court as a very important issue, making it the third-ranked issue overall.²

Not only is the Supreme Court a salient electoral issue, but voters care about the party and perceived ideology of nominees (Caldeira and Smith Jr, 1996; Bartels and Johnston, 2012; Sen, 2017). These voter perceptions are consistent with findings that ideology is an important determinant of how justices vote on the Supreme Court (e.g., Pritchett, 1948; Martin and Quinn, 2002; Epstein et al., 2007; Clark et al., 2021). Accordingly, the ideology of the nominee can also shape the electorate’s perception of the president. For example, President Reagan faced significant backlash from conservative voters after nominating Sandra Day O’Connor due to her views on abortion.³

¹For example, in January 2017, President Trump signed an executive order restricting travel from seven countries. This action faced immediate legal challenges and the administration altered the policy in response. Although it was eventually upheld by the Supreme Court, the threat of judicial review played a central role in shaping the ultimate policy outcome.

²www.pewresearch.org/politics/2020/08/13/important-issues-in-the-2020-election/

³“You have destroyed your credibility with me Mr. President. I feel betrayed because of your anti-abortion stance prior to the election. Either you lied to us then or you are lying to yourself now.” Donald R. Fries to Ronald Reagan, July 9 1981, Folder [Mail Sample] 07/16/1981, Box [Folder Name]
Viewing nominations through a politicized lens, a significant share of voters prefer that Presidents couch their nominations in politicized terms (Bartels and Johnston, 2012). Presidents anticipate and respond to these incentives. For example, President Eisenhower’s nomination of William J. Brennan was driven by a desire to appeal to the electorate (Yalof, 2001, p. 56). Electoral pressures also exert influence on the confirmation process, with voters holding their senators accountable for votes on Supreme Court nominees (Kastellec, Lax and Phillips, 2010; Bass, Cameron and Kastellec, 2020). Furthermore, there is widespread agreement that public opinion has an indirect effect on the Supreme Court through the appointments process, creating a link from voters to politicians to justices (see, e.g., Dahl, 1957; McGuire and Stimson, 2004). Clearly, the anticipation of upcoming elections shapes presidential decisionmaking in the appointments process.5

How do electoral considerations influence executive appointments to the Supreme Court? And how do those appointments influence elections? To address these questions we develop a model of elections and judicial appointments in which ideology is a motivating factor for politicians, voters, and the judiciary.6,7 At present, the literature has not studied this important relationship. On the one hand, theories of judicial appointments have focused on how Senate confirmation affects nominations, largely ignoring the effect of voter perceptions and electoral incentives (Krehbiel, 2007; Moraski and Shipan, 1999; Rohde and Shepsle, 2007). On the other, theories of electoral accountability have focused on policymaking, taking the composition of the judiciary as exogenous (Fox and Stephenson, 2011; Le Bihan, 2016). We contribute to this literature by developing a model of electoral accountability in which policy choices are subject to judicial review, and the in-

4 Scholars disagree about the extent to which there is a direct effect of public opinion on Supreme Court decisions, though there is substantial theoretical and empirical support for the notion of an indirect effect due to turnover on the court.

5 Even in periods of low polarization, presidents considered the electoral importance of the justice’s regional and religious characteristics when selecting nominees.

6 Our theory builds on standard models of electoral accountability with adverse selection. For a review of this literature see, e.g. Ashworth (2012) and Duggan and Martinelli (2017).

7 Although ideology may not be the only factor in judicial decisionmaking, as noted earlier, it does appear to be an important determinant. Moreover, even if the justices consider other factors when issuing rulings, voters and politicians perceive justices as ideological. Consequently, given our interest in the interaction of elections and judicial appointments, we focus on the ideological motivations of the players.
cumbent can influence the composition of the court.

Our analysis has several important empirical and policy implications. First, our model can explain empirical patterns of appointments that are difficult to rationalize with existing theories of nominations. Second, we study the optimal turnover of the justices and apply our results to discuss recent proposals to reform the Supreme Court. Third, we find conditions under which electoral accountability can alleviate the counter-majoritarian difficulty by encouraging the appointment of moderate justices, bringing the court into line with the median voter. Finally, polarization plays a central role in our findings, however, we highlight that the effects of increased polarization on appointments depends on its source.

In the model, an incumbent politician must select both a justice and policy prior to an election against a challenger. While it is known that the incumbent is right-leaning and the challenger left-leaning, other players do not know whether each politician is a moderate or extremist. Though the representative voter cannot observe the incumbent’s ideal point directly, they do observe the ideology of the incumbent’s judicial nominee and policy choice. After observing these decisions, the voter chooses whether to reelect the incumbent, weighing their anticipated behavior in the second period against that of a challenger. Importantly, the voter anticipates how the newly appointed justice may constrain policy in the second period. This constraint is not guaranteed, as we model the possibility of a new vacancy on the court by allowing the second-period politician to appoint a new justice with some probability, replacing the first-period incumbent’s appointee.

Our modeling approach highlights how appointment decisions shape voter choice through two channels. First, they act as a potential signal of a nominating president’s own ideological bent, providing information about what policies the president will likely pursue in the future. Second, by changing the composition of the judiciary, appointments directly influence the set of feasible policies that presidents may enact now and in the future. Thus, the model highlights two important mechanisms through which judicial appointments influence the executive’s electoral prospects: revealing information to voters (signaling) and shaping the set of policies that will survive review (commitment).

Our findings demonstrate how the signaling and commitment roles of nominations interact to shape both electoral and policy outcomes. We show that exactly
three classes of equilibria are possible and fully characterize the conditions producing each. They capture qualitatively distinct roles of appointments in the electoral process.

First, in an informative appointments equilibrium, the incumbent’s choice of justice reveals information to the voter. Moderate incumbents choose centrist nominees to reassure the voter and win reelection. Extremist incumbents abandon reelection in an attempt to shape future policy by appointing an extreme and ideologically aligned justice.

Second, in a compromising equilibrium, moderate and extreme incumbents choose the same judge and policy, and so the voter does not learn the incumbent’s ideal point. Nevertheless, the appointed justice in such an equilibrium constrains extremists enough for the voter to reelect an incumbent who she learns nothing about. Importantly, the extremist wins reelection by influencing the beliefs of the voter and the future composition of the court.

Third, in a tying hands equilibrium, the incumbent wins reelection by appointing a justice who leans in the opposite direction and places relatively tight constraints on their future policy choice. The tighter judicial constraint provides a commitment device for the extremist, and thus enables him to win reelection even after revealing his true ideology (i.e., without choosing the same policy as the moderate).

Comparing these equilibria reveals how judicial appointments allow the executive to endogenously manipulate the salience of voters’ beliefs ahead of an election. In informative appointments equilibria, appointments render beliefs highly salient: the choice of appointment alone provides sufficient information for the voter to make her reelection decision. In contrast, in tying hands equilibria, the incumbent chooses a justice who renders the voter’s beliefs irrelevant, assuring reelection regardless of the voter’s belief. Our analysis indicates that the dual role of appointments as a signaling and commitment device is key in explaining such variation in the salience of beliefs.

Polarization also plays a central role in shaping equilibrium outcomes. In the model, polarization can increase in two ways. First, the difference between the parties’ ideological platforms can increase, which we refer to as ideological divergence. Second, the proportion of moderates may decrease, which we interpret as an
increase in *party extremists*.\textsuperscript{8} Importantly, this distinction matters in our analysis. We show how these two forms of polarization can have different effects on judicial appointments and voter welfare.

Finally, we consider institutional design, studying the optimal durability of judicial appointments. We find that an intermediate probability of a vacancy maximizes voter welfare. If the appointment is more durable then it easier for the incumbent to commit to future policies. Thus, it is optimal for politicians to be able to partially commit to future policy, but too much commitment undermines the benefits of electoral accountability. Additionally, the optimal level is a function of polarization. If the proportion of party extremists increases, so too does the optimal vacancy rate. In contrast, the optimal rate decreases as ideological divergence grows.

## Related Literature

The interaction between judicial review and electoral accountability has been previously studied by Fox and Stephenson (2011) and Almendares and Le Bihan (2015). The key difference is that we study how electoral accountability impacts judicial appointments, whereas those papers abstract from such concerns by taking the preferences of the court as fixed. Fox and Stephenson study the effect of judicial review on incentives for the incumbent to posture in order to win reelection. In their setting, voters and politicians agree on the appropriate policy. Almendares and Le Bihan incorporate the flavor of ideological conflict by modeling the possibility of *incongruent* politician types who wish to implement policy out of line with voter’s desires, conditional on the state of the world. However, in both papers policy is binary and there is uncertainty about the *correct policy*. These models contrast with our spatial approach, in which policy conflict is ideological, with judicial and voter preferences common knowledge. Our ideological setup allows us to study the impact of polarization on judicial review and executive policymaking.

Our focus on the role of ideology is important given the rich empirical literature that examines voter evaluation of presidents and their nominees to the Supreme Court. Importantly, these studies have found both ideology and attitudes toward

\textsuperscript{8}In the model, this is captured by a change in the voter’s prior beliefs about politicians.
the president to be an important factor in determining public support for nominees (Gimpel and Wolpert, 1996; Caldeira and Smith Jr, 1996). More generally, voters appear knowledgeable about both the court (Gibson and Caldeira, 2009b,a), and senate confirmation votes (Bass et al., 2020). Given that voters care about the ideological composition of the court, our analysis fills an important gap in the existing theoretical literature by analyzing how voter preferences shape presidential choice of nominees.

Our study also complements existing work that has largely focused on the role of Senate confirmation, and has abstracted away from electoral considerations of the executive (see, e.g., Rohde and Shepsle, 2007; Krehbiel, 2007; Moraski and Shiplan, 1999; Cameron and Kastellec, 2016). This literature paints ideology as a key component of the nominations process. Consistent with this perspective, we model ideology as a central feature of presidential and judicial decisionmaking.

Finally, our paper relates to the literature on the political economy of commitment in elections. As the judge may persist into the second period, this gives the politician a degree of commitment power. As in earlier work, commitment can moderate policies and improve voter welfare (Alesina, 1988; Besley and Coate, 1998; Duggan and Forand, 2021). Unlike these papers, the choice of judge not only commits the incumbent to a set of policies, it also constrains the challenger. To this end, our theory is related to models in which the incumbent uses government spending to influence policy choices by any future officeholder (Persson and Svensson, 1989; Alesina and Tabellini, 1990; Callander and Raiha, 2017; Foarta, 2021).

Along with various other differences stemming from our interest in judicial appointments, politicians have private information in our model. As voters face an adverse selection problem in this paper, we can shed light on how officeholders strategically combine more and less durable activities (i.e., appointments versus executive actions) to balance signaling and commitment in pursuit of their policy and electoral goals. Moreover, while previous work has noted the value of

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9Jo et al. (2017) extend these move-the-median models to include executive turnover by incorporating exogenous elections. Unlike in our setting, the outcome of the election does not depend on the executive’s choice of nominee.

10Dewan and Shepsle (2011) and Duggan and Martinelli (2017) review the role of commitment in models of elections.
commitment in elections, our judicial appointment application leads us to analyze preferences over commitment power through appointments, which we interpret as institutions (rules, norms, etc.) that influence vacancy rates.

Model

We study a two-period model featuring an incumbent, $I$; a challenger, $C$; a voter, $V$; and a continuum of potential justices.$^{11}$

In the first period, an incumbent, holds office and makes two decisions: (i) she chooses the ideal point of the first-period justice, denoted $J_1$, and (ii) she proposes a policy $x_1$ in the policy space $\mathbb{R}$. Next, $J_1$ chooses whether to strike down the policy.$^{12}$ If $x_1$ is struck down, then $J_1$ incurs a cost $\phi > 0$ but can issue a ruling that moves the first-period outcome to any policy in $\mathbb{R}$. Though stylized, this captures the notion that justices’ decisions are made with the aim of bringing outcomes in line with their policy preferences (Rohde and Spaeth, 1976, p.71). Then, $V$ observes $x_1$, $J_1$, and the ruling (if any) before choosing whether to reelect $I$ or elect the challenger, $C$.

In the second period, the winner takes office. With probability $\nu$, a judicial vacancy opens and the officeholder can choose the ideal point of the second-period justice, denoted $J_2$. Otherwise, she cannot appoint a new justice and $J_1$ persists, i.e., $J_2 = J_1$. Once the court is in place, the officeholder proposes second-period policy, $x_2$. After observing that proposal, $J_2$ chooses whether to overturn it. Subsequently, payoffs accrue and the game ends.

Each player is associated with an ideal point in the policy space. To simplify notation, throughout we will use player $i$’s identity as shorthand for their ideal point. The voter’s ideal point is common knowledge, as is the ideal point of the sitting justice in each period. In contrast, politician ideal points are private.

$^{11}$In our setting, the median voter is decisive over lotteries, see Duggan (2014). Consequently, our model does not rule out the possibility that there exist extreme voters who always prefer one candidate over the other. In this sense, $V$ can be thought of as a moderate voter.

$^{12}$In an extension, we model a court with multiple justices.

$^{13}$The cost $\phi$ captures the non-ideological features of the environment that affect the justice’s utility for hearing the case or overturning the executive’s policy. This is also consistent with existing work, which models the decision to hear and rule as a costly action (Cameron et al., 2000).
information. Informally, $V$ knows that $I$ leans right and $C$ leans left, but does not know exactly how far.\footnote{The analysis is analogous if $I < 0 < C$.} Formally, we normalize $V = 0$ without loss of generality, so that $V$ knows $I \in \{m, e\}$, where $0 < m < e$, and $V$’s commonly known prior belief places probability $p$ on $I = e$ and $1 - p$ on $I = m$. Similarly, $V$ and $I$ share the same commonly known prior belief about $C$, which puts probability $p$ on $C = -e$ and $1 - p$ on $C = -m$. Qualitatively similar results hold if the support of the type space is not extremely asymmetric, and so we opt for the simpler specification here.

In the model, the voter and justices never observe $I$’s type directly but can use observed behavior to draw inferences. Thus, the election features pure adverse selection.

In each period, player $i$’s policy utility from $x$ is $u_i(x) = -|x - i|$. To capture exogenous reelection motivations, politicians receive additive benefit $\beta \geq 0$ in each period they hold office. In period $t$, if policy $x_t$ is proposed then $J_t$ obtains utility $u_{J_t}(x_t)$ for upholding the policy and utility $-\phi$ for striking it down. Finally, to ease the presentation and analysis, we assume the cost of overturning policy is moderate, i.e., $\phi \in (m, e)$.

For each player, dynamic payoffs are the sum of utility across the two periods. To illustrate, if $I$ wins reelection when the policy outcome is $x_1$ in the first period and $x_2$ in the second period, then $I$’s payoff is

$$u_I(x_1) + \beta + u_I(x_2) + \beta.$$ 

**Analysis**

For the voter, $V$, a pure strategy is a mapping $\rho : \mathbb{R}^2 \rightarrow \{0, 1\}$ specifying whether $V$ reelects $I$ after observing a justice with ideal point $J_1$ and first-period policy $x_1$. Additionally, $V$’s belief system is represented by $\mu : \mathbb{R}^2 \rightarrow [0, 1]$, where $\mu_{J_1}^{x_1}$ denotes the probability that $V$ places on $I = e$ after observing $x_1$ and $J_1$. Next, a pure strategy for the incumbent is a mapping $\pi_I : \{m, e\} \rightarrow \mathbb{R}^4$ from $I$’s type into the set of policies and judicial ideal points in each period. Finally, the mapping $\pi_C : \{-m, -e\} \rightarrow \mathbb{R}^2$ represents a strategy for the challenger. Let $\sigma = (\rho, \pi_I, \pi_C)$.
denote a strategy profile.

We study perfect Bayesian equilibria (PBE) of the model. Formally, the assessment \((\sigma, \mu)\) must be such that (i) the strategy profile \(\sigma\) is sequentially rational given \(\mu\), and (ii) the belief system \(\mu\) is derived from \(\sigma\) via Bayes’s Rule whenever possible. Throughout, we focus on PBE satisfying \textit{equilibrium dominance} to refine away equilibria supported by unnatural off-path beliefs (Cho and Kreps, 1987). Finally, because any first-period justice does not have private information, we impose a standard “no signaling what you don’t know” refinement. Thus, \(J_1\)’s ruling does not influence the beliefs of the other players. Henceforth, \textit{equilibrium} refers to a PBE satisfying these refinements.

\section*{Second-Period Behavior}

\textit{Judicial Decision.} To begin, we characterize equilibrium rulings by the second-period judge \(J_2\). Overturning the executive’s second-period policy \(x_2\) and instead placing policy at \(J_2\) yields the judge a payoff of \(-\phi\), while upholding yields \(-|x_2 - J_2|\). Thus, in equilibrium, \(J_2\) upholds the policy if and only if \(|x_2 - J_2| \leq \phi\). Equivalently, \(x_2\) is upheld if and only if \(x_2 \in [J_2 - \phi, J_2 + \phi]\), which we refer to as \(J_2\)’s \textit{acceptance set}. This interval pins down the set of feasible second-period policies.

\textit{Policymaking \& Appointment.} Next, we describe a second-period officeholder’s behavior in equilibrium. To do so, we first define the \textit{constrained optimal policy} for politician-type \(\theta \in \{-e, -m, m, e\}\) given a judge \(J\) as

\[
x^*(\theta; J) = \arg \max_{x \in [J - \phi, J + \phi]} u_{\theta}(x).
\]

This definition also helps us characterize first-period policymaking and judicial appointments, so we will refer to (1) throughout the analysis.

In the second period, the executive’s only policymaking constraint is \(J_2\)’s acceptance set, so politician-type \(\theta \in \{-e, -m, m, e\}\) chooses second-period policy equal to \(x^*(\theta; J_2)\). With this in hand, we can characterize the executive’s choice of \(J_2\) in the event of a vacancy. Given the absence of electoral considerations, the executive simply appoints a friendly judge so that she can enact her own ideal
point. Specifically, politician-type $\theta \in \{-e, -m, m, e\}$ solves $\max_{J_2} - |x^*(\theta; J_2) - \theta|$. Thus, any $J_2 \in [\theta - \phi, \theta + \phi]$ is optimal.

**Voter Behavior**

We now study the voter’s decision between reelecting $I$ or electing $C$. Notably, $V$’s decision depends on (i) how $J_1$ constrains the candidates differently and (ii) her beliefs about each candidate’s extremism after observing $(J_1, x_1)$.

Specifically, the preceding characterization of second-period appointments and policymaking implies that $V$’s continuation value from electing $C$ is

$$U^C_V(J_1) = \nu \left( p u_V(-e) + (1 - p) u_V(-m) \right) + (1 - \nu) \left( p u_V(x^*(-e; J_1)) + (1 - p) u_V(x^*(-m; J_1)) \right),$$

(2)

which depends on $J_1$ due to constraints on second-period policy when no vacancy opens. Similarly, $V$’s continuation value from re-electing $I$ is

$$U^I_V(J_1) = \nu \left( \mu^z_{J_1} u_V(-e) + (1 - \mu^z_{J_1}) u_V(-m) \right) + (1 - \nu) \left( \mu^z_{J_1} u_V(x^*(-e; J_1)) + (1 - \mu^z_{J_1}) u_V(x^*(-m; J_1)) \right),$$

(3)

which depends on $J_1$ through (i) the constraints on second-period policy in the event of no vacancy and (ii) $V$’s updated beliefs about $I$’s type after observing $(J_1, x_1)$. Thus, the voter is willing to reelect the incumbent in equilibrium if $U^I_V \geq U^C_V$. Otherwise, the voter strictly prefers to elect the challenger.

Both (2) and (3) reveal that $V$’s continuation value from each candidate depends directly on the first-period appointment, $J_1$, because a judicial vacancy may not open in the second-period. For the rest of this section, we focus on how this constraining effect can render the appointee’s signaling effect irrelevant for $V$’s election choice. Specifically, some justices can constrain $I$ favorably enough for $V$ that her vote does not depend on her belief about $I$.

**Definition 1.** The election is safe if the voter strictly prefers one of the candidates regardless of her beliefs. Otherwise, the election is competitive.

In a competitive election, $V$’s choice depends upon her belief about $I$’s type:
she prefers to reelect $I$ if, and only if, her belief puts sufficiently high probability on $I$ being moderate. For our analysis, the key observation about competitive elections is that, under $V$’s prior beliefs, $I$ wins reelection only if $J_1 \leq 0$. This observation will have important consequences for first-period behavior.

For safe elections, we can focus on those that are safe for $I$. Proposition 1 provides several useful observations about how the vacancy rate facilitates safe elections.\(^{15}\) Let $\mathcal{J}^I$ denote the set of $J_1$ such that the election is safe for $I$, i.e., such that (4) holds given $\nu$. Additionally, let $\overline{\mathcal{J}}^I = \max J^I$.

**Proposition 1.** There exists a unique vacancy probability $\overline{\nu}^I \in (0, 1)$ such that:

(i) $\mathcal{J}^I$ is nonempty if and only if $\nu \leq \overline{\nu}^I$, and

(ii) $\mathcal{J}^I$ increases towards 0 as $\nu$ decreases over $[0, \overline{\nu}^I]$.

The first-period justice’s ideology plays a key role in whether the election is safe or competitive. A necessary and sufficient condition for the election to be safe for $I$ is that $V$ prefers to reelect a known extremist over the unknown challenger. Formally,

$$\nu u_V(e) + (1 - \nu) u_V(x^*(e; J_1)) \geq U^C_V(J_1), \tag{4}$$

where, given $J_1$, the left-hand side gives $V$’s worst-case utility from reelecting $I$ and the right-hand side gives $V$’s expected utility from electing $C$.

Why can $V$ prefer to reelect an incumbent she knows to be extremist? Given the judge’s ideological motivations, any justice who constrains $I$ more also constrains $C$ less. And if a vacancy opens in the second period, any officeholder will appoint a friendly justice and then enact her own ideal point, as shown earlier. If $J_1$ is a strong enough constraint on the incumbent, then $V$ may prefer to reelect a known extremist who might be constrained in the second period; rather than elect a challenger who may be extreme or moderate, but will certainly be less constrained.

Proposition 1 highlights that the vacancy rate, $\nu$, plays a key role in the constraining effect of $J_1$. Higher values of $\nu$ reduce the expected impact of $J_1$ on second-period policymaking because a vacancy is more likely. Consequently, $V$’s decision becomes more sensitive to her beliefs about $I$’s type and the appointment’s constraining effect has less bearing on $V$’s election decision.

\(^{15}\)In the appendix, Lemma 1 fully characterizes when elections are safe versus competitive.
Following this logic in the other direction, a lower vacancy rate facilitates safe elections by increasing the salience of the constraining effect. If a second-period vacancy is unlikely (low $\nu$), then the second-period officeholder probably will not appoint a new justice. In this case, $V$ anticipates that $J_1$ is likely to persist and also constrain second-period policymaking.

So far, we have highlighted that the vacancy rate, $\nu$, determines whether safe elections are possible. Next, we clarify which justices make the election safe for $I$. Broadly, Proposition 1 implies that only some challenger-friendly justices can make the election safe for $I$. If vacancy is unlikely and $J_1$ leans sufficiently leftward, then it is likely that the right-leaning $I$ would be constrained to moderate policy if elected but the left-leaning $C$ would be relatively unconstrained. In this case, the election is safe for $I$ because $V$ prefers a constrained extremist incumbent to a potentially moderate but less-constrained challenger.\footnote{By a parallel logic, elections can be safe for $C$. If $J_1$ leans sufficiently rightward, then $C$ is likely to be constrained in the following period but $I$ would be relatively unconstrained. And with vacancy unlikely, these constraints are likely to persist, so $V$ always prefers the relatively constrained challenger.}

We conclude this section by discussing Proposition 1(ii), which characterizes how the vacancy probability affects the scope for competitive elections in the first period. Making the vacancy less likely (decreasing $\nu$) increases the persistence of $J_1$, so $V$ is more willing to re-elect a known extremist. Thus, $J_1$ does not have to constrain $I$ as much to ensure a safe election, i.e., $\bar{J}^I$ increases towards 0 as $\nu$ decreases.

**First-period Appointments & Policymaking**

With voter behavior characterized, we now analyze first-period equilibrium behavior in appointments and policymaking. Our model highlights a dual role of appointments: signaling and constraining.

On one hand, appointments affect the voter’s evaluation of the incumbent by providing a signal of the incumbent’s ideology. On the other, appointments can directly influence the voter’s expectations about future policy by constraining the set of policies that can survive review. As highlighted by the possibility of safe elections, the constraining effect can overwhelm the signaling effect. But if $I$’s
appointee does not induce a safe election, then the information provided by I’s behavior influences V’s vote.

To facilitate the analysis, we now formally define three mutually exclusive forms of first-period behavior.

**Definition 2.** A strategy profile has:

(i) **informative appointments** if each type of I appoints a distinct $J_1 \notin J^I$;

(ii) **compromising** if both types of I appoint identical $J_1 \notin J^I$ and choose the same first-period policy; or

(iii) **tying hands** if both types of I appoint a $J_1 \in J^I$.

Our next result demonstrates that I’s equilibrium strategy must feature one of these three forms of behavior. Furthermore, we fully characterize the conditions under which each can arise in equilibrium. Under broad conditions, equilibria take one form. Under no conditions do all three forms coexist as equilibria.

**Proposition 2.** Every equilibrium features either compromising, informative appointments, or tying hands. Furthermore, there exists an equilibrium featuring:

1. compromising if and only if $\nu \geq \nu$ and $\beta \geq \beta^c$;

2. informative appointments if and only if either $\nu > \nu$ or $\beta < \beta^th$; and

3. tying hands if and only if $\nu \leq \nu$ and $\beta \geq \beta^th$.

Figure 1 provides a visual representation of this equilibrium characterization. For each form of behavior, we can immediately derive several useful observations about equilibrium behavior on the path of play.

**Compromising.** In equilibria featuring compromising, V does not update and also must reelect I, as otherwise e would behave distinctly from m. Thus, $J_1 \leq 0$ and $x_1 \leq m$. Because e constrains herself to imitate m, her electoral gain from reelection must compensate. If $\beta = \beta^c$, then e is indifferent between winning reelection after choosing $(J_1, x_1) = (0, m)$ versus her optimal losing behavior $(J_1, x_1) = (e + \phi, e)$. Increasing $\beta$ further makes e even more willing to compromise for electoral gain. The compromising equilibrium with $(J_1, x_1) = (0, m)$
Figure 1: Parameters: $e = 3$, $m = 1$, $\phi = 1.33$, $p = 0.6$
still exists but there will also be additional compromising equilibria with \( J_1 < 0 \) and \( x_1 < m \). Note, however, that \((J_1, x_1) = (0, m)\) maximizes the ex ante payoff of both incumbent types among compromising equilibria.

**Informative Appointments.** In equilibria featuring informative appointments, the election is competitive and \( V \) learns \( I \)'s type after seeing \((J_1, x_1)\). Thus, \( m \) wins but \( e \) loses. Anticipating losing, \( e \) chooses \((J_1, x_1) = (e + \phi, e)\), so that she can enact \( x_1 = e \) and also constrain any second-period officeholder to enact \( x_2 = e \) if no vacancy opens.\(^{17}\) Pinning down \( e \)'s behavior then helps us characterize \( m \)'s behavior, as she chooses an appointee and policy to make \( e \) indifferent between (i) imitating to win reelection versus (ii) choosing \((J_1, x_1) = (e + \phi, e)\) and losing. To do so, \( m \)'s appointee and policy must be skewed leftward enough to deter imitation by \( e \).\(^{18}\)

If elections are always competitive \((\nu > \nu^t)\), then an informative appointments equilibrium always exists. With low vacancy probability \((\nu \leq \nu^t)\) there are appointees who make the election safe for \( I \). Crucially, this option bounds how far \( I \) will skew her appointee in equilibrium. Since reelection is guaranteed at \( J_1 = J^t \), neither incumbent type will choose a more left-leaning appointee. If office benefit is low, i.e., \( \beta < \beta^{th}_\nu \), an informative appointments equilibrium exists because \( m \) can win reelection without skewing \( J_1 \) all the way to \( J^t \). As \( \beta \) increases, \( e \)'s incentive to win reelection also increases, so \( m \)'s choice of \( J_1 \) or \( x_1 \) must move left in an informative appointments equilibrium to decrease \( e \)'s policy payoff from imitating \( m \).

**Tying Hands.** In equilibria featuring tying hands, \( I \) appoints her friendliest “safe” judge \((J_1 = J_1)\) and chooses her constrained optimal first-period policy. Thus, \( I \)'s behavior may reveal information to \( V \) but that information does not influence the election because the appointment’s constraining effect makes it irrelevant. Of course, the possibility of a safe election is necessary for tying hands behavior in equilibrium, i.e., the vacancy rate must be low \((\nu \leq \nu^t)\). Additionally, \( e \) must be willing to select \( J_1 = J^t \) for electoral reasons, i.e., there must be high office benefit \((\beta \geq \beta^{th}_\nu)\).

\(^{17}\)As there is no way to influence what happens if a second-period vacancy *does* open, this behavior is optimal for extremist \( I \).

\(^{18}\)There can be multiple equilibrium pairs of appointee and policy for \( m \), as she can pair increasingly skewed policies with less skewed appointees.
As noted above, $m$ has no reason to skew $J_1$ past $J^I$: the voter’s expectation about the appointee’s constraint on future policy is favorable enough to ensure reelection, so there is no signaling incentive to skew $J_1$ farther left. Moreover, because the election is safe, $I$’s policy choice has no electoral consequences. Each incumbent type therefore simply chooses its constrained optimal policy. Thus, it is possible that the types choose different first-period policies, thereby providing $V$ with full information. This separation on policy does not jeopardize reelection, however, because the appointee’s commitment effect decides the election.

Compromising vs. Tying Hands. The potential coexistence of compromising equilibria and tying hands equilibria, as established by Proposition 2, hinges on whether $e$ would rather win reelection by choosing $(J_1, x_1) = (0, m)$ or instead do so with $(J_1, x_1) = (J^I, x^*(e; J^I))$. The former provides the highest possible payoff among equilibria featuring compromising, so tying hands must happen in equilibrium if $e$ prefers the latter.

If $x^*(e; J^I) < m$, then compromising equilibria exist whenever office motivation is high enough. Yet, $x^*(e; J^I)$ can shift rightward past $m$ as $\nu$ decreases because $I$ does not have to skew $J_1$ as far leftward to ensure safe reelection.\(^{19}\) Thus, $e$ faces a tradeoff when comparing compromising against tying hands, and this tradeoff favors tying hands if $\nu$ is low enough.

Essentially, tying hands provides $e$ with flexibility today, while compromising provides flexibility tomorrow. In the incumbent-optimal compromising equilibrium, $e$ enjoys a weaker constraint on future policymaking but must exercise self-restraint today to enjoy it. By instead tying hands, $e$ faces a tighter constraint tomorrow but can get away with more extreme policy today.

Electoral Outcomes

Before moving along to our analysis of polarization and voter welfare, we briefly discuss electoral outcomes. Proposition 3 characterizes how $I$’s equilibrium reelection prospects depend on $\beta$. Building on Proposition 2 and the preceding observations, we show that extremists always lose reelection if $\beta$ is low and always win if $\beta$ is high. Otherwise, either outcome is possible in equilibrium.

\(^{19}\)We formally show this in the appendix in Lemma 1(iv).
Proposition 3. (Electoral Outcomes) In equilibrium, moderate incumbents win reelection and extremist incumbents: (i) lose if $\beta < \min\{\beta^c, \beta^th\}$, (ii) win if $\beta \geq \beta^th$ and $\nu \leq \nu'$, and (iii) can otherwise win or lose.

In some cases, $I$ constrains herself to moderate policy, winning reelection regardless of her ideology. In other cases, extremist incumbents forego reelection and instead appoint an extremist justice who they hope will keep future policy in line with their preferences. More precisely, $m$ always wins reelection, but $e$’s electoral performance can vary.

In equilibrium, $I$ loses only if she is an extremist in an equilibrium featuring informative appointments. Therefore we can understand Proposition 3 simply by considering when such equilibria exist. Conditions that guarantee informative appointments also guarantee that $e$ always loses. In contrast, $e$ always wins if conditions guarantee that such equilibria do not exist. Finally, if informative appointments are possible but not guaranteed, then $e$ can win or lose, depending on the particular equilibrium being played.

The conditions on $\beta$ and $\nu$ outlined in Proposition 3 also determine equilibrium appointment and policy outcomes in the first period.\(^{20}\)

First, if $\beta < \min\{\beta^c, \beta^th\}$, the extremist is not willing to win reelection by incurring the policy cost of appointing a judge who appeals to $V$. Instead, $e$ appoints $J_1 = e + \phi$ and enacts $x_1 = e$ before losing reelection, so equilibria must feature informative appointments. Thus, $m$ need not skew $J_1$ all the way to 0 in order to deter election-seeking imitation by $e$. Consequently, $I$’s first-period appointee and policy are always right-leaning in this case.\(^{21}\)

Second, if $\beta \geq \beta^th$ and $\nu \leq \nu'$, equilibria only feature compromising or tying hands. This is because $e$ is especially keen on reelection and low $\nu$ guarantees existence of safe elections, limiting how far $m$ will skew $J_1$ leftward. Thus, the

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\(^{20}\)For our discussion of these outcomes, we focus on incumbent-optimal equilibria. If $m$ is indifferent over a range of such equilibria, then we select the one that sets $J_1$ farthest to the right. We do so because this appointee would provide the strongest constraint on $C$ and therefore $m$ would strictly prefer this appointee if there were an arbitrarily small exogenous probability that $C$ holds office in the second period.

\(^{21}\)When $\beta$ and $\nu$ are both sufficiently high $m$ may need to choose policies to the left of 0 to deter $e$. If $I$ is restricted to only choosing policies to the right of 0 then informative appointments equilibria may not exist. Instead, there would be partially-informative equilibria in which $e$ mixes over policies and $V$ mixes over reelection.
appointee is always center-left. Specifically, \( J_1 \in [-\phi, 0] \), which in turn implies that first-period policy is always center-right because \( I \)'s constrained optimal policy will be \( x_1 \in [0, \phi] \).

Finally, if neither of the above conditions holds, then equilibria featuring informative appointments exist, potentially alongside equilibria featuring compromising. Thus, the appointee can always lean either direction, as \( e \) will appoint \( J_1 \leq 0 \) or \( J_1 = e + \phi \) in equilibrium.

**Consequences of Polarization**

With equilibrium behavior characterized, we turn to consider how changes in polarization influence patterns of appointments. Does polarization lead incumbents to focus on the constraining influence of the judiciary and appoint friendly justices that enable them to implement extreme policy? Or does polarization lead incumbents to appoint moderate justices to win reelection, thereby avoiding the consequences of losing office to an extreme challenger? We show that the answer depends on precisely the source of polarization.

Within our framework, there are two natural ways in which polarization can change.

**Definition 3 (Two Sources of Polarization).** We say there is:

(i) an **increase in party extremists** if \( p \) increases, and

(ii) an **increase in ideological divergence** if \( e \) increases.

Increasing ideological divergence or party extremists increases polarization by shifting the expected ideal point of \( I \) further to the right and the expected ideal point of \( C \) left. Thus, in expectation, the parties move further away from \( V \) and from each other. However, increasing ideological divergence also increases within party polarization by increasing the difference between \( m \) and \( e \).

Proposition 4 characterizes how polarization affects first-period behavior within every equilibrium that exists in a given region of the parameter space. Moreover, it shows that these distinct forms of polarization can have opposing effects on appointments and policymaking.

**Proposition 4. (Effects of Polarization)**
1. If $\nu$ is sufficiently low and $\beta$ sufficiently high then increasing party extremists increases $J_1$ and increasing ideological divergence decreases $J_1$.

2. If $\nu$ is sufficiently high then increasing always decreases $J_1$, regardless of the source.

Broadly, Proposition 4 shows that the consequences of polarization depend on its source, as well as political conditions.

To clarify why these differences exist, we first discuss the effect of polarization in each type of equilibrium. After doing so, we can then characterize how polarization affects first-period behavior because (i) polarization does not affect first-period behavior in compromising equilibria, (ii) informative appointments and tying hands are mutually exclusive and mutually exhaustive.

First, polarization does not affect incumbent behavior in equilibria featuring compromising. Because $I$’s first-period behavior does not vary by type, such equilibria are sustained by $V$’s off-path beliefs, as is typical in pooling equilibria. Thus, first-period behavior is not sensitive to relatively small changes in either form of polarization.

In contrast, polarization does affect first-period behavior in equilibria featuring informative appointments or tying hands. Furthermore, the effects of polarization can vary depending on the type of the incumbent, the source of polarization, the value of office, and the vacancy rate. What accounts for this variation? The distinguishing factor is whether polarization affects equilibrium through $V$’s incentives or $I$’s incentives. Below we discuss this distinction in greater detail, considering informative appointments and tying hands equilibria in turn.

In equilibria featuring informative appointments, polarization crucially increases $I$’s value for winning reelection and preventing the challenger from holding office. This change incentivizes $I$ to shift first-period appointees and policy weakly leftward. More precisely, $m$’s first-period behavior is pinned down by $e$’s desire to mimic, which grows with $e$’s value of office. Polarization affects this value endogenously by altering $e$’s continuation value from being replaced by $C$: as polarization increases, regardless of how it is measured, losing reelection gets worse for $e$ and mimicking $m$ gets more attractive. In turn, $m$ must skew her appointee and/or policy relatively further leftwards to deter imitation. When polarization increases
through party extremists this always results in appointees with ideologies further to the left. If polarization increases through ideological divergence, then the direct effect of increasing \( e \) pushes the extremist’s appointee to the right, additionally, \( m \)'s choice of judge may move right or left. However, due to the previously discussed forces, the appointee’s ideal point always moves (weakly) further away from \( e \).

In equilibria featuring tying hands, however, polarization crucially alters \( V \)'s comparison between \( I \) and \( C \). More precisely, \( I \)'s first-period behavior is pinned down by the voter’s comparison between the expected challenger versus the worst-case incumbent because it determines \( \overline{J}' \), the rightmost justice who makes \( V \) indifferent between these two options. Because tying hands implies \( J_1 = \overline{J}' \), the consequences of polarization flow through the effect on this comparison for \( V \).

In this case, the exact variety of polarization becomes more important. Under informative appointments, both forms of polarization had a similar effect on incentives. With tying hands, however, the two forms of polarization have opposing effects. First, increasing \( p \) makes the expected challenger worse, but does not affect the worst-case incumbent. This change makes \( V \) more inclined towards safe election, so \( J_1 \) increases towards 0 and therefore \( J_1 \) and \( x_1 \) shift rightward. Second, greater extremist divergence worsens both the expected challenger and the worst-case incumbent. The effect on \( C \) is weaker, however, because it is diluted by the probability of being moderate. Consequently, \( V \) becomes more concerned about the worst-case incumbent and is less inclined towards safe election. This effect exerts a leftward force on \( \overline{J}' \), but the direct impact of shifting \( e \) to the right can result in a \( J_1 \) that is further right.

**Institutional Design**

Thus far, we have treated the vacancy rate \( \nu \) as an exogenous feature of the environment. However, there are institutional reforms that could alter the vacancy rate. For example, implementing a mandatory retirement age for judges would generate more turnover on the court and increase the probability the executive is able to make an appointment.

Our next result considers (i) the effect of \( \nu \) on voter welfare and (ii) how the welfare-maximizing \( \nu \) changes with polarization. In order to determine the highest
obtainable level of voter welfare, if multiple equilibria exist we select the one that maximizes voter welfare.

**Proposition 5.** Assume $\beta$ sufficiently high.

1. The optimal probability of judicial vacancy is given by $\nu^* \in (0, \nu^I]$.
2. Increasing party extremists increases the optimal vacancy rate.
3. Greater ideological divergence decreases the optimal vacancy rate.

This result highlights the important role that the durability of judicial appointments plays in determining voter welfare. An important factor driving the result is that voter welfare is maximized in a tying hands equilibrium. Recall that increasing $\nu$ moves $\mathcal{I}^*$ to the left, which pulls the $I$’s first-period policy toward $V$. Thus, the optimal level of turnover must balance better first-period outcomes against increasing the probability of a worse second-period outcome. This tradeoff yields that the optimal vacancy rate is also bound away from 0: if vacancies are too unlikely then the judge appointed in equilibrium does not sufficiently constrain the incumbent’s policy choice. Additionally, the optimal level of turnover on the court is bounded away from 1. As such, durable appointments pave the way for moderation, enhancing voter welfare in the process.

The voter condition that determines the incumbent safe region plays an important role in the optimal vacancy rate. Consequently, both measures of polarization impact the optimal level of turnover. As discussed earlier, greater ideological divergence makes the voter relatively more concerned about an extremist incumbent than an unknown challenger, while an increase in party extremists makes the voter relatively more wary of the challenger than a known extremist. Correspondingly, if $e$ increases then the optimal turnover rate decreases, while if $p$ increases then the optimal turnover rate decreases.

The relationship between durability of appointments is relevant both to concerns over the counter-majoritarian nature of the court, as well as recent calls for reform. We discuss each of these issues further in the following section.
Discussion

We now turn to a broader discussion of our results. We first discuss the so-called counter-majoritarian difficulty. Our findings suggest that whether appointments solve this difficulty is ambiguous, and depends on the strength of electoral accountability. Second, we turn to institutional design, discussing proposed reforms to Supreme Court selection in the context of our model. In particular, our findings are broadly consistent with calls for regularized turnover on the court. Finally, we discuss an empirical upshot of our findings, pointing out some empirical patterns consistent with our model that are not well explained by existing theory. In each case, we highlight the important role that polarization plays in connecting our findings to broader topics in judicial politics and the study of electoral accountability.

Appointments and the Counter-majoritarian Difficulty

As Supreme Court justices are not held directly accountable to the public, the court may rule against policies favored by a majority of citizens. Bickel (1986) termed this the “counter-majoritarian difficulty,” that judges are not precluded from overturning policy favored by the voters. However, this view of the court as an anti-majoritarian institution focuses on the behavior of the court holding its composition fixed. By design, voters hold no formal sanctioning mechanism to discipline the behavior of the judiciary. However, as our analysis highlights, if executives appoint justices then voters have an indirect influence over judicial decisionmaking through their influence on disciplining the appointment decisions of the executive.

Our theory suggests that electoral accountability is necessary to alleviate the counter-majoritarian difficulty. Electoral accountability creates an incentive for appointment of moderate justices that align with voter preferences. This behavior occurs in both tying hands and compromising equilibria. The possibility that elections might create incentives for moderate appointments has been previously raised by legal scholars (e.g., Eisgruber, 2009). Importantly, our formal analysis highlights the durability of judicial appointments as key to ensuring moderation. If appointments are durable, corresponding to low values of $\nu$ in our model, a tying
hands equilibrium exists. In this equilibrium, electoral accountability operates as a force for moderation: incumbents use their appointment to commit to moderate policy, winning reelection.

According to historical accounts, this logic prevailed in President Eisenhower’s appointment of Justice Brennan to the Supreme Court in 1956. Concerned with the upcoming election, Eisenhower wanted to appoint a Democrat to the court in order to appeal to voters and appear less partisan (Yalof, 2001, p. 56). As such, electoral concerns moderated the choice of justice, potentially mitigating the counter-majoritarian difficulty. On the other hand, after winning reelection Eisenhower switched gears and sought to nominate moderate-conservative Republicans for new vacancies, ultimately yielding Justices Whitaker and Stewart (Yalof, 2001, p. 61). Consequently, Eisenhower’s lack of electoral concerns in his second term may have exacerbated the counter-majoritarian difficulty.

Consistent with the change in Eisenhower’s calculus once electoral considerations were no longer relevant, we also find that the counter-majoritarian difficulty may be a serious concern if electoral accountability does not operate. If office benefit is low or if vacancies on the court are too frequent, incumbents are unable or unwilling to use their appointment power to secure reelection in equilibrium. Under these conditions, informative appointments equilibrium prevails. In such an equilibrium, extremist politicians forego reelection, abandoning the electorate’s wishes to appoint an extremist justice that will constrain the policy of their successor. Further, when office benefit is low, moderates move farther from the voter than they would otherwise, appointing center-right justices.

Which of these situations prevails more often? Previous empirical work suggests that there may be reason for optimism. Indeed, a large body of work suggests that the counter-majoritarian difficulty may not be relevant in practice. Overall, the Supreme Court seems to issue rulings that align with the preferences of voters. This phenomenon has been documented extensively in the existing literature (see, e.g., Dahl, 1957; McGuire and Stimson, 2004). Our findings provide a partial explanation for this finding; by encouraging incumbent politicians to cater to voters by selecting centrist nominees, electoral accountability may alleviate the counter-majoritarian difficulty.

Electoral concerns also motivated Eisenhower to appoint a Catholic justice.
Reforming the Supreme Court

On April 9, 2021 President Joe Biden issued an executive order announcing the formation of the Presidential Commission on the Supreme Court of the United States. The commission’s stated purpose is to “provide an analysis of the principal arguments in the contemporary public debate for and against Supreme Court reform, including an appraisal of the merits and legality of particular reform proposals.”

The formation of this commission follows a broader pattern of continued debate about the merits of such reforms. Proposals include term-limits, expanding the court, and mandatory retirement ages. Importantly, nearly all of these calls for reform seek to alter the rate of turnover among the court’s membership. Indeed, the U.S. is unique in allowing for lifetime appointments to its highest court (Calabresi and Lindgren, 2005). As polarization has increased the stakes and salience of such appointments, it is important to understand how such reforms would alter the incentives of politicians, voters, and the court.

Calabresi and Lindgren provide a well-reasoned and representative example of such a call for reform. Proposing a system that would regularize the process of appointments through imposition of staggered 18-year term limits, Calabresi and Lindgren argue that this increase in turnover would enhance public welfare. Key to their argument is the notion that life tenure for supreme court justices is at odds with core values of representative democracy. Regularized turnover resulting from term limits, in their view, would alleviate this concern.

We do not model these reforms explicitly, but our model provides a framework to systematically assess proposals that focus on the importance of turnover. Recall that the parameter $\nu$ captures the probability of a vacancy on the court in our model. Thus, it represents the durability of a President’s nominee in reduced form. Our findings are broadly consistent with the beneficial effects of turnover. Indeed, Proposition 5 demonstrates that the optimal value of $\nu$ is strictly greater than 0. However, our findings also suggest reason for pause; while turnover may be beneficial, too much turnover can undermine voter welfare.

Proposition 5 also speaks directly to the risks of increasing turnover too much.

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Specifically, we find that the optimal value of $\nu$ is bounded above by $\nu^I$. This suggests reason for caution in reforming the court to increase turnover. Why is this? Our equilibrium analysis suggests that increases in turnover are not a panacea. Rather, durable appointments can provide an incentive for extremist politicians to tie their hands, committing to moderate policies that would otherwise be impossible to commit to. If appointments are not durable, this kind of commitment is not possible, as the voter knows that any appointment in the present is likely to be undone in the future. This, in turn, undermines the role of electoral accountability in creating incentives for moderate appointments.

Different proposed reforms to the court would induce different levels of turnover. As such, the tradeoffs analyzed here provide insight into the costs and benefits of specific reforms. For example, many have suggested expanding the size of the Supreme Court. Such a change would give the president significant latitude to alter the ideological makeup of the court, corresponding to high vacancy, especially if such a change leads future presidents continue to expand the court (see Chilton et al., 2021). Proposition 5 suggests that such reforms may go too far, impeding the use of the judicial appointments as a credible commitment device. As mentioned, an alternative to court packing is the imposition of term limits for members of the Supreme Court. Our analysis suggests that term limits are likely preferable to court expansion. As Proposition 5 indicates, the optimal level of turnover on the court lies in an intermediate range. Term limits, if chosen carefully, may allow for such an intermediate level of turnover on the court. However, the optimal length of term limits - and the corresponding rapidity of turnover on the court - depends importantly on polarization.

Our findings speak directly to this concern. We find that the optimal level of turnover on the court depends on whether polarization is the result of an increase in the proportion of party extremists or a rise in ideological divergence. If polarization is a result of an increase in party extremists, then increasing the rate of turnover on the court is beneficial for voter welfare. On the contrary, if polarization is a result of an increase in ideological divergence then decreasing the rate of turnover may be beneficial for voter welfare.

24 In practice, the level of turnover induced will depend on the exact form of the term limits. Chilton et al. (Forthcoming) compares the impact of different term limit proposals on the composition of the Court.
Empirical Patterns of Appointments

Our findings also build on existing work evaluating the empirical performance of so-called move-the-median (MTM) theories of presidential decisionmaking in supreme court nominations. This body of theoretical work focuses on how Presidential nominations to the Supreme Court are constrained by Senate confirmation votes (Rohde and Shepsle, 2007; Krehbiel, 2007; Moraski and Shipan, 1999; Cameron and Kastellec, 2016). Though these studies all posit that Presidential decisions are driven by the desire to alter (or preserve) the ideology of the court’s median, they differ in the degree to which Presidents also use nominations for position-taking, placing inherent value on a nominee’s ideology even if it does not alter the location of the court’s median. Cameron and Kastellec (2016) unify these variants, presenting a generalized MTM framework to determine which theoretical predictions hold robustly across all variants of the theory.

Cameron and Kastellec find an important discrepancy between these robust predictions and the empirical record: nominations that move the court’s median away from the President’s ideal point. Under any specification of MTM theory, Presidents only ever nominate justices that move the median weakly toward their own ideal point. In contrast to this robust theoretical expectation, Cameron and Kastellec find that 15% of appointments constitute own goals, moving the court’s median farther from the President’s ideal point. What might account for this? One possibility is that important forces that shape Presidential decisionmaking are absent from the MTM framework.

By modeling the role of electoral accountability in the context of Supreme Court nominations, we have studied one such force. In MTM models, the only check on Presidential decision-making arises from the process of Senate confirmation votes. Consequently, Presidents can always win approval by nominating a justice that maintains the court’s previous median. As the President’s utility is only determined by the ideological composition of the court, Presidents always move the court median (weakly) towards their ideal point. In contrast, the nominating President in our model values both the ideological composition of the court due to its effect on policy and the benefits of office, which they enjoy only if they win reelection. The second incentive is key. Because the incumbent’s ideology is unknown in our model, winning reelection may require a President to nominate a
justice that is far from their own ideological location.

The previously discussed appointment of Justice Brennan by President Eisenhower further suggests that the mechanism behind these own goals is the electoral constraint. Indeed, the Brennan appointment appears in Cameron and Kastellec (2016) as one of the more egregious examples of an own goal. Additionally, both of Eisenhower’s second term appointments are measured as being ideologically closer to Eisenhower. Although the existence of multiple equilibria makes precise empirical predictions difficult, this example demonstrates that the electoral forces driving moderation in our model also drive presidential decisionmaking on appointments.

Our findings also provide insight into changes in patterns of own goals over time. Cameron and Kastellec find that these unexpected nominations are not distributed evenly across time. Rather, they all occurred during the Roosevelt, Truman, and Eisenhower administrations. This decline corresponds with another major change in U.S. politics during this time period: an increase in ideological polarization. Our model suggests that these patterns may be connected. When ideological divergence is small a tying hands equilibrium always exists if office benefit is large, i.e., if \( e \rightarrow m \) then \( v^I \rightarrow 1 \). However, when ideological divergence becomes large the tying hands region disappears completely, i.e., if \( e \rightarrow \infty \) then \( v^I \rightarrow 0 \). Thus, a large increase in polarization transitions us from a world of moderate appointments to one in which appointments can be extremist. Though this is simply suggestive evidence of the mechanisms indicated by the model, it does suggest that further evaluation of our framework against the empirical record is a worthwhile avenue for future work.

Though our model rationalizes behavior left unexplained by MTM theories, it does not invalidate the important insights delivered by previous work. MTM models provide a parsiminous framework that does describe many patterns of both nomination and confirmation behavior. Just as MTM models abstract away from the influence of electoral accountability, our framework abstracts away from Senate confirmation votes. In reality, both forces are likely important for Presidential decisionmaking. Accordingly, we view our analysis as complementary, contributing to an ongoing modeling dialogue between theory and empirics (Myerson, 1992).
Extension: Appointments to Move the Median

Thus far, we have assumed that the appointed justice is decisive in determining the court’s review of executive policy. However, in practice, the executive’s appointment is just one member of an already existing court. Consequently, even when the executive can appoint a new justice, the impact of this appointment depends on the ideologies of the existing members of the court. In this section, we account for these constraints by assuming the court is composed of multiple judges and it is the median justice who determines whether the executive’s policy is upheld. As discussed in the previous section, such “move-the-median” games are commonly used to model Supreme Court appointments.

We extend the model by assuming that at the start of the game there are four existing justices. Two left-leaning justices, with ideal points $L_1$ and $L_2$, and two right-leaning justices, with ideal points $R_1$ and $R_2$. We assume the following ordering on ideal points: $-e < L_2 < L_1 < -m < 0 < m < R_1 < R_2 < e$. Thus, the justices are more extreme than the moderate types, but less extreme than the extremist types.

As before, in the first period $I$ appoints a judge with ideal point $J_1 \in \mathbb{R}$ and chooses a policy $x_1$. However, now the policy remains in place only when a majority of the members of the court vote to uphold it. If a majority vote to strike down the policy, then we assume the first-period policy outcome is the ideal point of the median justice.\footnote{This decision can be microfounded by assuming that, when the policy is struck down, the final ruling is determined by a dynamic bargaining game between the justices, see Cho and Duggan (2009).} Thus, the policy is upheld if and only if the median of the court prefers the new policy over incurring the cost $\phi$ to get the median’s ideal point.

Incorporating multiple justices also affects how appointments work in the second period. We assume the players anticipate which justice will be replaced next, but do not know for certain that the justice will leave. Denote by $\omega \in \{L_1, L_2, R_1, R_2\}$ the justice who may be replaced in the second period. We assume that with probability $\nu$ justice $\omega$ leaves, in which case the second-period politician appoints a new judge $J_2$ to the court. Otherwise, with probability $1 - \nu$ there is not a vacancy and the court’s composition remains the same. Next, the executive chooses a second-period policy. As in the first period, this is only upheld if a ma-
majority of the court vote in favor. If it is struck down, the new policy outcome is at
the ideal point of the median justice.

This extension provides three insights that dovetail with the results from the
baseline model.

First, the multi-member nature of the court creates a more nuanced relationship
between vacancy, appointments, and electoral outcomes. In particular, the location
of a vacancy is an important determining factor for the safety of elections. If a
vacancy is likely to arise from the opposite side of $I$, with either $L_1$ or $L_2$ requiring
replacement, then elections are similar to the baseline model; if $\nu$ is sufficiently
low, then it is possible for $I$ to choose a justice that guarantees reelection for any
belief of $V$. However, if a vacancy arises from the same side of $I$, with either $R_1$
or $R_2$’s seat becoming vacant, it becomes easier for $I$ to achieve safety than in
the baseline model. In this case, there exists a range of justices that guarantee
reelection for any value of $\nu$.

**Proposition 6.** For any $\nu$, the set of incumbent-safe appointees when there may
be a left-leaning vacancy is a subset of the set of incumbent-safe appointees when
there may be a right-leaning vacancy.

What accounts for this result? The important factor is how the location of a
vacancy constrains the movement of the court’s median. In the baseline model, a
vacancy in the second period provides a second-period politician with free reign
to move the court’s ideological position. Consequently, vacancies allow a second-
period politician to enact any policy. In the extension this is no longer true, as
appointments only affect constraints on policy if they change the court’s median.
The location of a vacancy determines the “pivots” between which a new median
must lie. Consequently, a vacancy’s location constrains the set of policies that
can be enacted after the vacant seat is filled. Importantly, these constraints are
consequential for the safety of elections.

When a vacancy comes from the left-leaning justice, opposite $I$, these con-
straints shift to the right, allowing $I$ to move the median of the court close to her
own ideal point following a second-period vacancy. As in the baseline model, this
makes $I$ less attractive when a vacancy is likely. As indicated in the proposition,
when $\nu$ is sufficiently high, safe elections are not possible if a vacancy is expected
to occur from the left. In contrast, when a vacancy comes from a right-leaning
justice, the possible locations of a new median justice shift leftward, away from $I$. This improves $V$’s evaluation of $I$, as the leftward movement of the court median prevents $I$ from implementing extreme policy following a second-period vacancy. In contrast to the baseline model, this force facilitates incumbent-safe elections even for very high values of $\nu$.

Our second insight is that the choice of $J_1$ affects the set of policies that are upheld in the second period and where the second-period executive can move the median justice in the event of a vacancy. This contrasts with the baseline model, in which the only potential second-period effect of $J_1$ is constraining policy. In this extension, $J_1$ can also constrain the location of the second-period median by determining the pivots. To highlight this incentive, consider $I$’s expected utility from a challenger when choosing a justice with ideal point $J_1 \in [L_2, L_1]$ and the judge at risk of leaving in period 2 is $\omega \in \{L_1, R_1, R_2\}$:

$$\nu \left( p u_I(x^*_{-e}(J_1)) + (1 - p) u_I(-m) \right) + (1 - \nu) \left( p u_I(x^*_{-e}(L_1)) + (1 - p) u_I(-m) \right).$$

In this range of judicial ideologies, $I$’s choice of $J_1$ only affects outcomes when a vacancy occurs. This contrasts with the original model in which the choice of judge only affects second-period outcomes when there is not a vacancy.

**Figure 2: $I$’s Expected Utility of a Challenger**

![Figure 2](image)

Figure 2 depicts $I$’s expected utility for a challenger as a function of the first-period appointee $J_1$ if a right-leaning justice may leave. The solid line considers the case where $\nu = 1$, while the dotted line is the case where $\nu = 0$.

Figure 2 further explores this contrast. The red line shows the $I$’s expected utility from a challenger as a function of $J_1$ when $\nu = 1$, and the dashed blue line characterizes this expected utility when $\nu = 0$. Thus, the red line captures $I$’s incentive to constrain $C$’s scope to change the median justice. On the other hand,
the blue line captures $I$’s incentive to constrain $C$’s policy choices. We see that the first effect explains why $I$ wants to appoint a judge further to the right in the region $[L_2, L_1]$, while the second effect explains why $I$ wants to move the judge to the right over the region $[L_1, R_1]$.

Finally, in considering the move-the-median structure of the court, we find that the informativeness of equilibrium appointments may be limited. The following result formalizes this.

**Proposition 7.** *If office benefit is sufficiently high, a fully informative equilibrium does not exist.*

In the baseline model, fully informative equilibria exist whenever tying hands equilibria do not. In contrast, in the extended model, high office benefit alone is sufficient to eliminate fully informative equilibria. What accounts for this difference? The crucial factor is how the move-the-median structure of appointments in the extended model constrains $I$’s ability to move the position of the court. In the baseline model, a fully informative equilibrium requires that extremist incumbents are unwilling to mimic moderates for electoral gain by appointing the same justice. Accordingly, moderate types must appoint a justice sufficiently far leftward to avoid imitation by extremists. As office benefit increases, making mimicking more attracting to the extremist, the moderate’s appointment moves farther leftward to prevent the extremist from deviating.

In the baseline model, the moderate always can deter imitation by shifting $J_1$ sufficiently leftward. In the extended model, however, avoiding imitation is not always possible. This is because the move-the-median structure of appointments in the extended model constrains the moderate’s ability to move the ideological position of the court. As office benefit increases, it eventually reaches a level beyond which the moderate cannot deter imitation by shifting $J_1$ further leftward due to the ideologies of existing justices. As such, the moderate is then unable to prevent the extremist from deviating, and a fully informative equilibrium cannot be sustained as in the baseline model. Rather, equilibria in this case are only partially informative, and involve mixed strategies by the extremist and $V$. 
Conclusion

We began by asking how electoral considerations influence Supreme Court appointments, and how those appointments influence elections. To study this important relationship, we developed a model of judicial appointments in the shadow of electoral accountability. We showed that electoral and judicial constraints interact to create rich strategic considerations. In particular, the logic of our model highlighted an important dual role of appointments: signaling and constraining. Thus, the key strategic dynamics in our model arise out of the executive’s ability to endogenously manipulate the salience of voter beliefs. In some cases, appointments signal the executive’s type, and voters rely on their updated assessment of the incumbent when they arrive at the ballot box. In other cases, the executive uses appointments to commit to courses of future policy, nullifying voter fears about extremism and rendering their beliefs irrelevant for voting decisions.

By studying these mechanics, our analysis delivered three substantive findings. First, appointments can solve the “counter-majoritarian difficulty,” but otherwise they make it even worse. Second, policy reforms that increase turnover on the court, e.g., judicial term limits, can backfire and reduce voter welfare. Third, accounting for electoral constraints produces equilibrium behavior consistent with patterns of judicial appointments.

Our findings also point to avenues for further research. As discussed above, our analysis provides insight into some empirical patterns that are not well explained by existing work focused on the constraints imposed by Senate confirmation. As such, our findings underscore the importance of electoral forces in shaping appointment outcomes. However, both forces are important drivers of behavior. Unifying these perspectives both theoretically and empirically is a promising avenue for future work. Additionally, our results emphasized the importance of the source of polarization in the context of elections and judicial appointments. This underscores the importance of a continuing dialogue between theory and empirics. By formally defining and tracing the consequences of multiple sources of polarization, our work highlights the importance of continuing to develop nuanced measures of polarization.
A Appendix

If the election is safe for $C$, then $V$ prefers to elect the unknown challenger over her favorite type of incumbent, i.e.,

$$\nu u_V(m) + (1 - \nu) u_V(x^*_2(m; J_1)) \leq U^C_V(J_1).$$

We now present an expanded version of Proposition 1.

Proposition 1

In equilibrium,

(i) for each politician $i \in \{I, C\}$, there is a threshold $\overline{\nu}_i \in (0, 1)$ on the probability of judicial vacancy such that $J^i$ is nonempty if and only if $\nu \leq \overline{\nu}_i$;

(ii) if $\nu \leq \overline{\nu}_I$, then $J^I \subseteq [-e - \phi, 0)$ is the union of two compact intervals;

(iii) if $\nu \leq \overline{\nu}_C$, then $J^C = [J^C, \overline{J}^C] \subseteq (\phi - m, \phi + m]$; and

(iv) if $\nu$ increases, then $J^i$ decreases and $\overline{J}^i$ increases for each $i \in \{I, C\}$.

Proof of Proposition 1

We prove Proposition 1 in three steps. First, Lemma A.1 characterizes when the election is safe for $C$. Second, Lemmas A.2 and A.3 characterize when the election is safe for $I$. Finally, Lemma A.4 characterizes the vacancy probability ($\nu$) affects the conditions producing safe elections.

**Step 1.** To begin, we characterize the conditions under which the election is safe for $C$. Let

$$J^C = \left[ \phi - \frac{m - \nu(pe + (1 - p)m)}{1 - \nu}, \phi + \frac{m - \nu(pe + (1 - p)m)}{1 - \nu} \right].$$

**Lemma A.1.** The voter prefers to elect $C$ over a known moderate incumbent if and only if $J_1 \in J^C$. Furthermore, $J^C \subseteq (\phi - m, \phi + m]$. 

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Proof. If $V$'s beliefs place probability one on $I$'s type being $\theta_I = m$, then she prefers to elect $C$ if and only if

$$-\nu(pe + (1-p)m) - (1-\nu)|J_1 - \phi| \geq -m.$$ (7)

Rearranging, (7) holds if and only if $J_1 \in J^I$. Note that the interval $J^C_1 = [J^C, J^C]$ is non-empty if and only if $\nu \leq \frac{m}{pe+(1-p)m} \equiv \nu^C < 1$. Moreover, $\phi - m \leq J^C$ and $J^C \leq \phi + m$ by $m > \frac{m-\nu(pe+(1-p)m)}{1-\nu}$. \hspace{1cm} \Box

Step 2. Next, we characterize the conditions under which $V$ prefers to reelect a known extremist incumbent. To do so, we first define the following terms:

$$\gamma_1 = -\phi - \frac{(1-p)m + (p-\nu)e}{1-\nu};$$
$$\gamma_1 = -\phi + \frac{(1-p)m + (p-\nu)e}{1-\nu};$$
$$\gamma_2 = \left(\frac{1-p}{1+p}\right)\left(-\phi - \frac{m-\nu e}{1-\nu}\right);$$
$$\gamma_2 = \left(\frac{1-p}{1+p}\right)\left(-\phi + \frac{m-\nu e}{1-\nu}\right).$$

With these in hand, let

$$J^I = \left[\gamma_1, \min\{\gamma_1, \phi - e\}\right] \cup \left[\max\{\phi - e, \gamma_2\}, \gamma_2\right].$$ (8)

Lemma A.2. The voter prefers to reelect a known extremist incumbent if and only if $J_1 \in J^I$. Furthermore, $J^I \subseteq [-e - \phi, 0)$.

Proof. If $V$'s belief places probability one on $\theta_I = e$, then $V$ prefers to reelect $I$ if and only if

$$-\nu e - (1-\nu)|J_1 + \phi| \geq p(-\nu e - (1-\nu)\max\{e, J_1 - \phi\}) - (1-p)m.$$ (9)

We will show that (9) holds if and only if $J_1 \in J^I$. There are two cases, which are distinguished by $\max\{-e, J_1 - \phi\}$, as this value determines the set of $J_1$ for which (9) holds. Qualitatively, the cases determine whether an extremist challenger is constrained by the location of $J_1$. 34
Case 1: Suppose \(-e \geq J_1 - \phi\). Equivalently, \(J_1 \leq \phi - e < 0\). In this case, (9) holds if and only if

\[
J_1 \in \left[ -\phi - \frac{(1-p)m + (p-\nu)e}{1-\nu}, -\phi + \frac{(1-p)m + (p-\nu)e}{1-\nu} \right] = [\gamma_1, \bar{\gamma}_1] \equiv \Gamma_1.
\] (10)

Because \(J_1 \leq \phi - e\), the voter always reelects \(I\) if and only if \(J_1 \in [\gamma_1, \min\{\gamma_1, \phi - e\}]\), which is equivalent to the first interval in (8). Note that \(\gamma_1 < \gamma_1\) if

\[
\nu \leq \frac{pe + (1-p)m}{e}.
\] (11)

Differentiating \(\gamma_1\) and \(\bar{\gamma}_1\) with respect to \(\nu\), we have

\[
\frac{\partial \gamma_1}{\partial \nu} = - \frac{(1-p)(e-m)}{(1-\nu)^2} < 0,
\] (12)

and

\[
\frac{\partial \bar{\gamma}_1}{\partial \nu} = \frac{(1-p)(e-m)}{(1-\nu)^2} > 0.
\] (13)

Case 2: Suppose \(-e < J_1 - \phi\). Equivalently, \(\phi - e \leq J_1\). In this case, (9) holds if and only if

\[
\frac{(1-p)(m-\nu e) + p(1-\nu)\phi}{1-\nu} \geq |J_1 + \phi| + pJ_1,
\] (14)

which is equivalent to

\[
J \in \left[ \left(1-p\right)\left(-\phi - \frac{m-\nu e}{1-\nu}\right), \left(1-p\right)\left(-\phi + \frac{m-\nu e}{1-\nu}\right) \right] = [\gamma_2, \bar{\gamma}_2] \equiv \Gamma_2.
\] (15)

For \(J_1 \geq \phi - e\), the voter always reelects \(I\) if and only if \(J_1 \in [\max\{\gamma_2, \phi - e\}, \bar{\gamma}_2]\), which is equivalent to the second interval in (8). Note that \(\gamma_2 < \gamma_2\) if

\[
\nu \leq \frac{m}{e}.
\] (16)
Differentiating $\gamma_2$ and $\gamma_2$, we have
\[
\frac{\partial \gamma_2}{\partial \nu} = -\left(\frac{1-p}{1+p}\right) \frac{e-m}{(1-\nu)^2} < 0,
\tag{17}
\]
and
\[
\frac{\partial \gamma_2}{\partial \nu} = -\frac{e-m}{(1-\nu)^2} > 0. \tag{18}
\]

We have shown that the set of $J_1$ such that the voter always reelects $I$ is equivalent to $\mathcal{J}^I$ as defined in (8).

To complete Step 2, we show existence of $\nu^I \in (0, 1)$ such that $\mathcal{J}^I \neq \emptyset$ if and only if $\nu \leq \nu^I$. To begin, let:
\[
\nu_1 = \frac{pe + (1-p)m}{e}, \tag{19}
\]
\[
\nu_2 = \frac{m}{e}, \tag{20}
\]
\[
\nu_3 = \frac{2\phi - (1-p)(e-m)}{2\phi}, \tag{21}
\]
\[
\nu_4 = \frac{(1+p)e + (1-p)m - 2\phi}{2(e-\phi)}. \tag{22}
\]

Before proceeding, we collect several useful observations about the cutpoints above:

• $\nu_j < 1$ for $j = 1, 2, 3, 4$;
• $\gamma_1 \leq \nu_1$ if and only if $\nu \leq \nu_1$;
• $\gamma_2 \leq \nu_2$ if and only if $\nu \leq \nu_2$;
• for $\phi < \frac{e}{2}$, we have $\gamma_1 \leq \phi - e$ if and only if $\nu \leq \nu_3$;
• for $\phi > \frac{e}{2}$, we have $\gamma_1 \leq \phi - e$ if and only if $\nu > \nu_4$;
• for $\phi > \frac{e}{1+p}$, we have $\gamma_2 < \phi - e$ if and only if $\nu > \nu_4$. 

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Finally, define
\[
\nu^I = \begin{cases} 
\nu_2 & \text{if } \phi < \frac{(1-p)e}{2}, \\
\nu_3 & \text{if } \phi \in \left(\frac{(1-p)e}{2}, \frac{e}{2}\right), \\
\nu_1 & \text{if } \phi \geq \frac{e}{2}.
\end{cases}
\]

**Lemma A.3.** The set \( J^I \) is non-empty if and only if \( \nu \leq \nu^I \).

**Proof.** To show the result, we consider four cases that partition the possible costs of overturning, \( \phi \).

**Case 1.** Assume \( \phi < \frac{(1-p)e}{2} \). Thus, \( \nu_3 < \nu_2 = \nu^I \). Also, note that \( \phi < \frac{e}{2} < \frac{e}{1+p} \). There are three subcases.

(a) Consider \( \nu > \nu_2 \). Then \( \gamma_2 > \gamma_2 \) and \( \gamma_1 > \phi - e \), so \( J^I = \emptyset \).

(b) Consider \( \nu \in (\nu_3, \nu_2) \). Then \( \gamma_2 > \max\{\phi - e, \gamma_2\} \) and \( \gamma_1 > \phi - e \), so \( J^I = [\max\{\phi - e, \gamma_2\}, \gamma_2] \) is nonempty.

(c) Consider \( \nu < \nu_3 \). Because \( \nu < \nu_3 < \nu_2 \) and \( \phi < \frac{e}{2} \), both intervals in \( J^I = [\gamma_1, \phi - e] \cup [\max\{\phi - e, \gamma_2\}, \gamma_2] \) are nonempty.

**Case 2.** Assume \( \phi \in \left(\frac{(1-p)e}{2}, \frac{e}{2}\right) \). As in case 1, we have \( \phi < \frac{e}{2} < \frac{e}{1+p} \). Unlike case 1, however, we now have \( \nu_2 < \nu_3 = \nu^I \). There are three subcases.

(a) Consider \( \nu > \nu_3 \). Then \( J^I = \emptyset \) because \( \gamma_2 > \gamma_2 \) and \( \gamma_1 > \phi - e \).

(b) Consider \( \nu \in (\nu_2, \nu_3) \). Because \( \phi < \frac{e}{2} \), we have \( \nu_3 < \nu_1 \). It follows that \( \gamma_2 > \gamma_2 \) and \( \gamma_1 \leq \min\{\gamma_1, \phi - e\} \), so \( J^I = [\gamma_1, \min\{\gamma_1, \phi - e\}] \) is nonempty.

(c) Consider \( \nu < \nu_2 \). This subcase is equivalent to Case 1(c), so both intervals of \( J^I = [\gamma_1, \phi - e] \cup [\max\{\phi - e, \gamma_2\}, \gamma_2] \) are nonempty.

**Case 3.** Assume \( \phi \in \left(\frac{e}{2}, \frac{(1+p)e}{2}\right) \). Then we have \( \nu_2 < \nu_4 < \nu_1 = \nu^I \). There are four subcases.

(a) Consider \( \nu > \nu_1 \). Immediately, we know \( \gamma_1 < \gamma_1 \). Next, \( \nu > \nu_1 > \nu_2 \) implies \( \gamma_2 > \gamma_2 \). Thus, \( J^I = \emptyset \).
(b) Consider $\nu \in (\nu_4, \nu_1)$. Because $\nu_2 < \nu_4 < \nu < \nu_1$ and $\phi > \frac{\nu}{2}$, we know $\gamma_1 < \tau_1 < \phi - e$ and $\gamma_2 > \tau_2$. Thus, $\mathcal{J}^I = [\gamma_1, \tau_1]$ is nonempty.

(c) Consider $\nu \in (\nu_2, \nu_4)$. Because $\nu_2 < \nu < \nu_4 < \nu_1$ and $\phi > \frac{\nu}{2}$, we have $\tau_1 < \phi - e < \tau_1$ and $\gamma_2 > \tau_2$. Thus, $\mathcal{J}^I = [\gamma_1, \phi - e]$ is nonempty.

(d) Consider $\nu < \nu_2$. Because $\nu < \nu_2 < \nu_4 < \nu_1$ and $\phi > \frac{\nu}{2}$, we have $\gamma_1 < \phi - e < \tau_1$, $\gamma_2 < \tau_2$, and $\gamma_2 \geq \phi - e$. Thus, both intervals of $\mathcal{J}^I = [\gamma_1, \phi - e] \cup [\text{max}\{\gamma_2, \phi - e\}, \tau_2]$ are nonempty.

Case 4. Assume $\phi > \frac{(1+p)e}{2}$. Then we have $\nu_4 < \nu_1 = \nu_I$. Thus, $\phi > \frac{1}{2}$.

(a) Consider $\nu > \nu_1$. Analogous to case 3, we have $\mathcal{J}^I = \emptyset$ for this subcase.

(b) Consider $\nu \in (\nu_4, \nu_1)$. For reasons analogous to case 3(b), $\mathcal{J}^I = [\gamma_1, \tau_1]$ is nonempty.

(c) Consider $\nu < \nu_4$. Because $\nu < \min\{\nu_4, \nu_1\}$ and $\phi > \frac{(1+p)e}{2} > \frac{\nu}{2}$, we know $\gamma_1 < \phi - e < \tau_1$ and $\gamma_2 > \tau_2$. Thus, both intervals of $\mathcal{J}^I = [\gamma_1, \phi - e] \cup [\text{max}\{\gamma_2, \phi - e\}, \tau_2]$ are nonempty.

\[ \Box \]

Step 3. Finally, we characterize how $\mathcal{J}^I$ and $\mathcal{J}^C$ change as $\nu$ increases.

Lemma A.4. For $i \in \{I, C\}$, increasing $\nu$ increases $\mathcal{J}^I_\nu$ and decreases $\mathcal{J}^C_\nu$.

Proof. First, we prove the result for $i = C$. After that, we consider $i = I$.

Part 1. Recall $\mathcal{J}^C = [\mathcal{J}^C_\nu, \mathcal{J}^C_{\nu^*}]$ as defined in (7). Differentiating with respect to $\nu$ yields
\[ \frac{\partial \mathcal{J}^C}{\partial \nu} = -\frac{p(e - m)}{(1 - \nu)^2} < 0, \] (23)
and
\[ \frac{\partial \mathcal{J}^C}{\partial \nu} = \frac{p(e - m)}{(1 - \nu)^2} > 0. \] (24)
Thus, $\mathcal{J}^C$ shrinks as $\nu$ increases.

Part 2. For $\nu < \nu'$, let $\mathcal{J}^I_\nu = \max \mathcal{J}^I$ and $\mathcal{J}^I_{\nu'} = \min \mathcal{J}^I$. Then we show that $\mathcal{J}^I$ is increasing in $\nu$ and $\mathcal{J}^I$ is decreasing in $\nu$. Throughout, we assume $\nu < \nu'$. There are four cases.

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Case 1. Assume $\phi < \frac{(1-p)e}{2}$. Then $J^I_\nu = \gamma_2$, which is decreasing in $\nu$ by (17).

Next, we have

$$J^I_\nu = \begin{cases} \max\{\phi - e, \gamma_2\} & \text{if } \nu \in [\nu_3, \nu^I], \\ \gamma_1 & \text{if } \nu < \nu_3, \end{cases}$$

where $\nu^I = \nu_2$. By (13), we know $J^I_\nu$ increases over $\nu < \nu_3$. Next, $\nu < \nu_3$ implies $\gamma_1 < \phi - e$ in this case because $\phi < \frac{(1-p)e}{2} < \frac{e}{2}$. Finally, $\gamma_2$ is increasing in $\nu$ by (18). Altogether, we have shown that $J^I_\nu$ increases over $[0, \nu^I]$.

Case 2. Assume $\phi \in \left(\frac{(1-p)e}{2}, \frac{e}{2}\right)$. In this case,

$$J^I_\nu = \begin{cases} \phi - e & \text{if } \nu \in [\nu_2, \nu^I], \\ \gamma_2 & \text{if } \nu < \nu_2, \end{cases}$$

where $\nu^I = \nu_3$. By (17), we know $J^I_\nu$ decreases over $\nu < \nu_2$. At $\nu = \nu_2$, $J^I_\nu$ decreases discontinuously from $-\frac{1-p}{1+p}\phi$ to $\phi - e$. Finally, $J^I_\nu$ is constant for $\nu > \nu_2$.

Next, we have $J^I_\nu = \gamma_1$, so (13) implies that $J^I_\nu$ increases in $\nu$.

Case 3. Assume $\phi \in \left(\frac{e}{2}, \frac{(1+p)e}{2}\right)$. In this case,

$$J^I_\nu = \begin{cases} \gamma_1 & \text{if } \nu \in [\nu_4, \nu^I], \\ \phi - e & \text{if } \nu \in [\nu_2, \nu_4), \\ \gamma_2 & \text{if } \nu < \nu_2, \end{cases}$$

where $\nu^I = \nu_1$. First, (17) implies that $J^I_\nu$ decreases over $\nu < \nu_2$. At $\nu = \nu_2$, $J^I_\nu$ decreases discontinuously from $-\frac{1-p}{1+p}\phi$ to $\phi - e$. Next, $J^I_\nu$ is constant as $\nu$ increases $(\nu_2, \nu_4)$. At $\nu = \nu_4$, we have $\gamma_1 = \phi - e$. Finally, (12) implies that $J^I_\nu$ decreases in $\nu$ over $(\nu_4, \nu^I)$. Altogether, we have shown that $J^I_\nu$ is decreasing in $\nu$.

Next, we have $J^I_\nu = \gamma_1$, which increases in $\nu$ as noted in the previous cases.
Case 4. Assume $\phi > \frac{(1+p)e}{2}$. In this case,

$$ J_\nu = \begin{cases} 
\tau_1 & \text{if } \nu \in (\overline{\nu}, \overline{\nu}'], \\
\tau_2 & \text{if } \nu < \overline{\nu}.
\end{cases} $$

where $\overline{\nu}' = \nu_1$.

First, (17) implies that $J_\nu$ decreases in $\nu$ over $[0, \overline{\nu}_4)$. At $\nu = \overline{\nu}_4$ $\phi > \frac{(1+p)e}{2}$ implies $\overline{\tau}_1 = \overline{\tau}_2 = \phi - e$. Finally, (12) implies that $J_\nu$ is decreases in $\nu$ over $(\overline{\nu}_4, \overline{\nu}')$. Altogether, we have shown that $J_\nu$ is decreasing.

Next, we have $J_\nu = \gamma_1$, so (13) implies that $J_\nu$ is decreasing in $\nu$.

\[ \square \]

**Proposition 2.** Every equilibrium features either compromising, informative appointments, or tying hands. Furthermore, there exists an equilibrium featuring:

1. compromising if and only if $\nu \geq \nu$ and $\beta \geq \beta^c_\nu$;
2. informative appointments if and only if either $\nu > \overline{\nu}'$ or $\beta < \beta^{th}_{\nu}$; and
3. tying hands if and only if $\nu \leq \overline{\nu}'$ and $\beta \geq \beta^{th}_{\nu}$.

Note: Whenever $(x_1, J_1)$ is off the path of play and beliefs are not pinned down by equilibrium dominance we assume the voter believes the deviation is due to the extremist.

**Proof of Proposition 2**

We first show that every pure strategy PBE satisfying equilibrium dominance is either an informative appointments equilibrium, a compromising equilibrium, or a tying hands equilibrium. We break the analysis into two cases, distinguished by whether $I$’s appointments strategy separates types. In each case, we show that any equilibrium must be one of the three types listed above. After completing this component of the proof, we subsequently prove the characterization component.

**Case 1.** Suppose that types separate in equilibrium at the appointments stage, each selecting a different value of $J_1$. There are two subcases.
(a) Suppose that type \( e \) chooses \( J_1 \notin \mathcal{J}^I \). As the extremist is removed from office following such a choice, if the extremist chooses any \( J'_1 \neq e + \phi \), they have a profitable deviation to \( J = e + \phi \). Therefore, the extremist must be choosing \( J_1 = e + \phi \) in such an equilibrium.

Additionally, in this case it must be that the moderate chooses some \( x_1 \) and \( J_1 \) that satisfies

\[
-|x_1 - e| + \beta - (1 - \nu)|J_1 + \phi - e| = -\nu(2pe + (1 - p)(e + m)), \tag{25}
\]

where the LHS of (25) gives the extremist’s expected utility for choosing \((x_1, J_1)\) and winning reelection, while the RHS gives the extremist’s expected utility for not deviating.

For a contradiction, first suppose that the moderate is choosing \((x_1, J_1)\) such that

\[
-|x_1 - e| + \beta - (1 - \nu)|J_1 + \phi - e| > -\nu(2pe + (1 - p)(e + m))
\]

is an equilibrium. As the inequality holds strictly, there exists \( \epsilon > 0 \) such that

\[
-|x_1 + \epsilon - e| + \beta - (1 - \nu)|J_1 + \phi - e| > -\nu(2pe + (1 - p)(e + m)).
\]

Clearly, the extremist will never deviate to choose \((x_1 + \epsilon, J_1)\), thus, following the off-path action \((x_1 + \epsilon, J_1)\) equilibrium dominance requires the voter to put probability 1 on the incumbent being a moderate. However, since \( |x_1 - m| > |x_1 + \epsilon - m| \) the moderate has profitable deviation to \((x_1 + \epsilon, J_1)\), contradicting that \((x_1, J_1)\) is an equilibrium.

To complete the contradiction, suppose that the moderate is choosing some \((x_1, J_1)\) such that

\[
-|x_1 - e| + \beta - (1 - \nu)|J_1 + \phi - e| > -\nu(2pe + (1 - p)(e + m)).
\]

However, this is inconsistent with equilibrium play, as, by construction of the inequality, \( e \) may profitably deviate to mimic the moderate.

This completes the argument that in this case, in equilibrium the moderate must be choosing \((x_1, J_1)\) that solves (25). Note that this satisfies our definition of an informative appointments equilibrium, as required.

(b) For the second subcase, suppose that type \( e \) chooses \( J_1 \in \mathcal{J}^I \). First, note that if the extremist is choosing such a \( J_1 \) in equilibrium, then they must be choosing \( J_1 = \mathcal{J}^I \). There are two subcases to consider.

First, we show that the moderate must be choosing some \( J_1 \in \mathcal{J}^I \).
To deduce a contradiction, suppose the moderate is choosing some \( J_1 \notin J^I \). We show that such a strategy cannot be an equilibrium by demonstrating that any such \( J_1 \) admits a profitable deviation by either the moderate or extremist. If the moderate’s choice is such that \( J_1 < J^I \), then the moderate has a profitable deviation to \( J^I \). If the moderate’s choice is such that \( J_1 > J^I \) and the moderate is winning reelection, then the extremist can profitably deviate to mimic the moderate’s choice. Finally, suppose the moderate’s choice is such that \( J_1 > J^I \) and the moderate is losing. Recall that in this proposed equilibrium the extremist is choosing \( J_1 = J^I \). This implies that the moderate can profitably deviate to \( J_1 = J^I \), and therefore such a strategy cannot be part of an equilibrium. Therefore, the moderate must be choosing \( J_1 \in J^I \), as required.

Finally, as the moderate must be choosing \( J_1 \in J^I \) in such an equilibrium, note that in this case equilibrium conforms to our definition of a tying hands equilibrium.

**Case 2.** Suppose that both incumbent-types pool at the appointments stage, choosing the same judge. First, note that in equilibrium the incumbent-types cannot pool on a choice of \( J_1 \) that results in them losing office. For a proof by contradiction, suppose not. If the incumbent is losing office, then the types must pool on \( J_1 = e+\phi \), as type \( e \) would have a profitable deviation otherwise. However, note that this implies that the moderate type can profitably deviate to \( J_1 = m+\phi \). Therefore, in an equilibrium where incumbent-types pool at the appointments stage, the incumbent must win reelection.

We now consider two subcases, depending on the location of the judge that the politician-types pool on.

(a) First, suppose that types pool on some \( J_1 \in J^I \) in equilibrium. If types pool on any \( J_1 \neq J^I \), the extremist may profitably deviate to \( J^I \). Therefore, if types pool on some \( J_1 \in J^I \) in equilibrium, they must pool on \( J^I \). Such an equilibrium conforms to our definition of a tying hands equilibrium.
(b) For the second subcase, suppose that types pool on some \( J_1 \notin \mathcal{J}^I \). Because \( I \) must win reelection in any equilibrium with both types pooling on \( J_1 \notin \mathcal{J}^I \), as shown above, both types must also pool on \( x_1 \). For a proof by contradiction, suppose not. Then type \( e \) is losing reelection, which contradicts the requirement that both types win reelection in any equilibrium with pooling on \( J_1 \).

As the politician-types must pool in both their first-period appointment and policy choice, and they must win reelection, it follows from our analysis of voter incentives that they must be choosing some \( J_1 \leq 0 \).

Finally, we show that in such an equilibrium the types must pool on a first-policy \( x_1 \) such that \( x_1 \leq m \). For a proof by contradiction, suppose not. Note that the equilibrium dominance refinement in this case requires that after a deviation at the policy stage to some \( x'_1 \in [m, x_1) \), that the voter places probability 1 on the moderate. However, this means that the moderate has a profitable deviation to any such \( x'_1 \). Therefore, in such an equilibrium, types must pool on \( x_1 \leq m \).

Altogether, we have shown in this subcase that types must pool on some \( J_1 \leq 0 \) and on some \( x_1 \leq m \). Therefore, this conforms to our definition of a compromising equilibrium.

We prove the characterization component of Proposition 2 in three parts. Beforehand, we define the following useful cutoffs on office benefit:

\[
\beta_{TH} = (2 - \nu)(e - \bar{J}_\nu - \phi) - \nu(2pe + (1 - p)e + m), \quad \text{and} \quad (26)
\]

\[
\beta_C = |e - m| + (1 - \nu)|e - \phi| - \nu[2pe + (1 - p)|e + m|]. \quad (27)
\]

- **Part 1**: We prove part 1 of Proposition 2 in two steps.

  **Step 1**: We begin by proving the first implication. Suppose that either \( \nu > \bar{\nu}^I \) or \( \beta < \beta_{TH} \). We show that an informative appointments equilibrium exists if either of these conditions holds. We consider each type in turn, showing that \( e \) cannot profitably deviate from \( J_1^*(e) = e + \phi \) and \( x_1^*(e) = e \), and that \( m \) cannot profitably deviate from their strategy of choosing \((x_1^*(m), J_1^*(m))\) that solves equation (25).
Consider type e. First, suppose \( \nu > \overline{\nu} \) in this case, \( \mathcal{J}^I = \emptyset \) so a deviation to any \( J'_1 \neq J^*_1(m) \) results in e losing reelection. Because e loses reelection after such a deviation, it cannot be profitable by our previous arguments. The only remaining deviation to check for \( \nu > \overline{\nu} \) is a deviation to \( J'_1 = J^*_1(m) \), which cannot be profitable, as by construction \( J^*_1(m) \) solves an indifference condition for type e given by equation (25). Therefore, if \( \nu > \overline{\nu} \) then e does not have a profitable deviation.

Now consider the case in which \( \nu \leq \overline{\nu} \) and \( \beta < \beta_{TH} \). By the arguments above, type e cannot profitably deviate to either some \( J'_1 \notin \mathcal{J}^I \) or to \( J'_1 = J^*_1(m) \). The final deviation to check is \( J'_1 \in \mathcal{J}^I \). Such a deviation is not profitable if

\[-(2 - \nu)(e - \overline{J} - \phi) + \beta \leq -\nu(2pe + (1 - p)(e + m)), \tag{28}\]

which holds given our assumption that \( \beta < \overline{\beta}_{TH} \). Therefore, type e does not have a profitable deviation.

Next, consider type m. Note that by construction of \( J^*_1(m) \), type e is indifferent between choosing \( J^*_1(e) \) and deviating to \( J^*_1(m) \). This implies that the m cannot profitably deviate to any \( J'_1 \notin \mathcal{J}^I \). Further, their strategy selects the best possible \( J_1 \) and \( x_1 \) that results in reelection. Therefore, the moderate has no profitable deviation. This suffices to show that if \( \nu > \overline{\nu} \) or \( \nu \leq \overline{\nu} \) and \( \beta < \overline{\beta}(\nu) \) then an informative appointments equilibrium exists.

Step 2: We now prove the second implication, showing that if an informative appointments equilibrium exists, then either \( \nu > \overline{\nu} \) or \( \nu \leq \overline{\nu} \) and \( \beta < \overline{\beta}(\nu) \).

Recall that in such an equilibrium the extremist must be choosing \( J^*_1(e) = e + \phi \) and the moderate must be selecting \((x_1^*(m), J^*_1(m))\) satisfying inequality (25). Type e must be unable to profitably deviate to some \( J_1 \in \mathcal{J}^I \). Given our knowledge of e’s strategy from before, this implies that either (i) \( \nu > \overline{\nu} \) or (ii) \( \nu \leq \overline{\nu} \) and \( \beta < \overline{\beta}_{TH} \), as required. This completes proof of part 1 of Proposition 2.

- **Part 2:** We prove part 2 of Proposition 2 in two steps.

  Step 1: We begin by proving the first implication. Suppose that \( \nu < \overline{\nu} \) and \( \beta > \overline{\beta}_{TH}(\nu) \). We show that a tying hands equilibrium exists. To do so, we
show that $e$ cannot profitably deviate from $J_1^*(e) = \overline{J}^I_\nu$ and $x_1^*(e) = \overline{J}^I_\nu + \phi$ and that $m$ cannot profitably deviate from $J_1^*(m) = \overline{J}^I_\nu$ and $x_1^*(m) = \min\{\overline{J}^I_\nu + \phi, m\}$.

Consider type $e$. There are two deviations to consider. First, a deviation to any $J'_1 \in J^I \setminus \overline{J}^I_\nu$ cannot be profitable, as the incumbent will be reelected after such a deviation but receives strictly lower utility from the consequent first-period policy, which lies strictly to the left of $\overline{J}^I_\nu + \phi < e$. Second, consider a deviation to some $J'_1 \notin J^I$. As the extremist is not reelected following such a deviation, the utility of such a deviation is maximized at $J'_1 = e + \phi$. Such a deviation is not profitable if

$$-(2 - \nu)(e - \overline{J} - \phi) + \beta \geq -\nu(2pe + (1 - p)(e + m)),$$

which holds as we have assumed that $\beta > \beta_{TH}$.

Next, we show that the moderate does not have a profitable deviation. There are two deviations to consider. First, a deviation to any $J'_1 \in J^I \neq \overline{J}^I$ cannot be profitable. This is because such a deviation results in reelection for the moderate, but also results in a policy that is weakly to the left of the moderate’s ideal point. Therefore, such a deviation cannot be strictly profitable. Second, note that the fact $\beta \geq \beta_{TH}$ implies that the moderate cannot profitably deviate to any $J'_1 \notin J^I$, as required.

Step 2: We now prove the second implication, showing that if a tying hands equilibrium exists, then $\nu < \overline{\nu}^I$ and $\beta \geq \overline{\beta}_{TH}$. Suppose a tying hands equilibrium exists. This implies that the set $J^I$ is nonempty, which implies that $\nu \leq \overline{\nu}^I$. Further, existence of a tying hands equilibrium implies that the extremist cannot profitably deviate to set $J'_1 = e + \phi$. By (29), this implies that $\beta \geq \overline{\beta}_{TH}$, as required. This completes proof of part 2 of Proposition 2.

• Part 3: We prove part 3 of Proposition 2 in three steps. The first two steps show the first implication, with each focusing respectively on the cases in which an informative appointments and tying hands equilibrium also exists. The third step proves the second implication.

Step 1: For the first step, consider the case where an informative appoint-
ments equilibrium exists, i.e. $\nu > \overline{\nu}^I$ or $\beta < \overline{\beta}_{TH}$. We show that a compromising equilibrium exists in this case if and only if $\beta \geq \overline{\beta}_C$. Recall that a compromising equilibrium exists if and only if neither type can deviate from the strategies $J^*(e) = J^*(m) = 0$ and $x^*(e) = x^*(m) = m$.

First consider a deviation by the extremist. As $\nu > \overline{\nu}^I$, if the extremist deviates to any $J'_1 \neq 0$ they will lose reelection. Therefore, the best possible deviation from the perspective of the extremist is to $J_1 = e + \phi$. Such a deviation is not profitable if

$$-|e - m| - (1 - \nu)|e - \phi| + \beta \geq -\nu[2pe + (1 - p)|e + m|],$$

which holds if and only if $\beta > \overline{\beta}_C$, as required.

The only other deviation that must be considered for type $e$ is a deviation to some $J_1 \in \mathcal{J}^I$. However, note that the assumption that $\nu > \overline{\nu}^I$ implies that $\mathcal{J}^I$ is empty. Finally, note that type $m$ cannot profitably deviate to an appointment that results in losing office, as the best deviation to an appointment that results in the moderate losing office, which is $J'_1 = m + \phi$, is not profitable if

$$\beta \geq -\nu|e - m| + (1 - p)2m,$$

which holds as $\beta \geq 0$.

Step 2: For the second step, consider the case where a tying hands equilibrium exists, i.e., $\beta > \overline{\beta}_{TH}$ and $\nu < \overline{\nu}^I$. We show that if a compromising equilibrium exists for some $\nu' < \overline{\nu}^I$, then a compromising equilibrium also exists for all $\nu \in (\nu', \overline{\nu}^I]$. Additionally, our proof demonstrates that there exist parameters for which a compromising equilibrium and a tying hands equilibrium exist simultaneously.

To begin, note that if $\mathcal{J}^I$ is nonempty, then a compromising equilibrium exists if and only if the following inequality holds

$$-(2 - \nu)|e - (\overline{\mathcal{J}}^I + \phi)| \leq -|e - m| - (1 - \nu)|e - \phi|$$

(32)
or equivalently,
\[ J_v^I \leq \frac{m - \phi}{2 - \nu}. \] (33)

We proceed by considering cases depending on the location of \( \phi \) and \( \nu \). There are three cases to consider, as \( J_v^I \) can only be located at \( \tau_1, \phi - e, \) or \( \tau_2 \). In each case, we show that inequality (33) holds.

Before proceeding, it is useful to define the functions \( f_1(\nu) \) and \( f_2(\nu) \) as

\[ f_1(\nu) = -\phi + \left( \frac{(1 - p)m + (p - \nu)e}{1 - \nu} \right) - \frac{m - \phi}{2 - \nu} \] (34)

and

\[ f_2(\nu) = \frac{1 - p}{1 + p} \left( -\phi + \frac{m - \nu e}{1 - \nu} \right) - \frac{m - \phi}{2 - \nu} \] (35)

respectively.

We start by noting that at \( \nu = 0 \) it is the case that \( J_v^I = \tau_2 \). Thus, at \( \nu = 0 \) inequality (33) holds if and only if

\[ \left( \frac{1 - p}{1 + p} \right) (-\phi + m) \leq \frac{m - \phi}{2}, \] (36)

which is true if and only if \( p \leq 1/3 \).

Case 1. Assume \( \phi < \frac{(1 - p)e}{2 - \nu} \). Then \( J_v^I = \tau_2 \). We will show there exists \( \nu \) such that if \( \nu \geq \nu \) then inequality (33) holds, otherwise, if \( \nu < \nu \) then it does not. To do so, we show that \( \phi < \frac{(1 - p)e}{2 - \nu} \) implies that, when viewed as functions of \( \nu \), \( \tau_2 \) is decreasing at a slower rate than \( \frac{m - \phi}{2 - \nu} \).

Taking the derivative of \( \frac{m - \phi}{2 - \nu} \) with respect to \( \nu \) yields \( \frac{m - \phi}{(2 - \nu)^2} \). This is greater than \( \frac{\partial \tau_2}{\partial \nu} \) if

\[ \frac{m - \phi}{(2 - \nu)^2} > \left( \frac{1 - p}{1 + p} \right) \left( \frac{e - m}{(1 - \nu)^2} \right), \] (37)

which holds if and only if

\[ \phi < m + \left( \frac{(1 - p)(e - m)}{1 + p} \right) \left( \frac{(2 - \nu)^2}{(1 - \nu)^2} \right) \] (38)

Recall that in this case we have \( \phi < \frac{(1 - p)e}{2 - \nu} \), so a sufficient condition for (37)
to hold is
\[
\frac{(1 - p)e}{2} < m + \left( \frac{(1 - p)(e - m)}{1 + p} \right) \left( \frac{(2 - \nu)^2}{(1 - \nu)^2} \right).
\] 
(39)

Rearranging yields
\[
\frac{(1 - p)e - 2m}{2} < \left( \frac{(1 - p)(e - m)}{1 + p} \right) \left( \frac{(2 - \nu)^2}{(1 - \nu)^2} \right),
\] 
(40)
which holds as \(\frac{(1 - p)e - 2m}{2} < \left( \frac{(1 - p)(e - m)}{1 + p} \right)\) and \(1 < \left( \frac{(2 - \nu)^2}{(1 - \nu)^2} \right)\).

Case 2. Assume \(\phi \in \left( \frac{(1 - p)e}{2}, e \right]\).

1. Assume \(\nu \in \left[ \nu_2, \nu_3 \right]\), which implies \(J'_\nu = \phi - e\). We show that at \(\nu = \nu_3\) inequality (33) does not hold. This is true if and only if
\[
\phi - e < \frac{m - \phi}{2 - \nu_3}
\]
(41)
\[
\Leftrightarrow \frac{\phi - m}{e - \phi} < 1 + \frac{(1 - p)(e - m)}{2\phi}
\]
(42)
Since the LHS of the above inequality is strictly increasing in \(\phi\) and the RHS is strictly decreasing, a sufficient condition for the inequality to be true is that it holds at \(\phi = \frac{e}{2}\). In this case, the inequality becomes
\[
\frac{e - 2m}{e} < 1 + \frac{(1 - p)(e - m)}{e},
\]
(43)
which reduces to \(-2m < (1 - p)(e - m)\), which always holds.

Since \(\frac{m - \phi}{2 - \nu}\) is strictly decreasing in \(\nu\), and \(\phi - e\) is not changing in \(\nu\), it must be that inequality (33) holds for all \(\nu \in [\nu_2, \nu_3]\).

2. Assume \(\nu < \nu_2\), which implies \(J'_\nu = \nu_2\). Thus, inequality (33) holds in this case if and only if \(f_2(\nu) > 0\). First, note that \(f_2(\nu)\) is quadratic in \(\nu\). Second, note that \(f_2(\nu_2) < 0\) as \(\phi < e/2\). We now consider subcases, depending on whether \(f_2(0)\) is positive or negative.

For the first subcase, suppose that \(f_2(0) > 0\). As \(f_2(\nu_2) < 0\), and \(f_2(\nu)\) is quadratic, it follows that there is exactly one value \(\nu \in (0, \nu_2)\) such that \(f_2(\nu) = 0\). Therefore, if \(f_2(0) > 0\), then inequality (33) does not hold for \(\nu < \nu_2\) and does hold for \(\nu \in [\nu, \nu_2]\).
For the second subcase, suppose that $f_2(0) < 0$. As $f_2(\nu_2) < 0$, in this subcase it suffices to show that $\frac{\partial f_2}{\partial \nu} < 0$. Differentiating, we find that this holds if and only if

$$\frac{\partial f_2}{\partial \nu} = -(\frac{1 - p}{1 + p}) (\frac{e - m}{(1 - \nu)^2}) - \frac{m - \phi}{(2 - \nu)^2} < 0,$$

which is equivalent to

$$\left(\frac{1 - p}{1 + p}\right) > \left(\frac{\phi - m}{e - m}\right) \frac{(1 - \nu)^2}{(2 - \nu)^2}. \quad (45)$$

Note that the left hand side of (50) is decreasing in $p$. Additionally, the right hand side of (50) is increasing in $\phi$ and decreasing in $\nu$. Further, recall that $f_2(0) < 0$ implies that $p < 1/3$. We also know in this case that $\nu \geq 0$ and $\phi < e/2$. Therefore, substituting for $p$, $\phi$, and $\nu$, a sufficient condition for (50) to hold in this subcase is

$$\frac{1}{2} > \frac{(e/2) - m}{e - m} \left(\frac{1}{4}\right), \quad (46)$$

which holds if and only if $3e > 2m$, which is true. This implies that in this subcase that inequality (33) holds for all $\nu \in [0, \nu_2]$.

With this, we know that as inequality (33) holds for all $\nu > \nu_2$ and that $f_2(\nu)$ can only cross 0 at most once for $\nu < \nu_2$. Therefore, there exists a unique $\nu \in [0, \nu_1)$ such that inequality (33) holds for $\nu \geq \nu$ and does not hold for $\nu < \nu$.

Case 3. Assume $\phi \in \left(\frac{e}{2}, \frac{(1+p)e}{2}\right)$.

1. Assume $\nu \in [\bar{\nu}_4, \bar{\nu}_1]$, which implies $\bar{J}_\nu = \bar{\nu}_1$. We proceed in two steps. First, we show that equation (33) holds at $\bar{\nu}_1$. Second, we show that there is at most one value of $\nu \in [\bar{\nu}_4, \bar{\nu}_1]$ for which inequality (33) holds with equality.

Step 1: In this case, recall that if $\nu = \bar{\nu}_1$ then $\bar{J}_\nu = -\phi$. Therefore,
inequality (33) holds at \( \nu_1 \) if and only if
\[
\frac{-\phi - \frac{m - \phi}{1 - \nu_1}}{m} < 0 \iff \phi(\nu_1 - 1) < m, \tag{47}
\]
which holds.

Step 2: Now we show that \( f_1(\nu) = 0 \) admits at most one solution for \( \nu \in [\nu_4, \nu_1] \). Note that \( f_1(\nu) \) is quadratic in \( \nu \). Application of the quadratic formula reveals that the greatest solution to \( f_1(\nu) = 0 \) is located at
\[
\nu = \frac{2(e - \phi) + p(e - m)}{2(e - \phi)} - \frac{\sqrt{[2(\phi - e) + p(m - e)]^2 + 4(e - \phi)(m(1 - p) + 2\phi(pe - 1))}}{2(e - \phi)}. \tag{48}
\]
The right hand side of the above is strictly greater than 1. Therefore, as \( \nu \) is bounded above by 1, inequality (33) holds with equality at most once on \([\nu_4, \nu_1]\).

2. Assume \( \nu \in [\nu_2, \nu_4] \), which implies \( J^I_\nu = \phi - e \). Note that \( \frac{m - \phi}{2 - \nu} \) is strictly decreasing in \( \nu \). As \( \phi - e \) is not a function of \( \nu \), this implies that there is at most one solution to \( f_1(\nu) = 0 \) for \( \nu \in [\nu_2, \nu_4] \).

3. Assume \( \nu < \nu_2 \), which implies \( J^I_\nu = \gamma_2 \). We consider two subcases, depending on whether \( f_2(0) < 0 \) or not.

For the first subcase, suppose \( f_2(0) < 0 \). Recall that \( f_2(0) < 0 \iff p < 1/3 \). Additionally, \( p < 1/3 \implies f_2(\nu_2) \leq 0 \). Thus, it suffices to show that \( \frac{\partial f_2}{\partial \nu} < 0 \). Differentiating, we find that this holds if and only if
\[
\frac{\partial f_2}{\partial \nu} = -\left( \frac{1 - p}{1 + p} \right) \left( \frac{e - m}{(1 - \nu)^2} \right) - \frac{m - \phi}{(2 - \nu)^2} < 0, \tag{49}
\]
which is equivalent to
\[
\left( \frac{1 - p}{1 + p} \right) > \left( \frac{\phi - m}{e - m} \right) \frac{(1 - \nu)^2}{(2 - \nu)^2}. \tag{50}
\]
First, note that the right hand side of (50) is increasing in \( \phi \). Therefore,
a sufficient condition for (50) to hold is given by

\[(1 - p) > \left( \frac{(1 + p)e/2 - m}{e - m} \right) \frac{(1 - \nu)^2}{(2 - \nu)^2}. \tag{51}\]

Now, note that the left hand side of (50) is decreasing in \(p\), while the right hand side is increasing in \(p\). Additionally, the right hand side of (50) is decreasing in \(\nu\). Therefore, a sufficient condition for (50) to hold is

\[(1 - 1/3) > \left( \frac{(1 + 1/3)e/2 - m}{e - m} \right) \frac{(1 - 0)^2}{(2 - 0)^2}. \tag{52}\]

This condition holds, as \(4e > 3m\).

For the second subcase, suppose that \(f_2(0) > 0\). If \(f_2(\nu_2) < 0\), then as \(f_2(\nu)\) is quadratic in \(\nu\) then \(f_2(\nu)\) can cross 0 at most once. Finally, consider \(f_2(\nu_2)\). We show that this implies that \(f_2(\nu) = 0\) has no solutions on \([0, \nu_2]\). As \(f_2(\nu)\) is quadratic, its lower root is given by

\[(2e - m - 3\phi)(1 - p) - \sqrt{(3\phi + m - 2e)^2 - 4(1 - p)(e - \phi)(\phi - m)(3p - 1)}}{2(1 - p)(e - \phi)} \tag{53}\]

If \(\phi > \frac{2e - m}{3}\), then this solution is less than 0. The assumption that \(f_2(\nu_2) > 0\) implies that \(\phi > \frac{2e - \nu_2 e + m}{3 - \nu_2}\). Combining inequalities, we have

\[\phi > \frac{2e - \nu_2 e + m}{3 - \nu_2} > \frac{2e - m}{3}. \tag{54}\]

Therefore, the lower root of \(f_2(\nu)\) is less than 0. As \(f_2(\nu_2) > 0\) and \(f_2(0) > 0\) and \(f_2(\nu)\) is quadratic and continuous in \(\nu\), this implies that \(f_2(\nu) = 0\) has no solutions in this case.

Now, gathering all of this together, we complete the argument that inequality 33 holds with equality at most once for \(\nu \in [0, \nu_1]\).

First, assume that inequality (33) does not hold for any \(\nu < \nu_4\). In this case, arguments from part 1 above suffice.

Second, assume that inequality (33) does not hold for any \(\nu < \nu_2\) but does hold for some \(\nu' \in [\nu_2, \nu_4]\). By arguments from part 2, we know that inequality (33) must hold for all \(\nu \in (\nu', \nu_4)\). Further, by part 1
above, we have \( f_1(\nu_1) < 0 \) and \( f_1 \) can only cross 0 once on \([\nu_4, \nu_1]\), thus inequality (33) holding at \( \nu_4 \) implies that it holds for all \( \nu \in [\nu_4, \nu_1] \).

Case 4. Assume \( \phi > \frac{(1+p)e}{2} \).

1. Assume \( \nu \in (\nu_4, \nu_1) \), which implies \( J_\nu^f = \gamma_1 \). That a compromising equilibrium exists at \( \nu = \nu_1 \) and equation (33) holds with equality at most once over this range follows from the same argument as Case 3 part 1.

2. Assume \( \nu < \nu_4 \), which implies \( J_\nu^f = \gamma_2 \). We show that \( f_2(\nu) \) can only cross 0 at most once. The roots of \( f_2(\nu) \) are given by

\[
\frac{(2e - m - 3\phi)(1 - p) \pm \sqrt{(3\phi + m - 2e)^2(1 - p)^2 - 4(1 - p)(e - \phi)(\phi - m)(3p - 1)}}{2(1 - p)(e - \phi)},
\]

(55)

If \( \frac{2e-m}{3} < \phi \) then the lower solution is strictly less than 0, and so \( f_2 = 0 \) at most once on \([0, \nu_4]\).

Next, assume \( \frac{2e-m}{3} > \phi \). Note, since \( \phi \) is assumed greater than \( \frac{(1+p)e}{2} \), for this to be the case requires:

\[
\frac{2e - m}{3} > \frac{(1 + p)e}{2},
\]

(56)

which holds if and only if \( \frac{e-2m}{3e} > p \). So assume \( p < \frac{e-2m}{3e} \). If \( p < 1/3 \) then the \( f_2 \) can only cross 0 once, as the term in the square root (55) is larger than \((2e - m - 3\phi)(1 - p)\) and so the lower solution is below 0. Now assume \( p \in (1/3, \frac{e-2m}{3e}) \). However, \( p < \frac{e-2m}{3e} \) contradicts \( p > 1/3 \). Therefore, \( f_2 \) can cross 0 at most once.

Gathering all this together, we complete the argument that inequality (33) holds with equality at most once for \( \nu \in [0, \nu_1] \).

First, assume that inequality (33) does not hold for any \( \nu < \nu_4 \). Then arguments from part 1 suffice.

Second, assume that inequality (33) holds for some \( \nu < \nu_4 \). By part 1 above, we have \( f_1(\nu_1) < 0 \) and that \( f_1 \) can only cross 0 once on \([\nu_4, \nu_1]\). Thus, inequality (33) holding at \( \nu_4 \) implies that it holds for all \( \nu \in [\nu_4, \nu_1] \).
Proposition 3. (Electoral Outcomes) In equilibrium, moderate incumbents win reelection and extremist incumbents: (i) lose if \( \beta < \min\{\beta^e_\nu, \beta^th_\nu\} \), (ii) win if \( \beta \geq \beta^th_\nu \) and \( \nu \leq \nu' \), and (iii) can otherwise win or lose.

Proof of Proposition 3

Proof. The result follows from the characterization of equilibrium behavior above.

Proposition 4. (Effects of Polarization)

1. If \( \nu \) is sufficiently low and \( \beta \) sufficiently high then increasing party extremists increases \( J_1 \) and increasing ideological divergence decreases \( J_1 \).

2. If \( \nu \) is sufficiently high then increasing always decreases \( J_1 \), regardless of the source.

Proof of Proposition 4

Proof. We prove the proposition in three parts by studying how \( J_1 \) changes in type of equilibrium. Proposition 4 then follows from the characterization given in Proposition 2.

Compromising: Recall that in a compromising equilibrium, the location of \( J_1 \) is neither a function of \( p \) nor the location of either incumbent’s ideal point. It follows that in a compromising equilibrium, \( J_1 \) is constant for \( \theta \in \{e, m\} \), as required.

Informative appointments: First, we study the effects of polarization on the extremist’s appointee. Recall that in an informative appointments equilibrium, type \( e \) chooses \( J_1 = e + \phi \). Therefore, in this equilibrium \( J_1 \) is increasing in \( e \) and constant in \( p \).

Next, we study how the moderate’s choice of \( J_1 \) changes in polarization. Recall that in the informative appointments equilibrium where \( x_1 = J_1 + \phi \), type \( m \) sets

\[
J^*_1(m) = e - \phi - \frac{\nu[e + m + p(e - m)] + \beta}{2 - \nu}.
\]
Taking the derivative of $J_1^*$ with respect to $p$ yields

$$\frac{\partial J_1^*}{\partial p} = -\frac{\nu(e - m)}{2 - \nu} < 0.$$  
(58)

Next, to capture the effect of ideological polarization, we differentiate with respect to $e$ which yields

$$\frac{\partial J_1^*}{\partial e} = 1 - \frac{(1 + p)\nu}{2 - \nu}.$$  
(59)

Thus, $\frac{\partial J_1^*}{\partial e} < 0$ if $\nu > \frac{2}{2+p}$, otherwise, $\frac{\partial J_1^*}{\partial e} > 0$.

**Tying hands:** First, we show that for either type of the incumbent $\frac{\partial J_1^*}{\partial p} \geq 0$.

Recall, $J_1^*(\theta) \in \{\gamma_1, \gamma_2, \phi-e\}$. We show that in each case the desired inequality holds.

1. $J_1^*(\theta) = \phi - e$. Clearly, $\frac{\partial J_1^*}{\partial p} = 0$.

2. $J_1^*(\theta) = \gamma_1$. Differentiating yields

$$\frac{\partial J_1^*}{\partial p} = \frac{e - m}{1 - \nu} > 0.$$

3. $J_1^*(\theta) = \gamma_2$. Differentiating yields

$$\frac{\partial J_1^*}{\partial p} = \frac{2}{(1 + p)^2} \left( \frac{\phi - m - \nu e}{1 - \nu} \right) > 0,$$

where the inequality holds by $\frac{1 - \nu}{1 + p} > 0$ and $\gamma_2 < 0$.

Now we study the effect of changing $e$ on $J^I$, which is the equilibrium choice of judge for the both the moderate and incumbent in a tying hands equilibrium.

1. $J^I = \phi - e$. Here, $\frac{\partial J^I}{\partial e} = -1 < 0$.

2. $J^I = \gamma_1$. Differentiating yields

$$\frac{\partial J^I}{\partial e} = \frac{p - \nu}{1 - \nu}.$$
Thus, $J^I$ is decreasing if $p < \nu$ and increasing if $p > \nu$. Note, $p < \overline{\nu}_1$ and $p$ may be greater than or equal to $\overline{\nu}_4$. Thus, in the cases where $J^I = \overline{\nu}_1$ it can be that $J^I$ is increasing then decreasing in $\nu$ or always decreasing in $\nu$.

3. $J^*_1(m) = \overline{\nu}_2$. Differentiating yields

$$\frac{\partial J^I}{\partial e} = \frac{1 - p - \nu}{1 + p(1 - \nu)} < 0.$$ 

Note, it is always the case that if $\nu < \overline{\nu}_2$ then $J^I = \overline{\nu}_2$.

\[\square\]

**Proposition 5.** Assume $\beta$ sufficiently high.

1. The optimal probability of judicial vacancy is given by $\nu^* \in (0, \overline{\nu}^I]$.

2. Increasing party extremists increases the optimal vacancy rate.

3. Greater ideological divergence decreases the optimal vacancy rate

**Proof of Proposition 5**

We start by showing that for any $\nu$ such that both a tying hands and compromising equilibrium exists, voter welfare is always maximized in the tying hands equilibrium. Second, we show that the voter prefers the tying hands equilibrium at $\nu = \overline{\nu}^I$ over any compromising or informative appointments equilibrium when $\nu > \overline{\nu}^I$. Third, we find the $\nu$ that maximizes voter welfare in a tying hands equilibrium. Finally, we show that the optimal $\nu$ is weakly decreasing in $e$ and increasing in $m$.

**Lemma 1.** Fix some $\nu < \overline{\nu}^I$ and suppose that $\beta > \beta_{TH}$. For any compromising equilibrium, there exists a tying hands equilibrium such that $W_{TH}(\nu) \geq W_C(\nu)$.

**Proof.** Suppose $\nu < \overline{\nu}^I$. Voter welfare in a compromising equilibrium is given by

$$W_C(\nu) = -|x'| - \nu(pe + (1 - p)m) - (1 - \nu)(p(J' + \phi) + (1 - p)x^*_m(J')).$$ (60)
Recall that a compromising equilibrium is given by a pair of first period policy and judge, denoted \((x', J')\). In a compromising equilibrium, a type \(e\) incumbent must not have a profitable deviation to tying hands. Therefore, it must be the case that
\[-|x'| - (1 - \nu)(e - J' - \phi) \geq -(2 - \nu)(e - J'_I). \tag{61}\]

We now argue that at a voter-optimal compromising equilibrium, (61) must hold with equality. Rearranging (61) yields
\[(1 - \nu)(J' + \phi) \geq (e - x') + (1 - \nu)e - (2 - \nu)(e - J'_I). \tag{62}\]

Note that if this did not hold with equality, then there must also exist a \(J'' < J'\) such that the above holds. However, note that voter welfare is strictly higher in a compromising equilibrium in which politician-types pool on \(J''\). Therefore, at a voter-optimal compromising equilibrium, it must be the case that
\[(1 - \nu)(J' + \phi) = (e - x') + (1 - \nu)e - (2 - \nu)(e - J'_I). \tag{63}\]

To complete the argument we consider two cases, depending on \(x^*_m(J')\). In each case, we show that \(W_{TH}(\nu) \geq W_C(\nu)\). For the first case, suppose that \(x^*_m(J') = J' + \phi\). Substituting into \(W_C(\nu)\) using equation (63) yields
\[-\nu(pe + (1 - p)m) - (2 - \nu)(J'_I + \phi), \tag{64}\]
which is equal to \(W_{TH}(\nu)\), as required.

For the second case, suppose that \(x^*_m(J') = m\). Substituting into \(W_C(\nu)\) using (63) yields
\[W_C(\nu) = -|x'| - \nu(pe + (1 - p)m) - p(e - x') - p(1 - \nu)e
+ p(2 - \nu)(e - J'_I - \phi) - (1 - \nu)(1 - p)x^*_m(J'_I) \tag{65}\]

Second, suppose that \(x^*_m(J'_I) = m\). As as \(x' \geq 0\) in a compromising equilibrium,
a sufficient condition to ensure that $W_C(\nu) \leq W_{TH}(\nu)$ in this case is that

$$-\nu(pe+(1-p)m)-pe-p(1-\nu)e+(2-\nu)(e-J^I_\nu-\phi)-(1-\nu)(1-p)x^*_m(J^I_\nu) \leq W_{TH}(\nu)$$

(66)

Now, note that $x^*_m(J^I_\nu)$ is either equal to $m$ or $J^I_\nu + \phi$. In either case, substituting into the above and comparing to $W_{TH}(\nu)$ yields that $W_{TH}(\nu) \geq W_C(\nu)$, as required.

Assume $\phi > \frac{(1+p)e}{2}$. In this case, $\nu^I = \nu_1$. Additionally, assume $\beta$ sufficiently high such that there is a tying hands equilibrium at $\nu = \nu^I$.

1. Assume $\nu \leq \nu^I$. In this case, since $\beta$ is assumed high, there exists a tying hands equilibrium, and possibly a compromising equilibrium. However, we show that the optimal tying hands equilibrium always yields higher welfare than the best possible welfare from the incumbent preferred compromising equilibrium.

First, we analyze tying hands equilibria. The voter’s welfare in a tying hands equilibrium, as a function of $\nu$, is given by

$$W_{TH}(\nu) = -(2-\nu)(J^I + \phi) - \nu(pe + (1-p)m).$$

If $\nu \in (\nu_4, \nu_1]$ then $J^I = \overline{\nu}_1(\nu)$, where we write $\overline{\nu}_1(\nu)$ to highlight that $\overline{\nu}_1$ is a function of $\nu$. Thus,

$$W(\nu \in (\nu_4, \nu_1]) = -(2-\nu)(\overline{\nu}_1(\nu) + \phi) - \nu(pe + (1-p)m).$$

Differentiating with respect to $\nu$ yields

$$\frac{\partial W}{\partial \nu} = -\left(- (\overline{\nu}_1 + \phi) + (2-\nu)\frac{\partial \overline{\nu}_1}{\partial \nu}\right) - pe - (1-p)m$$

$$= \frac{(1-p)m + (p-\nu)e}{1-\nu} + \frac{2-\nu}{(1-\nu)^2} (1-p)(e-m) - pe - (1-p)m.$$
We show that $\frac{\partial W}{\partial \nu} > 0$. To see this, note that

$$\frac{\partial}{\partial p} \left[ \frac{\partial W}{\partial \nu} \right] = \frac{e - m}{1 - \nu} - \frac{2 - \nu}{(1 - \nu)^2} (e - m) - (e - m)$$

$$= \left[ e - m \right] \left[ \frac{1}{1 - \nu} - \frac{2 - \nu}{(1 - \nu)^2} - 1 \right] < 0.$$

Thus, $\frac{\partial W}{\partial \nu}$ is minimized at $p = 1$. At $p = 1$, $\frac{\partial W}{\partial \nu} = 0 \geq 0$. Therefore, $\frac{\partial W}{\partial \nu} > 0$ and $W(\nu)$ is maximized at $\nu = \nu_1 = \nu_1^I$ for $\nu \in (\nu_4, \nu_1]$.

Next, consider $\nu \in [0, \nu_4)$. Welfare is given by

$$W(\nu \in [0, \nu_4]) = -(2 - \nu)(\gamma_2(\nu) + \phi) - \nu(pe + (1 - p)m).$$

Differentiating with respect to $\nu$ yields

$$\frac{\partial W}{\partial \nu} = - \left[ - (\gamma_1 + \phi) + (2 - \nu) \frac{\partial \gamma_1}{\partial \nu} \right] - pe - (1 - p)m$$

$$= \frac{(1 - p)m + (p - \nu)e}{1 - \nu} + \frac{2 - \nu}{(1 - \nu)^2} (1 - p)(e - m) - pe - (1 - p)m.$$

Differentiating again with respect to $\nu$ yields

$$\frac{\partial^2 W}{\partial \nu^2} = \frac{(e - m)(1 - p)(1 + \nu)}{(1 + p)(1 - \nu)^3} > 0.$$

Since welfare is convex in $\nu$ over $[0, \nu_4]$, it is maximized at either $\nu = 0$ or $\nu = \nu_4$. From our earlier argument, welfare is strictly lower at $\nu = \nu_4$ than at $\nu = \nu_1$. Thus, to find the optimal tying hands equilibrium, all that remains is to compare welfare at $\nu = 0$ to welfare at $\nu = \nu_1$. Welfare at $\nu = \nu_1$ is higher if and only if

$$-2(\gamma_2(0) + \phi) \leq -\nu_1(pe + (1 - p)m),$$

which holds by $\phi > \frac{(1 + p)e}{2} > \frac{e}{2}$.

Second, we compare the tying hands equilibrium at $\nu = \nu_1$ to the incumbent preferred compromising equilibrium. We show that the welfare from an incumbent-preferred compromising equilibrium is worse than the welfare
from the optimal tying hands equilibrium.

Welfare from an incumbent-preferred compromising equilibrium is

$$-m - (1 - p)m - p(\nu e + (1 - \nu)\phi). \quad (67)$$

Welfare from the tying hands equilibrium is

$$-\nu_1(pe + (1 - p)m). \quad (68)$$

As welfare in the incumbent optimal compromising equilibrium is decreasing in $\nu$, a sufficient condition for the result to hold is

$$-m - (1 - p)m - p\phi <-\nu_1(pe + (1 - p)m), \quad (69)$$

which holds iff

$$\nu_1 < \frac{m + (1 - p)m + p\phi}{pe + (1 - p)m}. \quad (70)$$

Substituting in for $\nu_1$, this becomes

$$\frac{pe + (1 - p)m}{e} < \frac{m + (1 - p)m + p\phi}{pe + (1 - p)m}, \quad (71)$$

which holds iff

$$(pe + (1 - p)m)^2 - em - e(1 - p)m < pe\phi. \quad (72)$$

As we have assumed $\phi > (1 + p)e/2$, a sufficient condition for the above inequality to hold is

$$(pe + (1 - p)m)^2 - em - e(1 - p)m < \frac{p(1 + p)e^2}{2} \iff \quad (73)$$

$$p^2e^2 + 2pe(1 - p)m + (1 - p)^2m^2 - em - e(1 - p)m < \frac{p(1 + p)e^2}{2} \iff \quad (74)$$

$$[p^2e^2/2 - pe^2/2] + [2p(1 - p)em - em] + [(1 - p)^2m^2 - e(1 - p)m] < 0. \quad (75)$$
Note that each term above in brackets is negative by $0 < p < 1$ and $0 < m < e$, so this always holds.

2. Assume $\nu > \nu^f$. In this case, by our assumption that $\beta$ sufficiently high, there are multiple equilibria: an informative appointments equilibrium and a continuum of compromising equilibria. However, we show that the tying hands equilibrium at $\nu = \nu^f$ yields higher welfare regardless of the equilibrium selected and choice of $\nu$.

First, consider the informative appointments equilibrium. Welfare in such an equilibrium is given by

$$W_{IA}(\nu) = p\left(-e - \nu(pe + (1 - p)m) - (1 - \nu)e\right)$$

$$+ (1 - p)\left(-J_1^*(m) - \nu m - (1 - \nu)J_1^*(m)\right)$$

$$= \left[-pe - \nu(1 - p)m\right]$$

$$+ \left[-p(\nu(pe + (1 - p)m) + p(1 - \nu)e)\right]$$

$$- (1 - p)(\bar{J}_1^*(m) + (1 - \nu)\bar{J}_1^*(m)).$$

The first term in brackets is strictly less than $W_{TH}(\nu^f)$ for all $\nu$, and the second term in brackets is negative. Thus, $W_{IA}(\nu) < W_{TH}(\nu^f)$ for all $\nu$.

Next, consider a compromising equilibrium in which both types of the incumbent choose $J' \leq 0$ and $x'_1 \leq m$. In this case, voter welfare is

$$W_C(\nu) = -|x'_1| - \nu(pe + (1 - p)m) - (1 - \nu)(p\hat{x}_e^*(J') + (1 - p)\hat{x}_m^*(J')).$$

Since $\nu > \nu^f$, we have $-\nu(pe + (1 - p)m) < -\nu(pe + (1 - p)m) = W_{TH}(\nu)$. As the remaining terms in $W_C(\nu)$ are negative, we have $W_C(\nu) < W_{TH}(\nu)$, as required. Consequently, it cannot be optimal to have $\nu > \nu^f$.

Assume now that $\phi \in \left(\frac{e}{2}, \frac{1+p}{2}\right)$. From our earlier arguments, we only have to focus on $\nu \leq \nu^f$ and the tying hands equilibrium to find the optimal $\nu$. If $\nu \in [\nu_4, \nu^f]$ the previous argument implies that welfare is increasing in $\nu$ and so is maximized at $\nu = \nu^f$. Next, consider $\nu \in (\nu_2, \nu_4)$. Since $\bar{J}^f = \phi - e$ in this case, welfare is strictly decreasing in $\nu$ and such a $\nu$ cannot be optimal. Finally,
consider $\nu \in [0, \nu_2]$. By the earlier argument, voter welfare is convex in $\nu$ when $J = \bar{\gamma}_2(\nu)$ and, thus, is maximized at one of the boundary points. Therefore, welfare is maximized at either $\nu = 0$, $\nu = \nu_2$, or $\nu = \nu' = \nu_1$. By the argument for the case where $\phi > \frac{(1+p)}{2}$ we have that $\phi > \frac{\nu}{2}$ implies welfare at $\nu = 0$ is strictly less than welfare at $\nu = \nu_1$. To conclude the proof, we show that welfare at $\nu = \nu_2$ is less than welfare $\nu = \nu_1$. This holds if and only if

$$-(2 - \nu_2)(\bar{\gamma}_2(\nu_2) + \phi) - \nu_2(pe + (1 - p)m) \leq -\nu_1(pe + (1 - p)m).$$

Note, $\bar{\gamma}_2(\nu_2) = \phi - e$. Thus, substituting for $\nu_2$ and $\nu_1$, the above inequality simplifies to

$$-(2 - \frac{m}{e})(2\phi - e) - \frac{m}{e}(pe + (1 - p)m) \leq -\frac{pe + (1 - p)m}{e}(pe + (1 - p)m) \quad (76)$$

which holds if and only if $e < \bar{e}$ for some $\bar{e} \in \left[\frac{2\phi}{1+p}, 2\phi\right]$. Thus, if $e < \bar{e}$ then $\nu^* = \nu_1$, otherwise, $\nu^* = \nu_2$.

Now assume $\phi \in (\frac{(1-p)e}{2}, \frac{\nu}{2})$. In this case, $\nu' = \nu_3$. Again by convexity of welfare when $J = \bar{\gamma}_2$ we have that welfare over $\nu \in [0, \nu_2]$ is maximized at the boundary. Comparing, voter welfare is maximized at $\nu_2$ if and only

$$-2(\bar{\gamma}_2(0) + \phi) \leq -(2 - \frac{m}{e})(2\phi - e) - \frac{m}{e}(pe + (1 - p)m)$$

$$\Leftrightarrow -2\left(\frac{1-p}{1+p}(m - \phi) + \phi\right) - (2 - \frac{m}{e})(2\phi - e) - \frac{m}{e}(pe + (1 - p)m),$$

which always holds by $\phi < e/2$, or $e > 2\phi$. If $\nu \in (\nu_2, \nu')$ then $J = \phi - e$, which is constant in $\nu$. Consequently, voter welfare is strictly decreasing in $\nu$ for $\nu > \nu_2$. Hence, the optimal vacancy rate is $\nu^* = \nu_2$.

Finally, consider $\phi < \frac{(1-p)e}{2}$. In this case, $\nu' = \nu_2$ and $J = \bar{\gamma}_2$ for all $\nu$. Since welfare is convex in $\nu$ when $J = \bar{\gamma}_2$, voter welfare is maximized at either $\nu = 0$ or
\( \nu = \nu_2 \). Voter welfare is thus maximized at \( \nu_2 \) if and only if

\[
-2(\gamma_2(0) + \phi) \leq -(2 - \frac{m}{e})(2\phi - e) - \frac{m}{e}(pe + (1 - p)m)
\]

\[
\Leftrightarrow -2\left(\frac{1-p}{1+p}(m-\phi) + \phi\right) \leq -(2 - \frac{m}{e})(2\phi - e) - \frac{m}{e}(pe + (1 - p)m),
\]

which always holds by \( \phi < \frac{(1-p)e}{2} \), or \( e > \frac{2\phi}{1-p} \).

Thus, \( \nu^* \) is given by

\[
\nu^* = \begin{cases} 
\nu_1 & \text{if } e > \bar{e} \\
\nu_2 & \text{if } e < \bar{e},
\end{cases}
\]

where \( \bar{e} \) solves (76) at equality and is the unique solution between \( (\frac{2\phi}{1+p}, 2\phi) \). As both \( \nu_1 \) and \( \nu_2 \) are strictly decreasing in \( e \) and \( \nu_1 \geq \nu_2 \) we have that \( \nu^* \) is decreasing in \( e \). Moreover, \( \nu_1 \) is increasing in \( p \), while \( \nu_2 \) is not changing in \( p \), and \( \frac{\partial \nu}{\partial p} < 0 \).

Thus, \( \nu^* \) is always weakly decreasing in \( p \).

**Extension**

Before moving on to our results, it is first useful to establish some notation and derive some preliminary results. We first establish notation that allows us to derive the voter’s expected utility for the incumbent and challenger, given the first period appointee and the retiring justice. Then, we characterize the sets of \( J_1 \) that are “safe” for the incumbent and challenger, as in the baseline model.

Let \( J_1^{med} \) be the ideal point of the median justice of the court in period \( t \). In the second period, an executive with ideal point \( i \) chooses policy

\[
x_1^*(J_2^{med}) = \arg \max_{x \in [J_2^{med} - \phi, J_2^{med} + \phi]} -|x - i|
\]

If the second-period politician is able to appoint a new justice, she chooses \( J_2 \) to solve

\[
\max_{J_2 \in \mathbb{R}} -|x_1^*(J_2^{med}(J_2)) - i|.
\]
Let $J_2^*(i)$ be a solution to the above problem. Let $J_2^{med}(J_1) = Med\left(L_1, L_2, R_1, R_2, J_1\right)$, i.e., the median when $J_1$ is appointed in the first period and the second-period politician is unable to appoint a new justice. Let $J_2^{med}(J_2|J_1, j)$ denote the median justice of the court if the second-period politician appoints justice $J_2$ after justice $j \in \{L_1, L_2, R_1, R_2\}$ retires, and just $J_1$ was appointed in the first period.

The voter’s expected utility from reelecting an extreme incumbent, given first-period appointee $J_1$ and justice $j \in \{L_1, L_2, R_1, R_2\}$ may retire, is

$$-\nu|x_e^*(J_2^{med}(J_1^*(e)|J_1, j))| - (1 - \nu)|x_e^*(J_2^{med}(J_1))|.$$

The voter’s expected utility from electing the challenger, given $J_1$, is

$$-\nu\left(-p|x_{-e}^*(J_2^{med}(J_1^*(-e)|J_1, j))| - (1 - p)|x_{-m}^*(J_2^{med}(J_1^*(-m)|J_1, j))|\right)$$

$$- (1 - \nu)\left(-p|x_{-e}^*(J_2^{med}(J_1))| - (1 - p)|x_{-m}^*(J_2^{med}(J_1))|\right)$$

With these in hand, we next define the safe sets for the incumbent. Throughout, to eliminate uninteresting cases in which the incumbent is always safe, we maintain the assumption that when a vacancy arises from $L_1$ or $L_1$, that the incumbent is safe at $\nu = 0$ and unsafe at $\nu = 1$. Note that this always holds if ideal points on the court are symmetric about 0.

First, suppose that a retirement may come from $L \in \{L_1, L_2\}$. We consider three cases based on the location of the first-period justice.

1. $J_1 \leq L_1$. If a retirement comes from $L_2$, then the election is safe for $I$ if

$$-\nu|x_e^*(R_1)| - (1 - \nu)|x_e^*(L_1)| \geq -p|x_{-e}^*(L_1)| - (1 - p)m. \quad (77)$$

By assumption, this inequality holds at $\nu = 0$ but does not hold at $\nu = 1$. Note that the LHS is decreasing in $\nu$ while the RHS is constant in $\nu$. Therefore, there exists a $\bar{\nu}^I < 1$ such that the inequality holds iff $\nu \leq \bar{\nu}^I$.

Next, if a vacancy arises from $L_1$, then the election is safe for $I$ if

$$-\nu|x_e^*(R_1)| - (1 - \nu)|x_e^*(L_1)|$$

$$\geq p\left[-\nu|x_{-e}(\max\{L_2, J_1\})| - (1 - \nu)x_e^*(L_1)\right] - (1 - p)m.$$
By assumption this inequality holds at $\nu = 0$ but does not hold at $\nu = 1$. As before, the LHS is decreasing in $\nu$ while the RHS is constant in $\nu$. Therefore, there exists a $\overline{\nu} < 1$ such that the inequality holds iff $\nu \leq \overline{\nu}$.

2. $J_1 \in [L_1, R_1]$. In this case, the election is safe for $I$ if

$$-\nu|x_e^*(R_1)| - (1 - \nu)|x_e^*(J_1)| \geq -p|x^-_e(J_1)| - (1 - p)|x^-_m(J_1)|. \quad (78)$$

Recall that if $\nu \leq \overline{\nu}$ that inequality (77) holds. Comparing the above inequality to inequality (77), it follows that if $\nu < \overline{\nu}$, there exists an $J_1 < J^I(\nu)$ such that the above inequality holds for $J_1 < J^I(\nu)$ and does not hold otherwise.

3. $J_1 > R_1$. In this case, the election is safe for $I$ if

$$-\nu|x_e^*(\min\{J_1, R_2\})| - (1 - \nu)|x_e^*(R_1)| \geq -p|x^-_e(R_1)| - (1 - p)|x^-_m(R_1)|.$$

Note that the right hand side is decreasing in $\nu$, and that the inequality does not hold for $\nu = 0$. Therefore, it does not hold in this case.

Next, assume the justice at risk to retire is $R \in \{R_1, R_2\}$. We consider three cases based on the location of the first-period justice.

1. $J_1 \leq L_1$. The election is safe for $I$ if

$$-|x_e^*(L_1)| \geq \nu \left(-p|x^-_e(\max\{L_2, J_1\})| - (1 - p)m\right) + (1 - \nu) \left(-p|x^-_e(L_1)| - (1 - p)m\right).$$

This always holds, by assumption that $L_1 + \phi < m$.

2. $J_1 \in [L_1, R_1]$. The election is safe for $I$ if

$$-|x_e^*(J_1)| \geq \nu \left(-p|x^-_e(L_1)| - (1 - p)m\right) + (1 - \nu) \left(-p|x^-_e(J_1)| - (1 - p)|x^-_m(J_1)|\right) \quad (79)$$

By assumption this inequality does not hold at $\nu = 1$ and $J_1 = R_1$. Increasing $J_1$ decreases the RHS and increases the LHS. Therefore, there exists $\overline{J^I} \in (L_1, R_1)$ such that this holds for $J_1 \leq \overline{J^I}$ and does not hold for $J > \overline{J^I}$.
3. \( J_1 \geq R_1 \). We break this into two cases, depending on if the judge who may retire is \( R_1 \) or \( R_2 \), however, the conclusion remains the same regardless of the judge.

(a) \( R_1 \) may retire. The election is safe for \( I \) if

\[
-\nu |x_e^*(\min\{J_1, R_2\})| - (1 - \nu) |x_e^*(R_1)| \\
\geq \nu \left( -p |x_e^*(L_1)| - (1 - p)m \right) + (1 - \nu) \left( -p |x_e^*(R_1)| - (1 - p) |x_m^*(R_1)| \right).
\]

This never holds.

(b) \( R_1 \) may retire. The election is safe for \( I \) if

\[
-|x_e^*(R_1)| \\
\geq \nu \left( -p |x_e^*(L_1)| - (1 - p)m \right) + (1 - \nu) \left( -p |x_e^*(R_1)| - (1 - p) |x_m^*(R_1)| \right).
\]

This never holds.

**Proposition 6.** For any \( \nu \), the set of incumbent-safe appointees when there may be a left-leaning vacancy is a subset of the set of incumbent-safe appointees when there may be a right-leaning vacancy.

From the analysis of safe regions, we have that if the judge at risk of leaving is \( R \in \{R_1, R_2\} \) then, for any \( \nu \), the set of incumbent-safe appointments is given by \( J_1 \leq J_R^I \), where \( J_R^I \) solves equation (79) with equality. Additionally, we have that if the judge at risk of leaving is \( L \in \{L_1, L_2\} \) then, there is an \( I_L^I \) such that if \( \nu \leq \nu_L^I \), then the set of incumbent-safe appointments is given by \( J_1 \leq J_L^I \), where \( J_L^I \) solves equation (78) with equality.

If the judge at risk of leaving is left-leaning the incumbent is safe for \( J_1 \leq L_1 \) if and only if \( \nu \) is sufficiently low. However, if the judge at risk of leaving is right-leaning, then the incumbent is always safe for \( J_1 \leq L_1 \). Next, consider \( J_1 \geq R_1 \). Here, the incumbent is never safe regardless from which side the judge may retire. Finally, consider the case where \( J_1 \in [L_1, R_1] \). When the judge to leave is right-leaning there is always a \( I_L^I \) such that if \( J_1 \leq \nu^* \), then I is safe. On the other hand, if the judge to leave is left-leaning, then this is only the case for \( \nu \) sufficiently low. Assume \( \nu < \nu_L^I \) to complete the proof we show that \( \nu_L^I(\nu) < \nu_R^I(\nu) \), where
\( J^I_L(\nu) \) solves equation (78) and \( J^I_R(\nu) \) solves equation (79). For any \( \nu \) and \( J_1 \) the LHS of (79) \( \geq \) LHS (78) by \( |x^*_e(J_1)| \leq |x^*_e(R_1)| \) for \( J_1 \in [L_1, R_1] \). Additionally, for any \( \nu \) and \( J_1 \) we have that RHS (79) \( \leq \) RHS (78) by \( |x^*_e(L_1)| \geq |x^*_e(J_1)| \) and \( |m| > |x^*_e(J_1)| \) for \( J_1 \in [L_1, R_1] \). Thus, inequality (79) holds for a larger set of \( J_1 \) than does inequality (78). By our characterization of these sets of \( J_1 \) this implies \( J^I_L < J^I_R \) for all \( \nu \leq \nu_L \).

**Proposition 7.** If office benefit is sufficiently high, a fully informative equilibrium does not exist.

**Proof.** Recall that in an informative appointments equilibrium, it must be the case that a type \( e \) incumbent does not wish to deviate from their strategy to mimic the appointment and policy decision of type \( m \). In a slight abuse of notation, fix an informative appointments equilibrium and let \( u^*_e(e) \) be the \( e \) type’s payoff of sticking to their proposed strategy in an informative appointments equilibrium, and let \( u^*_e(m) \) be the \( e \) type’s payoff of deviating to mimic the appointment and policy decision of type \( m \). For an informative appointments equilibrium to exist, it must be the case that

\[
    u^*_e(e) - u^*_e(m) \geq \beta.
\]

Note that the left hand side of this inequality is bounded from below, as type \( m \)’s appointment decision cannot push the median of the court arbitrarily far to the left. As the right hand side of the inequality is unbounded, it follows that there exists a \( \beta^{MTM} \) such that for \( \beta > \beta^{MTM} \), an informative appointments equilibrium does not exist. \( \square \)
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