

# Increasing Leverage: Judicial Review as a Democracy-Enhancing Institution

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## ABSTRACT

Although judicial review is used to police constitutional boundaries, the practice raises serious democratic concerns because unelected judges can overrule the decisions of political majorities. Using an agency model we show that judicial review has a heretofore unacknowledged democracy-enhancing effect. By constraining the policy choices made by elected representatives, judicial review increases the importance of office benefits as compared to policy benefits, making it more likely that politicians behave in the voters' best interests. Politicians do so across policy issues, including those that courts cannot review, leading to a spillover effect. These effects do not depend on the preferences of the court, nor on the courts' decisions being observed by the voters. The overall impact judicial review has on democracy is ambiguous, however, because this democracy-enhancing effect comes at the expense of turning some policies over to the courts. We suggest that this ambiguity can be resolved

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in favor of democracy by tailoring the courts' jurisdiction or standards of review.

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A key question facing a representative democracy is how to ensure that government officials do not abuse the powers that have been delegated to them. Elections are the central institutional strategy for doing so because they allow voters to both punish bad behavior and to select representatives that have their best interest at heart. But, as recent studies of electoral accountability show,<sup>1</sup> elections are imperfect tools for inducing representatives to conform their policy decisions to the preferences of the citizens. Another strategy is to impose constitutional limits on representatives' authority. Such limits can be substantive: constitutions often include bills of rights or other provisions that limit the policies the government can enact. Or, the constitution can divide power amongst different government entities. In the United States, and in many other states, the primary responsibility to interpret and enforce these limits falls to the courts; the decisions made by elected officials are subject to judicial review.

Judicial review, however, raises concerns of its own: what prevents judges from using judicial review to promote their own preferences instead of faithfully following the constitution or the public good? This concern is exacerbated because judicial review typically entails unelected and democratically unaccountable courts being empowered to override the decisions made by elected representatives. This problem has been labeled judicial review's "countermajoritarian difficulty" (Bickel, 1986) and it has been at the center of an on-going debate in democratic and constitutional theory (Ackerman, 1984; Breyer, 2011; Chemerinsky, 1984; Friedman, 2002; Griffin, 1988). The countermajoritarian difficulty has also motivated a number of critiques of the practice of judicial review (Kramer, 2004; Tushnet, 2000; Waldron, 2006), recommendations for how courts should conduct themselves (Breyer, 1999; Calabresi, 1997; Scalia, 1989), and important, sometimes landmark, judicial decisions (*Chevron v. NRDC*, 1984; *TVA v. Hill*, 1978). The question ultimately

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<sup>1</sup>See Ashworth (2012) for an overview.

becomes whether the benefits of this practice outweigh its costs and risks.

Our contribution to the debate is to show that judicial review may increase the influence that voters are able to exert over their representatives in ways that have been unnoticed so far and that do not depend on the policy preferences of the judges. Moreover, we show that the ability to hold elected officials accountable is increased even with respect to policies that the courts *do not and cannot* review.<sup>2</sup> So, although judicial review is countermajoritarian — in the sense that actors who are less responsive to the political majority are given the power to trump those who are more so — its impact on democratic rule is counterbalanced by a democracy-enhancing effect. The overall implications for majoritarianism and democracy are thus more ambiguous than they first appear. In addition, to the extent that attention has been focused on policies that fall within the courts' jurisdiction, the influence of judicial review may have been systematically understated. By showing how judicial review may affect decision-making on nonjusticiable policy dimensions as well, we reveal that the actual impact of judicial review on decision-making may be much greater and more pervasive than has previously been recognized by political scientists and constitutional scholars.

We explicate this argument with a game-theoretic agency model with multiple policy dimensions in which elected officials care both about holding office and policy.<sup>3</sup> An elected official may have policy preferences identical to the voters' (in which case we refer to him as being congruent) or he may have policy preferences that differ (in which case he is noncongruent). With and without judicial review, there are conditions under which, in order to conceal from the voters that he is noncongruent and gain reelection, a noncongruent official needs to choose the same policies as a congruent one on all policy

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<sup>2</sup>Courts may not review a policy because they lack jurisdiction over the dispute, use an extremely lax standard of review, or have limited resources that prevent them from hearing every case. We discuss the courts' limited jurisdiction and its role in our analysis when we introduce judicial review to our model.

<sup>3</sup>Hence, as in many models of electoral accountability (see Footnote 7), we focus on agency issues that arise when politicians do not solely care about holding office. It should be clear, however, that we are not stacking the deck against representative democracy in doing so. As is shown by the pandering literature, other agency issues arise when politicians only care about retaining office (cf. Fox, 2007; Fox and Shotts, 2009; Fox and Van Weelden, 2010, 2012; Maskin and Tirole, 2004).

dimensions, including those that lie outside the courts' jurisdiction. Without judicial review, this may be very costly to the noncongruent official policy-wise because he needs to implement policies he dislikes on all dimensions. Consequently, a noncongruent official who cares enough about policy may choose to implement his preferred policies even at the cost of certain electoral defeat. If a subset of those policy dimensions is subject to judicial review, however, the official's effective policy control is being reduced to the remaining, nonjusticiable, policy dimensions. This reduction of policy control makes seeking reelection by choosing the same policies as a congruent official on all dimensions less costly in opportunity terms: because the policies on the justiciable dimensions are ultimately controlled by the courts, a noncongruent official mimicking a congruent one is now giving up his policy satisfaction on a smaller subset of dimensions. Therefore, with judicial review, a noncongruent official is more likely to seek reelection by choosing the same policies as a congruent official, *including on dimensions that lie outside the court's jurisdiction.*

We are not unique in finding that judicial review can sometimes have the unexpected effect of improving electoral control (see Fox and Stephenson, 2011, 2014a,b). Our contribution is twofold. First, and most importantly, while Fox and Stephenson (2011, 2014a,b) consider a single-dimensional policy space and establish that judicial review can have a democracy-enhancing effect on this dimension, we show that judicial review on one policy dimension can have a democracy-enhancing effect even on policy dimensions which are not justiciable. Second, the mechanism behind this beneficial effect of judicial review does not rely on the court having specific preferences in favor of or against the electorate (as in Fox and Stephenson (2011, 2014a,b)) nor on the court having any specialized information beyond the information that is available to the electorate (as in Fox and Stephenson (2011, 2014a)). Consequently, our results do not depend on the voters observing the decision or knowing the policy preferences of the court.<sup>4</sup>

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<sup>4</sup>This also distinguishes our approach from Carrubba (2009), Carrubba and Zorn (2010), Law (2009), Staton (2006), Stephenson (2004), and Vanberg (2001) who study how the threat of public opinion backlashes, against those who defy the judiciary, affects the interactions between the judiciary and other governmental or legislative entities. It is also not the case in our model that judicial review improves policymaking by revealing new information, as in Gailmard and Patty (2012), Rogers (2001), and Stephenson (2006).

Despite this democracy-enhancing effect, judicial review represents something of a trade-off. On the one hand, it increases voter control over elected officials. On the other hand, it entails turning over control of some policies to the judiciary, an institution that is not democratically accountable. Judicial review's overall effect on democracy is therefore ambiguous. Moreover, because it increases the incentives for noncongruent politicians to mimic the behavior of congruent ones, judicial review reduces the voters' ability to distinguish officials on the basis of which ones share their policy preferences and which do not. Consequently, the welfare effects of judicial review are also ambiguous. They depend in particular on the quality of the mechanisms used to select judges: as expected, more public-spirited judges lead to more beneficial welfare effects from judicial review. We show, however, that even judges unlikely to act in the public's best interests can make the voters better off. Finally, our arguments suggest that these trade-offs could be engineered such that judicial review, on balance, enhances both democracy and voter welfare. If the courts leave alone the issues that are most important to the voters, but that elected officials still value, then judicial review involves ceding control over less important issues in exchange for greater control over those that the voters deem more important. If the courts' jurisdiction were tailored in this manner, then judicial review's countermajoritarian character would be mitigated and it is also more likely to make the voters better off.

More broadly, this paper offers an account of how constitutional limits on representatives' powers on some policy dimensions, by reducing the scope of elected officials' authority, increase the relative attractiveness of retaining office and thereby increase democratic accountability on other issues. The primal application of this insight is to judicial review, which casts the judiciary as interpreter and enforcer of these constitutional limits, but any institution that restricts the scope of the elected officials' authority will generate similar effects. For example, in a related model, Le Bihan (2014) shows that citizen-initiated referenda may improve accountability on policy dimensions on which no referendum may be held. Similarly, the bureaucracy could generate a democracy-enhancing effect along these lines: some policies would be delegated to an agency, thereby restricting the scope of legislative authority. In these other cases, however, attention should be paid to potential institutional differences. For instance, Congress has a wider

array of tools at its disposal to discipline and influence the bureaucracy than it does to sway the courts. The driving mechanism in our paper is that judicial review reduces politicians' control on some policy dimensions, while leaving their authority intact on others. Thus, our paper is also related to work on issue unbundling (see Ashworth and Bueno de Mesquita, 2013; Berry and Gersen, 2008; Besley and Coate, 2003) and clarity of responsibility (see Bueno de Mesquita and Landa, 2013) which shows that voter control can be improved by dividing tasks among elected offices. The main intuition is that the voter can provide elected representatives with more precise incentives because she has more arrows in her electoral quiver. This has the effect of improving decision-making on the unbundled tasks. In this paper the electoral incentives are strengthened, but through the addition of a countermajoritarian decision-maker and within the context of a single election. Furthermore, the electoral incentives are improved with regards to the tasks that remain under the purview of the elected representative, that is, those that are not turned over to the courts through judicial review.

## 1 Baseline Model

In order to illustrate the effects of judicial review, we begin with a baseline policymaking model to which we will then add the judiciary. Consider a policymaking system with two players: an incumbent legislature and a voter. The model consists of two periods, in which three policies,  $p_1, p_2, p_3 \in \{-1, 1\}$ , are enacted. Policies  $p_1$  and  $p_2$  are enacted in the first period;  $p_3$  is enacted in the second period. Whether a policy is in the voter's best interest depends on the relevant state of the world,  $\omega_1, \omega_2, \omega_3 \in \{-1, 1\}$ . The voter receives a payoff of 1 when a policy matches the state of the world (e.g.,  $p_1 = \omega_1$ ) and 0 otherwise. The utility of the voter can thus be written compactly as

$$U_V(\mathbf{p}, \boldsymbol{\omega}) = \sum_{i=1}^3 1_{\{p_i = \omega_i\}},$$

where  $\mathbf{p} \equiv (p_1, p_2, p_3)$ ,  $\boldsymbol{\omega} \equiv (\omega_1, \omega_2, \omega_3)$  and  $1_{\{p_i = \omega_i\}}$  is an indicator function that takes on value 1 whenever  $p_i = \omega_i$  and 0 otherwise.

Unlike the legislature, which knows the state of the world for each policy dimension, the voter observes state of the world  $\omega_1$ , but not state of the world  $\omega_2$ .<sup>5</sup> Policy  $p_1$  thus corresponds to a policy where at least some of the effects become known to the public relatively quickly (e.g., minimum wage adjustment, tariffs), whereas policy  $p_2$  corresponds to one where the results can only be identified in the long term (e.g., policies concerning climate change). Alternatively,  $p_1$  can be interpreted as a policy issue that is relatively nontechnical. The prior probability that  $\omega_2 = 1$  is  $\alpha \in (\frac{1}{2}, 1]$ , so ex ante the voter prefers  $p_2 = 1$  to be selected. Consequently, we say that policy  $p_2 = 1$  is popular, while  $p_2 = -1$  is unpopular. These policies and states of the world are independent from each other: what the relevant state of the world is for the first policy dimension has no bearing on the state of the world for the second and third policy dimensions.

The legislature can be of two types: congruent or noncongruent. A congruent legislature receives the same policy payoffs as the voter. A noncongruent legislature receives a policy payoff of 1 for each policy that does not match the state of the world ( $p_i \neq \omega_i$ ) and 0 otherwise. The legislature knows its own type, while the voter believes it is congruent with probability  $\pi \in (\frac{1}{2}, 1)$  and noncongruent with probability  $1 - \pi$ .

In the first period, the legislature chooses two policies,  $p_1$  and  $p_2$ . Upon observing these policy choices, as well as state of the world  $\omega_1$ , the voter updates her beliefs about the legislature's type and chooses whether to reelect it. If the voter chooses to dismiss the incumbent legislature, then a new legislature takes office. The newly selected legislature is congruent with probability  $\pi$  and noncongruent with probability  $1 - \pi$ . In the second period, the legislature that wins the election selects a third policy,  $p_3$ , and then the game ends.

To summarize, the baseline model proceeds as follows:

1. *Period 1.* Nature determines states of the world  $\omega_1, \omega_2 \in \{-1, 1\}$  and the legislature's type. These are all revealed to the legislature.
2. The legislature chooses policies  $p_1, p_2 \in \{-1, 1\}$ .
3. The voter observes  $\omega_1, p_1, p_2$ , but not  $\omega_2$ , and chooses whether to reelect the legislature.

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<sup>5</sup>As explained later, it is irrelevant whether the voter observes  $\omega_3$  or not.

4. *Period 2.* Nature chooses  $\omega_3 \in \{-1, 1\}$  and the type of the legislature if there is a new one. These are all revealed to the legislature.
5. The legislature chooses policy  $p_3$ .

In addition to being policy-motivated, the legislature enjoys some benefits merely from holding office, receiving a payoff of  $\gamma > 0$  if reelected at the end of Period 1. As is standard in adverse selection models of electoral accountability, and given that the game ends after the final policy decision  $p_3$ , every type of legislature chooses the policy that corresponds to its policy preferences in the second period: a congruent legislature sets  $p_3 = \omega_3$ , while a noncongruent legislature chooses  $p_3 \neq \omega_3$ . Hence, the payoff of reelection to the legislature is  $\gamma + 1$ : the value  $\gamma$  of holding office for another period plus the policy payoff of being able to choose its preferred policy  $p_3$ . The expected payoff of losing the election, in turn, is  $\pi$  for a congruent legislature and  $1 - \pi$  for a noncongruent one because with probability  $\pi$  the newly elected legislature is congruent and chooses  $p_3 = \omega_3$ , whereas with probability  $1 - \pi$  it is noncongruent and chooses  $p_3 \neq \omega_3$ . Finally, let  $r(p_1, p_2; \omega_1)$  be the probability that the voter reelects the legislature upon observing the policy vector  $(p_1, p_2)$  and state of the world  $\omega_1$ . The utility of a congruent legislature from implementing policy vector  $(p_1, p_2)$  when the vector of states of the world is  $(\omega_1, \omega_2)$  can thus be written as

$$\begin{aligned} U_C((p_1, p_2), r | (\omega_1, \omega_2)) \\ = \sum_{i=1}^2 1_{\{p_i = \omega_i\}} + r(p_1, p_2; \omega_1)(\gamma + 1) + (1 - r(p_1, p_2; \omega_1))\pi, \end{aligned}$$

and the utility of a noncongruent legislature can be written as

$$\begin{aligned} U_N((p_1, p_2), r | (\omega_1, \omega_2)) \\ = \sum_{i=1}^2 1_{\{p_i \neq \omega_i\}} + r(p_1, p_2; \omega_1)(\gamma + 1) + (1 - r(p_1, p_2; \omega_1))(1 - \pi). \end{aligned}$$

As indicated in Propositions 1 and 2, we constrain  $\gamma$  such that  $\gamma \in (1 - \pi, 2 - \pi)$ .<sup>6</sup> This allows us to concentrate on the most interesting

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<sup>6</sup>This range of values is determined in part by the incumbent legislature's expected payoff for policy  $p_3$ , even if it is not reelected.



aspects of our analysis. If the rewards from office are very limited ( $\gamma \leq 1 - \pi$ ), then the benefit of reelection, valued at  $\gamma + 1$ , is not high enough to induce the legislature to incur the cost of going against its policy preferences on even a single dimension in the first period. Formally, all types of legislature separate and enact their most preferred policies with and without judicial review. If the rewards from office, relative to policy, are very high ( $\gamma \geq 2 - \pi$ ), then the legislature does whatever is necessary to keep its position. Formally, noncongruent legislatures pool with congruent ones in the first period with and without judicial review. We also have substantive reasons to focus on the case where the perks of holding office are limited relative to policy rewards. Each term a legislature enacts numerous policies concerning a wide range of issues. If we believe that legislators care about policy at all, then it is natural to consider that at some point the benefit of selecting their most preferred policies on all these various issues or policy dimensions outweighs the perks of holding office.<sup>7</sup>

### 1.1 Equilibrium

The solution concept we use is perfect Bayesian equilibrium. Informally, a perfect Bayesian equilibrium requires (1) that every player of the game chooses the strategy which maximizes her expected utility given her beliefs and the strategies of the remaining players and (2) that beliefs are computed using Bayes' rule whenever possible. As is generally the case in signaling games, the models here exhibit a multiplicity of equilibria. We rule out unrealistic equilibria by restricting attention to those where the out-of-equilibrium beliefs satisfy Criterion D1 (Cho and Kreps, 1987).<sup>8</sup> In this section, we characterize the equilibrium and give an intuition for its existence.

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<sup>7</sup>Indeed, in models of electoral accountability in which politicians do not care solely about the benefits of holding office, the standard assumption is that the benefits of holding office are limited. This is the case in pure moral hazard models (see among others Bueno de Mesquita, 2007; Bueno de Mesquita and Landa, 2013; Ferejohn, 1986; Persson *et al.*, 1997; Seabright, 1996), in career concerns models (see Alt and Lassen, 2006; Ashworth, 2005; Ashworth and Bueno de Mesquita, 2006, 2008; Gehlbach, 2006; Lohmann, 1998; Persson and Tabellini, 2000), and in signaling models of electoral accountability (see Ashworth and Shotts, 2010; Besley, 2006; Canes-Wrone *et al.*, 2001; Daley and Snowberg, 2011; Fox and Stephenson, 2011, 2014b; Maskin and Tirole, 2004).

<sup>8</sup>As this is not a standard signaling game we use a straightforward adaptation of D1 to our model. The details are given in the supplemental online Appendix.

Because all types of legislature choose policy according to their policy preferences in the second period, the voter's second period payoff is 1 when a congruent legislature wins the election, and 0 when a noncongruent legislature wins. On the one hand, the voter's expected payoff from reelecting the incumbent legislature is thus equal to the voter's updated belief that the incumbent legislature is congruent upon observing the vector of first period policy choices  $(p_1, p_2)$  and the state of the world  $\omega_1$ , which we denote  $\mu(p_1, p_2, \omega_1)$ . On the other hand, the probability that the challenger is congruent is  $\pi$ . Consequently, it is optimal for the voter to reelect the incumbent legislature only if  $\mu(p_1, p_2, \omega_1) \geq \pi$ : the voter chooses to retain the incumbent legislature only if her posterior belief that the incumbent legislature is congruent is greater than her prior belief that the challenger is congruent.

The interesting aspects of behavior occur in Period 1 and turn on whether a noncongruent legislature wants to appear congruent (i.e., to what extent a noncongruent legislature wants to pool with a congruent one). The legislature has the choice between four first period policy vectors:  $(p_1 = \omega_1, p_2 = \omega_2)$ ,  $(p_1 = \omega_1, p_2 \neq \omega_2)$ ,  $(p_1 \neq \omega_1, p_2 = \omega_2)$ , and  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$ . We consider a natural strategy for a congruent legislature: signaling to the voter that it is congruent by following its preferences and enacting policies that are in the voter's best interest, that is, choosing  $(p_1 = \omega_1, p_2 = \omega_2)$ . In the Appendix, we show that this is the behavior adopted by a congruent legislature in the unique equilibrium that satisfies *D1*. Because the voter observes  $\omega_1$ , a straightforward implication of this behavior is that if a noncongruent legislature chooses  $p_1 \neq \omega_1$ , then the voter learns that the legislature is noncongruent and throws it out of office.

We now turn to the behavior of a noncongruent legislature, which is less straightforward. A noncongruent legislature faces the following trade-off: choosing  $p_i = \omega_i$  rather than  $p_i \neq \omega_i$ ,  $i = 1, 2$ , has a potential upside and a certain downside. On the upside, choosing  $p_i = \omega_i$  potentially conceals that the legislature is noncongruent from the voter and may improve its chances of reelection. The downside is that the legislature goes against its policy preferences on policy dimension  $i$  and receives a policy payoff of 0 from that choice instead of the policy payoff of 1 it gets from choosing  $p_i \neq \omega_i$ . When the benefits of holding office are limited,  $\gamma < 2 - \pi$ , the potential upside is never sufficient to induce a noncongruent legislature to choose first period policies that are

completely contrary to its policy preferences. On the one hand, when choosing  $(p_1 = \omega_1, p_2 = \omega_2)$  a noncongruent legislature receives a policy payoff of 0 in the first period, so overall  $(p_1 = \omega_1, p_2 = \omega_2)$  yields at most a payoff of  $\gamma + 1$  to it. On the other hand, if a noncongruent legislature chooses  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$ , then the voter infers the legislature's type and does not reelect it, but the legislature still receives all of the policy benefits from being in power in the first period. So, a noncongruent legislature receives an overall payoff of  $3 - \pi$ , which includes the benefits from enacting its preferred  $p_1$  and  $p_2$  as well as the chance of seeing its preferred  $p_3$  enacted by its replacement. Given that  $\gamma < 2 - \pi$  and thus  $3 - \pi > \gamma + 1$ , the benefits of holding office in the second period are not sufficient to induce the noncongruent legislature to enact policy contrary to its policy preferences on both first period dimensions.

A noncongruent legislature also never chooses  $(p_1 \neq \omega_1, p_2 = \omega_2)$  in equilibrium. If it enacts  $(p_1 \neq \omega_1, \cdot)$ , it reveals that it is noncongruent to the voter. Hence, the voter does not reelect it regardless of whether it enacts  $(p_1 \neq \omega_1, p_2 = \omega_2)$  or  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$ , and the latter yields a noncongruent legislature a greater payoff.

In equilibrium, then, the noncongruent legislature chooses between  $(p_1 = \omega_1, p_2 \neq \omega_2)$  and  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$ . An equilibrium in which the noncongruent legislature chooses  $(p_1 = \omega_1, p_2 \neq \omega_2)$  can only be sustained if it is more likely to be reelected with that policy vector as opposed to its preferred  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$  vector. If the voter could observe  $\omega_2$ , she would infer the legislature's type from  $p_2 \neq \omega_2$  and would dismiss it accordingly. In such a case, there would be no upside to choosing  $(p_1 = \omega_1, p_2 \neq \omega_2)$  leading a noncongruent legislature to choose  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$  in equilibrium. But the voter does not observe the state of the world  $\omega_2$ . She only observes whether the legislature enacts  $p_2 = 1$  or  $p_2 = -1$  and not whether that policy is in her best interest ( $p_2 = \omega_2$ ) or not ( $p_2 \neq \omega_2$ ). This opens up the possibility that a noncongruent legislature can be reelected even when choosing  $(p_1 = \omega_1, p_2 \neq \omega_2)$ .

Indeed, in equilibrium, the noncongruent legislature chooses  $(p_1 = \omega_1, p_2 \neq \omega_2)$  when  $\omega_2 = -1$ . To illustrate, consider a strategy profile where, as before, the congruent legislature chooses  $(p_1 = \omega_1, p_2 = \omega_2)$  and the noncongruent legislature chooses  $(p_1 = \omega_1, p_2 = 1)$  when  $\omega_2 = -1$ . Because a noncongruent legislature never chooses  $(p_1 = \omega_1, p_2 = \omega_2)$ , the voter knows, upon observing  $(p_1 = \omega_1, p_2 = 1)$ , that

one of two things has happened: either the legislature is congruent and the state of the world is  $\omega_2 = 1$  or the legislature is noncongruent and the state of the world is  $\omega_2 = -1$ . Because the voter believes *ex ante* that  $\omega_2 = 1$  is more likely than  $\omega_2 = -1$  she updates her beliefs about the type of the legislature favorably upon observing  $(p_1 = \omega_1, p_2 = 1)$ :  $\mu(p_1 = \omega_1, p_2 = 1) > \pi$ . Upon observing this policy vector the voter believes that the incumbent legislature is more likely to be congruent than a randomly drawn replacement legislature. As a consequence, she reelects the incumbent legislature. The payoff to the noncongruent legislature of choosing  $(p_1 = \omega_1, p_2 \neq \omega_2)$  in this case is then  $2 + \gamma$ , which, because  $\gamma > 1 - \pi$ , is greater than the payoff of  $3 - \pi$  it receives from enacting its most preferred first period policies and subsequently being thrown out of office. The benefits of being reelected are sufficient to induce the noncongruent legislature to go against its preferences on one, but not both, policy dimensions.

The case when  $\omega_2 = 1$  is a little more complicated. First, we show that the noncongruent legislature never chooses  $(p_1 = \omega_1, p_2 \neq \omega_2)$  with certainty in equilibrium. Consider the contrary, where the noncongruent legislature chooses  $(p_1 = \omega_1, p_2 = -1)$ . The effects are the mirror image of those described in the previous paragraph. The voter believes that  $\omega_2 = 1$  is more likely than  $\omega_2 = -1$ . So, when she observes  $(p_1 = \omega_1, p_2 = -1)$ , she updates her beliefs about the legislature's type unfavorably, inferring that it is more likely that the legislature is noncongruent and choosing not to reelect it. Consequently, there is no upside for the noncongruent legislature to go against its policy preferences with regards to  $p_1$ .

When  $\omega_2 = 1$  the noncongruent legislature also does not choose  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$  with certainty in equilibrium. If it did, the voter would be certain the legislature is congruent upon observing  $(p_1 = \omega_1, p_2 = -1)$ , prompting her to reelect it. But then, the noncongruent legislature would have incentive to deviate to  $(p_1 = \omega_1, p_2 = -1)$ . Therefore, in equilibrium, the noncongruent legislature mixes between  $(p_1 = \omega_1, p_2 \neq \omega_2)$  and  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$ . For the noncongruent legislature to be indifferent between these policies the voter needs to reelect the incumbent with probability  $\frac{1}{\gamma + \pi}$  upon observing  $(p_1 = \omega_1, p_2 = -1)$ . For the voter to be willing to do so, the noncongruent legislature must choose  $(p_1 = \omega_1, p_2 = -1)$  with a probability that leaves the voter indifferent between reelecting and ousting the incumbent. We

thus have the following result:

**Proposition 1 (Equilibrium — Baseline Model).** *In equilibrium*<sup>9</sup>:

*A congruent legislature chooses the policy vector  $(p_1 = \omega_1, p_2 = \omega_2)$ .*

*A noncongruent legislature that observes  $\omega_2 = -1$  chooses  $(p_1 = \omega_1, p_2 = 1)$ .*

*A noncongruent legislature that observes  $\omega_2 = 1$  chooses  $(p_1 = \omega_1, p_2 = -1)$  with probability  $\frac{1}{\alpha} - 1$  and  $(p_1 \neq \omega_1, p_2 = -1)$  with probability  $2 - \frac{1}{\alpha}$ .*

*The voter’s reelection strategy is  $r^*(p_1 = \omega_1, p_2 = 1) = 1$ ,  $r^*(p_1 = \omega_1, p_2 = -1) = \frac{1}{\gamma + \pi}$ ,  $r^*(p_1 \neq \omega_1, p_2 = \cdot) = 0$ .*

*If  $\gamma \in (1 - \pi, \pi)$  then this equilibrium is the unique one. If  $\gamma \in [\pi, 2 - \pi)$ , then it is the unique equilibrium that survives criterion D1.*

In equilibrium, the electoral mechanism fails to provide sufficient incentive for elected officials to always act in the voter’s best interests. The congruent legislature behaves optimally from the point of view of the voter because it selects  $p_i = \omega_i$  for all  $i \in \{1, 2, 3\}$ , but that is what it would do regardless of electoral incentives. And, the noncongruent legislature always implements a policy that is not in the voter’s best interests, namely  $p_2 \neq \omega_2$ , and chooses the noncongruent policy  $p_1 \neq \omega_1$  with positive probability. In some cases, the noncongruent legislature thus chooses to go against the public interest on both policy dimensions by choosing  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$ , a strategy we call *take the money and run*. This strategy clearly signals the legislature’s type to the voter, so the legislature is in effect exchanging its opportunity for reelection for the chance to enact its preferred policies in Period 1.

The electoral mechanism also fails to completely distinguish good (congruent) types from bad (noncongruent) types. After all, the congruent legislature is sometimes thrown out of office at the end of the first period: the voter does not reelect the legislature with certainty upon observing  $(p_1 = \omega_1, p_2 = -1)$ , so the congruent legislature which has chosen the unpopular, though better for the voter, policy  $p_2$  may lose reelection when the state of the world is  $\omega_2 = -1$ . Moreover, in

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<sup>9</sup>A full, formal statement of the equilibrium, including the beliefs necessary to sustain it is contained in the Appendix. A supplemental online Appendix also contains proofs of the uniqueness of this equilibrium and the application of the D1 criterion.

equilibrium, the noncongruent legislature is always reelected with positive probability, and is reelected with certainty if  $\omega_2 = -1$ . So, in this context, the electoral mechanism fails to both promote optimal behavior and to effectively separate legislatures on the basis of their policy preferences.

## 2 Introducing Judicial Review

We now consider how the introduction of judicial review affects the baseline model by adding a third player, the judiciary. The judiciary has two key institutional features. First, it is countermajoritarian, by which we mean that it is not subject to control by the voters, neither directly through elections nor indirectly through pressure that can be exerted by the legislature. The judiciary only cares about choosing the policy it prefers.<sup>10</sup> Second, for both methodological and substantive reasons, the judiciary has limited jurisdiction — it cannot review every policy. Methodologically, limiting the scope of judicial review allows us to study how it affects policies that it cannot review. Substantively, although federal courts have broad authority, their jurisdiction is limited by Article III of the Constitution as well as doctrines such as justiciability and deferential standards of review (McCloskey, 1962; Schwartz, 1998; Wright *et al.*, 2012). The judiciary's limited jurisdiction can also be interpreted as a resource constraint; the Supreme Court in particular cannot hear every case it might want to (Breyer, 1999). The boundaries of the courts' jurisdiction are, to some extent, determined by the courts themselves. They, for example, have some say in allocating their resources and interpreting the constitutional constraints on their power. For the purposes of this discussion, we treat the courts' jurisdiction as exogenously fixed. It is the product of a related set of strategic interactions — taking into account the courts' interest in conserving their own

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<sup>10</sup>While there is some evidence that federal judges are sensitive to public opinion (Clark, 2009; Dahl, 1957; Friedman, 2009), they are not directly dependent upon it for retaining their positions like elected officials are. Our modeling choices capture this difference in a stylized form. For similar assumptions, see Fox and Stephenson (2011, 2014a,b). We place no restrictions on the preferences of the judiciary, however, so our results still apply to cases where judges are influenced by public sentiment. That would represent a case where  $\pi_J = 1$  or close to it.

resources, conflicts with other institutional actors like Congress,<sup>11</sup> and so on — that are not explicitly modeled here.

We include judicial review in the following way. After the legislature has chosen the first period policies  $p_1$  and  $p_2$ , and prior to the election, the judiciary reviews policy  $p_1$  but not policy  $p_2$ . This captures the judiciary's limited jurisdiction. It can choose to change the legislature's policy choice or not, corresponding to a court's capacity to strike down or uphold a law.<sup>12</sup> The judiciary has access to the same information available to the voter, and like all players it becomes informed about  $\omega_1$ . The judiciary thus reviews the policy about which it is informed. Though, as we show later, our results are not driven by the informational asymmetry between  $p_1$  and  $p_2$ . Like the legislature, the judiciary can be congruent (with probability  $\pi_J \in [0, 1]$ ) or non-congruent (with probability  $1 - \pi_J$ ); its type is only known to itself.<sup>13</sup> Though we use the language of preferences, the judiciary's type can represent constitutional interpretation, legal doctrine, or considerations of the public good. We are agnostic on this point. The model including judicial review is summarized below:

1. *Period 1.* Nature determines the states of the world  $\omega_1, \omega_2 \in \{-1, 1\}$ , the legislature's type, and the judiciary's type.
2. The legislature observes  $\omega_1, \omega_2$ , and its own type, but not the type of the judiciary. The legislature chooses policies  $p_1, p_2 \in \{-1, 1\}$ .
3. The judiciary observes  $\omega_1$  and its type, but not  $\omega_2$ . The judiciary reviews  $p_1$ , choosing  $p_1 \in \{-1, 1\}$ , but not  $p_2$ .

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<sup>11</sup>The extent to which Congress can modify the jurisdiction of the federal courts is the subject of a considerable debate (see Bator, 1981; Caminker, 1994; Gunther, 1984; Hart, 1953; Pfander, 1999; Ratner, 1960; Redish, 1981). The executive may also play a role in defining the courts' jurisdiction (Grove, 2012).

<sup>12</sup>As modeled here, the judiciary is fairly strong: within the scope of its jurisdiction it gets to essentially set policy. Weakening the court so that it could only impose a cost on the legislature — representing perhaps the legislature reenacting the law but modifying it to answer the court's objections or ignoring the court and suffering some loss in perceived legitimacy — would not alter our results, provided the cost the judiciary can impose is not too small.

<sup>13</sup>Because we do not rule out  $\pi_J = 0$  nor  $\pi_J = 1$ , our analysis also holds in those cases where the policy preferences of the court are known to the voter and the legislature.

4. The voter observes  $\omega_1$ ,  $p_1$ , and  $p_2$ , but not  $\omega_2$ . The voter chooses whether to reelect the legislature.
5. *Period 2.* Nature chooses  $\omega_3 \in \{-1, 1\}$ , and the type of the legislature if there is a new one. These are all revealed to the legislature.
6. The legislature chooses policy  $p_3$ .

Like the other players, the judiciary receives a policy payoff of 1 for each policy implemented according to its preferences, matching the state of the world for a congruent judiciary and not matching the state of the world for a noncongruent one. Everything else is identical to the baseline model.

### 2.1 *Equilibria*

The only way the judiciary can improve its payoff is to alter or let stand  $p_1$  according to its own preferences. It follows that a congruent judiciary issues rulings so that  $p_1 = \omega_1$  (i.e., it changes the legislature's policy choice when  $p_1 \neq \omega_1$  and does not when  $p_1 = \omega_1$ ), while a noncongruent judiciary issues rulings so that  $p_1 \neq \omega_1$ . So, with probability  $\pi_J$  the policy implemented on the first dimension is  $p_1 = \omega_1$ , and with probability  $1 - \pi_J$  the policy implemented is  $p_1 \neq \omega_1$ . In the model with judicial review, there exists an infinite number of mixed strategy equilibria with the mixing probabilities specified in the Appendix in Equations (A.1). In all these equilibria the probability with which the legislature chooses  $p_2 = \omega_2$  is the same. All these equilibria are therefore identical in terms of the characteristics that are relevant to our analysis. For ease of exposition, we focus on the equilibrium in which all types of the legislature choose  $p_1 = \omega_1$  because it most closely resembles the equilibrium of the baseline model and allows us to highlight more easily the consequences of judicial review. Proposition 2 describes this equilibrium of the model with judicial review.

**Proposition 2 (Equilibrium with Judicial Review).** *In equilibrium:*

- A congruent legislature chooses the policy vector  $(p_1 = \omega_1, p_2 = \omega_2)$ .*
- A noncongruent legislature that observes  $\omega_2 = -1$  chooses  $(p_1 = \omega_1, p_2 = 1)$ .*



A noncongruent legislature that observes  $\omega_2 = 1$  chooses  $(p_1 = \omega_1, p_2 = 1)$  with probability  $2 - \frac{1}{\alpha}$  and  $(p_1 = \omega_1, p_2 = -1)$  with probability  $\frac{1}{\alpha} - 1$ .

The voter's reelection strategy is  $r^*(p_1 = \omega_1, p_2 = 1) = r^*(p_1 = \omega_1, p_2 = -1) + \frac{1}{\gamma + \pi}$ .

If  $\gamma \in (1 - \pi, \pi)$ , then this is the unique equilibrium in which the congruent legislature chooses  $(p_1 = \omega_1, p_2 = \omega_2)$ . If  $\gamma > \pi$  then it is the unique equilibrium that survives criterion D1 in which the congruent legislature chooses  $(p_1 = \omega_1, p_2 = \omega_2)$ .

As in the baseline model, a congruent legislature chooses  $(p_1 = \omega_1, p_2 = \omega_2)$  in equilibrium. And, as in the baseline model, a noncongruent legislature chooses  $(p_1 = \omega_1, p_2 = 1)$  upon observing  $\omega_2 = -1$ . The difference lies in the equilibrium behavior adopted by a noncongruent legislature when  $\omega_2 = 1$ . In the absence of judicial review, it mixes between  $(p_1 = \omega_1, p_2 \neq \omega_2)$  and  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$ . But, with judicial review it mixes between  $(p_1 = \omega_1, p_2 \neq \omega_2)$  and  $(p_1 = \omega_1, p_2 = \omega_2)$ . In the following paragraphs, we explain how the introduction of judicial review leads a noncongruent legislature to no longer choose  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$ , the take the money and run strategy, and to choose  $(p_1 = \omega_1, p_2 = \omega_2)$  instead.

Recall that the legislature has the choice between four first period policy vectors:  $(p_1 = \omega_1, p_2 = \omega_2)$ ,  $(p_1 = \omega_1, p_2 \neq \omega_2)$ ,  $(p_1 \neq \omega_1, p_2 = \omega_2)$ , and  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$ . In the presence of judicial review, choosing  $p_1 \neq \omega_1$  over  $p_1 = \omega_1$  is no longer valuable to a noncongruent legislature. In either model, enacting  $p_1 \neq \omega_1$  reveals that the legislature is noncongruent, and the voter dismisses the legislature accordingly. In the baseline model this choice yields some benefit to a noncongruent legislature because it sees its preferred policy implemented on the first dimension. This is no longer the case in the presence of judicial review because the policy implemented on the first dimension is ultimately decided by the judiciary: with judicial review a noncongruent legislature's expected policy payoff from choosing  $p_1 \neq \omega_1$  or  $p_1 = \omega_1$  is the same:  $1 - \pi_J$ . In other words, with judicial review, choosing  $p_1 \neq \omega_1$  over  $p_1 = \omega_1$  has a downside, certain dismissal, but no upside. A noncongruent legislature is thus always better off choosing  $(p_1 = \omega_1, \cdot)$

over  $(p_1 \neq \omega_1, \cdot)$ ; in equilibrium noncongruent legislatures pool with congruent legislatures on the first policy dimension.<sup>14</sup>

We now show that it is not optimal for a noncongruent legislature to choose  $(p_1 = \omega_1, p_2 \neq \omega_2)$  deterministically, which implies that it chooses  $(p_1 = \omega_1, p_2 = \omega_2)$  with positive probability in equilibrium. Suppose otherwise. Then, upon observing  $(p_1 = \omega_1, p_2 = 1)$ , the voter believes either that the legislature is congruent and observed  $\omega_2 = 1$  or that it is noncongruent and observed  $\omega_2 = -1$ . Because  $p_2 = 1$  is the popular policy the voter believes it is more probable that the legislature is congruent and chooses to reelect the incumbent. When the voter observes  $(p_1 = \omega_1, p_2 = -1)$ , though, because  $p_2 = -1$  is the ex ante unpopular policy, the voter believes it more probable that the legislature is noncongruent and chooses not to reelect it. A noncongruent legislature thus faces the following trade-off upon observing  $\omega_2 = 1$ . If it sticks to the specified strategy, enacting  $(p_1 = \omega_1, p_2 = -1)$ , it gets to choose its preferred policy  $p_2$ . This, however, comes at the cost of losing the election. If, instead, it deviates to  $(p_1 = \omega_1, p_2 = 1)$ , it goes against its policy preferences on policy dimension  $p_2$ , but it gets reelected. Because  $\gamma > 1 - \pi$ , the benefits of reelection are sufficient to induce a noncongruent legislature to choose  $(p_1 = \omega_1, p_2 = 1)$ .

When  $\omega_2 = 1$  a noncongruent legislature mixes between  $(p_1 = \omega_1, p_2 = 1)$  and  $(p_1 = \omega_1, p_2 = -1)$  in equilibrium and must be indifferent between these two policy vectors. Such indifference is attained when the reelection probabilities satisfy  $r(p_1 = \omega_1, p_2 = 1) = r(p_1 = \omega_1, p_2 = -1) + \frac{1}{\gamma + \pi}$ . In turn, the voter herself must be indifferent between retaining and dismissing the legislature to use such a retention rule. This indifference requires that the voter's posterior belief about the type of the legislature equals her prior beliefs. Otherwise, she retains or dismisses the legislature accordingly. Indeed, the voter's posterior and prior beliefs about the legislature's type are the same in equilibrium because congruent and noncongruent types choose the first period policy vectors observed by the voter with the same probability.<sup>15</sup>

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<sup>14</sup>Analogous logic supports a set of equilibria where congruent legislatures select  $p_1 \neq \omega_1$ . The critical element is that in equilibrium noncongruent legislatures pool with congruent ones with regards to the first policy dimension.

<sup>15</sup>The probability that the congruent legislature chooses  $(p_1 = \omega_1, p_2 = 1)$  is equal to the probability that  $\omega_2 = 1$ , which is equal to  $\alpha$ . The noncongruent legislature

The legislature's choice of policy in Period 1 thus does not reveal any information about its type.

### 3 Judicial Review and Democracy

Comparing Proposition 2 to Proposition 1 illustrates judicial review's effect on democracy. In both the baseline model and the one with judicial review the congruent legislature behaves optimally from the voter's perspective, enacting  $(p_1 = \omega_1, p_2 = \omega_2)$ . In both models the noncongruent legislature exploits the voter's lack of information: it chooses policy  $p_2 = 1$  upon observing  $\omega_2 = -1$ , which, although consistent with the voter's prior is not actually in the voter's best interest. When  $\omega_2 = 1$ , though, judicial review alters the equilibrium behavior of the noncongruent legislature: in the baseline model the noncongruent legislature never acts in the voter's best interests on the second policy dimension, while with judicial review it does so with positive probability.

In this way, judicial review has a democracy-enhancing effect: it increases the influence the voter exercises over the legislature, making it more likely to act in the voter's best interests. In addition, while we are not the only ones to identify a broad effect of judicial review — one that affects policies other than the specific ones the court rules on — the effect we identify is distinct from judicial overhang, policy distortion, and related phenomena that arise from legislating in the shadow of judicial review (Tushnet, 1995, 2000, 2009) because it affects policies that lie outside the court's jurisdiction as well. The effect on the legislature's behavior described here also does not depend on the voter observing the judiciary's decisions, nor does it depend on any popular control of the courts. Moreover, judicial review's democracy-enhancing effect exists regardless of the preferences of the judiciary. Poor or biased judges — that is, when  $\pi_J$  is small or even 0 — still enhance the voter's

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chooses  $(p_1 = \omega_1, p_2 = 1)$  with certainty when  $\omega_2 = -1$  and with probability  $2 - \frac{1}{\alpha}$  when  $\omega_2 = 1$ . Hence, the noncongruent legislature chooses  $(p_1 = \omega_1, p_2 = 1)$  with probability  $1 - \alpha + \alpha(2 - \frac{1}{\alpha}) = \alpha$ . Similar reasoning shows that the congruent, as well as the noncongruent, type of the legislature chooses  $(p_1 = \omega_1, p_2 = -1)$  with probability  $1 - \alpha$ .

control over the legislature. Poor judges can, of course, make the voter worse off, a topic we return to in the next section.

This democracy-enhancing effect of judicial review on nonjusticiable policy dimensions stems not only from the reduced policy costs noncongruent incumbents need to incur when pooling with congruent ones, but also from the way in which judicial review empowers the voter to enforce higher standards for reelection. To illustrate, suppose that the voter observes  $\omega_2$ , the state of the world relevant to the second policy dimension. In the presence of judicial review, there exist two equilibria. As described earlier, judicial review increases the relative value of holding office, and both equilibria thus involve pooling by noncongruent types with congruent ones. In the first equilibrium, congruent and noncongruent legislatures pool on  $(p_1 = \omega_1, p_2 = \omega_2)$ , while in the second they pool on  $(p_1 = \omega_1, p_2 \neq \omega_2)$ .<sup>16</sup> In both cases, the voter is indifferent between retaining and dismissing the legislature on the equilibrium path and in both cases the equilibrium is sustained by having the voter reelect the legislature with sufficiently high probability. Indeed, in the second equilibrium, if the voter does not reelect the legislature upon observing  $(p_1 = \omega_1, p_2 \neq \omega_2)$ , then a congruent legislature deviates to  $(p_1 = \omega_1, p_2 = \omega_2)$ . Therefore, the second equilibrium is sustained by having the voter apply low standards for reelection (reelecting even though the legislature behaved badly on the second dimension), and is unsustainable if the voter sets high standards for reelection (reelecting only if the legislature chooses  $(p_1 = \omega_1, p_2 = \omega_2)$ ). Judicial review thus allows the voter to set a high standard for reelection and to see this standard effectively enforced in the sense that the legislature will abide by it. In the absence of judicial review, the ability of the voter to enforce such a standard of reelection is reduced. Without judicial review, congruent legislatures choose  $(p_1 = \omega_1, p_2 = \omega_2)$ , while noncongruent legislatures choose  $(p_1 \neq \omega_1, p_2 \neq \omega_2)$ , and the voter cannot enforce a standard by which both types of the legislature choose  $p_2 = \omega_2$ . The present argument also shows that our results are not a product of differences in the information available to the electorate with respect to the first and second policy dimensions.

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<sup>16</sup>Note that this second equilibrium is ruled out by D1. In the rest of the paragraph, we present an additional argument for why this equilibrium should be disregarded.

Despite these positive effects, judicial review represents a trade-off for the voter: it not only increases the voter's influence over the legislature but also entails handing control over  $p_1$  to the judiciary. Greater control over elected officials comes at the cost of some policies becoming the purview of the (unelected and democratically unaccountable) judiciary. The effect that judicial review has on democracy is therefore ambiguous. Our contribution to the on-going debate concerning judicial review's countermajoritarian difficulty is that the institution cannot be characterized as purely or simply countermajoritarian. Its democracy-enhancing effect should be taken into account and moderates the extent to which judicial review conflicts with democratic principles.

In addition, our analysis suggests a means by which judicial review can be engineered so as to mitigate its drawbacks. Suppose that the voter placed a greater value on policy  $p_2$  than she did on  $p_1$ . In that case, the voter would be sacrificing control (to the extent she has it in the baseline model) over a policy about which she cares relatively little in order to increase her control over one she cares about more. So long as the legislature places sufficient value on both  $p_1$  and  $p_2$ , our results — and the democracy-enhancing effect of judicial review we identify — remain intact. Such an arrangement would seem to reduce judicial review's countermajoritarian character, depending on how much more important  $p_2$  is to the voter. This could be achieved by tailoring the courts' jurisdiction so that they reviewed policies that are a bit less important to the voter than some other political issues are.<sup>17</sup>

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<sup>17</sup>Some prima facie evidence suggests that judicial review follows this pattern in practice. In the American National Election Studies (ANES) surveys, a substantial majority of voters have ranked the economy, foreign affairs, and social programs as the most important government issues. These are policy areas where the courts usually do not intrude, giving the political branches broad latitude to act. In contrast, few ANES respondents (3.6%) ranked issues such as government controls over private citizens, electoral procedures, separation of powers, and federalism as the most important. These are policy areas subject to frequent and exacting judicial review (*Griswold v. Connecticut*, 1965; *Laurence v. Texas*, 2003; *Karcher v. Daggett*, 1983; *Reynolds v. Sims*, 1964; *Bowsher v. Synar*, 1986; *New York v. United States*, 1992).

This evidence presented by one set of surveys is only evocative, however. We defer rigorous analysis of the issues subject to searching judicial scrutiny, and the weight that voters ascribe to them, to future research. It also bears underscoring that the survey data does not imply that, as an example, government intrusion into private life is in any way unimportant to voters. The ANES simply indicates that there are other policies that most voters weight more heavily.

#### 4 Voter Welfare with Judicial Review

So far, the focus of our analysis has been the relationship between judicial review and democracy, that is, how judicial review affects the electorate's capacity to influence the policies enacted. Here we consider how judicial review affects voter welfare. We also now formalize our earlier suggestion that the trade-offs represented by judicial review can be mitigated by tailoring the judiciary's jurisdiction so that it reviews issues that the voter values less than others. To do so, we introduce a new parameter,  $\beta \in (0, 1]$ , which represents the weight the voter places on  $p_1$ , the policy subject to judicial review. Note that the equilibria are not altered by  $\beta$ , and the models presented so far can be characterized as special cases where  $\beta = 1$ .

Judicial review entails a second set of trade-offs for the voter. It increases her expected payoff with respect to  $p_2$  because noncongruent legislatures are more likely to choose  $p_2 = \omega_2$ . But, it also decreases her expected payoff with respect to  $p_3$  because noncongruent legislatures pool more often with congruent ones and the voter is therefore less able to distinguish between different types of the legislature. Finally, judicial review might or might not increase her expected payoff with respect to  $p_1$ , depending on  $\pi_J$ , the probability that the judiciary is congruent. Naturally, judicial review is of greater benefit to the voter with respect to  $p_1$  the more likely the judiciary is to be congruent. The probability with which noncongruent legislatures mimic the behavior of congruent ones does not depend on  $\pi_J$ , though, so the institution's effect on the voter's utility with respect to  $p_2$  and  $p_3$  do not either. For all  $\pi_J \in [0, 1]$ , the voter's expected payoffs from  $p_2$  and  $p_3$  are identical. All things considered, judicial review thus makes the voter better off when the probability that the judiciary is congruent exceeds a certain threshold, as detailed in the following proposition.

**Proposition 3 (Judicial Review's Effects on Voter Welfare).**

- a. Judicial review increases first period voter welfare provided that the probability that the judiciary is congruent is sufficiently high. Formally:*

$$\pi_J \geq \underline{\pi}_J \equiv \pi + 2(1 - \pi)(1 - \alpha) - \frac{(1 - \pi)(2\alpha - 1)}{\beta}.$$

- b. The threshold  $\underline{\pi}_J$  is increasing in the probability that the legislature is congruent ( $\pi$ ), decreasing in the probability that the state of the world  $\omega_2 = 1$  ( $\alpha$ ), and increasing in the value the voter attaches to policy  $p_1$  ( $\beta$ ).
- c. Judicial review decreases second period voter welfare.

As the probability that the legislature is congruent increases, the probability that the judiciary is congruent must increase in order for judicial review to have a positive impact on voter welfare. The intuition is straightforward: an increase in the probability that the legislature is congruent increases the voter's expected payoff with respect to every policy in the absence of judicial review, so the  $\underline{\pi}_J$  threshold increases as well. For a number of a parameter values, though,  $\underline{\pi}_J < \pi$ , implying that even relatively bad judges, ones less likely than elected officials to act in the public interest, can make the voter better off.

Judicial review's welfare effects also depend on the voter's uncertainty about policy: if the voter's uncertainty about the state of the world  $\omega_2$  diminishes, then the disciplining power of judicial review grows stronger. The probability that a noncongruent legislature observing  $\omega_2 = 1$  chooses  $p_2 = 1$  increases in  $\alpha$ , which in turn increases the voter's expected payoff with respect to that policy. As  $\alpha$  increases, then, the voter enjoys a greater expected benefit from judicial review, which serves to offset the risk represented by a noncongruent judiciary. This implies that, all else being equal, judicial review is of greater benefit to the public when the policy issues not reviewed by the court are less technical.

As with democratic control above, if the voter places less weight on  $p_1$  than she does on  $p_2$ , then judicial review involves losing control over a less important policy in order to increase control over one that is considered more vital. Hence, as  $\beta$  decreases, the threshold  $\underline{\pi}_J$  decreases as well; judicial review increases voter welfare for a larger range of parameter values. If we sought to maximize the likelihood that judicial review makes the voter better off, one way to go about it would be to tailor the courts' jurisdiction so that they tended to review issues that were less crucial to the electorate.

## 5 Conclusion

Using judicial review as means to enforce constitutional limitations on the powers of elected officials has led to numerous criticisms based on the countermajoritarian character of the judiciary. We have shown that by reducing lawmakers' incentives to disregard the preferences of their constituents and enact policy according to their personal desires, judicial review plays a democracy-enhancing role. It makes elected officials more sensitive to the policy preferences of the electorate. Furthermore, judicial review has this effect even with regards to those issues that lie outside the courts' jurisdiction. This last observation of a spillover effect of judicial review is important for future empirical work, especially research on judicial review's overall consequences or reach.

Judicial review represents a series of trade-offs, though. A number of competing effects exist that should influence our all things considered assessment of the practice. As it encourages noncongruent legislators to mimic the behavior of congruent ones, judicial review makes it more difficult for the voters to distinguish elected officials according to their policy preferences. Similarly, judicial review enhances democratic control over some policy dimensions but necessitates surrendering it with regards to others. This last tension inherent in judicial review may at least be mitigated by having the court review policies that the voters generally do not consider the most important ones requiring government action, suggesting that tailoring the court's jurisdiction could maximize its democracy-enhancing effects.

## Appendix

Let  $T$  be the type space of the legislature with  $T \equiv \{C_{\cdot,1}, C_{\cdot,-1}, N_{\cdot,1}, N_{\cdot,-1}\}$ .  $C_{\cdot,1}$  denotes the type of the legislature which is congruent and observed  $\omega_2 = 1$  and so forth. In principle we would also have to distinguish types depending on what value of  $\omega_1$  they observed. However, because all the actors in the game observe  $\omega_1$  and the game is identical for each value of  $\omega_1$ , we suppress this information. Also let  $P$  be the set of policies that can be chosen by the legislature in the first period with  $P \equiv \{(p_1 = \omega_1, p_2 = 1), (p_1 = \omega_1, p_2 = -1), (p_1 \neq \omega_1, p_2 = 1), (p_1 \neq \omega_1, p_2 = -1)\}$ . Let  $p, p'$  be arbitrary elements in  $P$ .



To make some expressions less cumbersome we sometimes use the following notation:  $\mathbf{p}_1 \equiv (p_1 = \omega_1, p_2 = 1)$ ,  $\mathbf{p}_2 \equiv (p_1 = \omega_1, p_2 = -1)$ ,  $\mathbf{p}_3 \equiv (p_1 \neq \omega_1, p_2 = 1)$ ,  $\mathbf{p}_4 \equiv (p_1 \neq \omega_1, p_2 = -1)$ . Moreover, denote  $\kappa_{\cdot, \cdot}(p)$  the probability that the congruent legislature which observes  $(\cdot, \cdot)$  plays the policy vector  $p \in P$  in the first period, and  $\eta_{\cdot, \cdot}(p)$  the probability that the noncongruent legislature which observes  $(\cdot, \cdot)$  plays the policy vector  $p \in P$  in the first period. Finally,  $\mu(p)$  denotes the voter's posterior belief that the legislature is congruent given that she observes the vector of first period policies  $p$ .

Similarly, in the game with the judiciary, the congruent judiciary upholds the policy if, and only if  $p_1 = \omega_1$ , while the noncongruent judiciary upholds the policy if, and only if  $p_1 \neq \omega_1$ . Because these statements are true in any equilibrium, we omit to state them in the propositions below.

Based on these remarks, a perfect Bayesian equilibrium of the game is a behavioral profile  $\kappa_{\cdot, \cdot}^*(p)$ ,  $\eta_{\cdot, \cdot}^*(p)$ ,  $r^*(p)$  and a system of beliefs  $\mu(p)$  such that

$$\kappa_{\cdot, \cdot}^*(p) = \begin{cases} 1 & \text{if } U_{C, \cdot}^*(p, \eta_{\cdot, \cdot}^*, r^*(p)) > U_{C, \cdot}^*(p', \eta_{\cdot, \cdot}^*, r^*(p')) & \text{for all } p' \neq p, \\ \kappa \in [0, 1] & \text{if } U_{C, \cdot}^*(p, \eta_{\cdot, \cdot}^*, r^*(p)) \geq U_{C, \cdot}^*(p', \eta_{\cdot, \cdot}^*, r^*(p')) & \text{for all } p' \neq p, \\ 0 & \text{if } U_{C, \cdot}^*(p, \eta_{\cdot, \cdot}^*, r^*(p)) < U_{C, \cdot}^*(p', \eta_{\cdot, \cdot}^*, r^*(p')) & \text{for some } p' \neq p, \end{cases}$$

$$\eta_{\cdot, \cdot}^*(p) = \begin{cases} 1 & \text{if } U_{N, \cdot}^*(p, \kappa_{\cdot, \cdot}^*, r^*(p)) > U_{N, \cdot}^*(p', \kappa_{\cdot, \cdot}^*, r^*(p')) & \text{for all } p' \neq p, \\ \eta \in [0, 1] & \text{if } U_{N, \cdot}^*(p, \kappa_{\cdot, \cdot}^*, r^*(p)) \geq U_{N, \cdot}^*(p', \kappa_{\cdot, \cdot}^*, r^*(p')) & \text{for all } p' \neq p, \\ 0 & \text{if } U_{N, \cdot}^*(p, \kappa_{\cdot, \cdot}^*, r^*(p)) < U_{N, \cdot}^*(p', \kappa_{\cdot, \cdot}^*, r^*(p')) & \text{for some } p' \neq p, \end{cases}$$

$$r^*(p) = \begin{cases} 1 & \text{if } \mu(p) > \pi, \\ r \in [0, 1] & \text{if } \mu(p) = \pi, \\ 0 & \text{if } \mu(p) < \pi, \end{cases}$$

and

$$\mu(p) = \frac{[\kappa_{\cdot,1}(p)\alpha + \kappa_{\cdot,-1}(p)(1 - \alpha)]\pi}{[\kappa_{\cdot,1}(p)\alpha + \kappa_{\cdot,-1}(p)(1 - \alpha)]\pi + [\eta_{\cdot,1}(p)\alpha + \eta_{\cdot,-1}(p)(1 - \alpha)](1 - \pi)},$$

whenever  $p$  is played with positive probability.

In this section, we give a full, formal, statement of the equilibria presented in the main body of the text and prove that these are indeed perfect Bayesian equilibria. In a supplemental online appendix, we characterize all the perfect Bayesian equilibria of the games with and without judicial review and prove that the equilibria we focus on in the main body of the text are unique if  $\gamma \in (1 - \pi, \pi)$  and the unique ones to satisfy D1 if  $\gamma \in [\pi, 2 - \pi)$

**Baseline model**

**Proposition A.1.** *The following strategies and beliefs constitute the equilibrium of the baseline model when  $\gamma \in (1 - \pi, 2 - \pi)$ : the congruent legislature chooses  $(p_1 = \omega_1, p_2 = \omega_2)$ ,  $N_{\cdot,-1}$  chooses  $(p_1 = \omega_1, p_2 = 1)$ , while  $N_{\cdot,1}$  chooses  $(p_1 = \omega_1, p_2 = -1)$  with probability  $\frac{1}{\alpha} - 1$  and  $(p_1 \neq \omega_1, p_2 = -1)$  with probability  $2 - \frac{1}{\alpha}$ .*

$$r^*(p_1 = \omega_1, p_2 = 1) = 1, r^*(p_1 = \omega_1, p_2 = -1) = \frac{1}{\gamma + \pi}, r^*(p_1 \neq \omega_1, p_2 = \cdot) = 0.$$

$$\begin{aligned} \mu(p_1 = \omega_1, p_2 = 1) &= \frac{\alpha\pi}{\alpha\pi + (1 - \alpha)(1 - \pi)} > \pi, \\ \mu(p_1 = \omega_1, p_2 = -1) &= \frac{(1 - \alpha)\pi}{(1 - \alpha)\pi + \frac{1 - \alpha}{\alpha}\alpha(1 - \pi)} = \pi, \\ \mu(p_1 \neq \omega_1, p_2 = -1) &= 0. \end{aligned}$$

We let off-the-equilibrium-path beliefs satisfy  $\mu(p_1 \neq \omega_1, p_2 = 1) < \pi$ .

If  $\gamma \in (1 - \pi, \pi)$  then this equilibrium is the unique one. If  $\gamma \in [\pi, 2 - \pi)$  then it is the unique equilibrium that survives criterion D1.

We now prove that this pair of strategies and beliefs is indeed an equilibrium.

*Proof.* Consider first the behavior of  $C_{\cdot,1}$ . Given the reelection behavior of the voter described in Proposition 1, choosing  $(p_1 = \omega_1, p_2 = 1)$

yields a payoff of  $3 + \gamma$ . This is the highest possible utility that  $C_{,1}$  can receive and hence  $C_{,1}$  has no incentive to deviate. Similarly,  $C_{,-1}$ 's payoff from choosing  $(p_1 = \omega_1, p_2 = -1)$  is  $2 + r^*(p_1 = \omega_1, p_2 = -1)(\gamma + 1) + (1 - r^*(p_1 = \omega_1, p_2 = -1))\pi$  while deviating to  $(p_1 = \omega_1, p_2 = 1)$  yields it  $2 + \gamma$ . So, because  $r^*(p_1 = \omega_1, p_2 = -1) = \frac{1}{\gamma + \pi} > \frac{\gamma - \pi}{\gamma + 1 - \pi}$ ,  $C_{,-1}$  has no incentive to deviate to  $(p_1 = \omega_1, p_2 = 1)$ . Moreover, because  $r^*(p_1 \neq \omega_1, p_2 = -1) = 0$ ,  $C_{,-1}$  has no incentive to deviate to  $(p_1 \neq \omega_1, p_2 = -1)$  either because this yields a payoff of  $1 + \pi < 2$ .

Consider now the behavior of  $N_{,-1}$ . Choosing  $(p_1 = \omega_1, p_2 = 1)$  yields a payoff of  $2 + \gamma$ . Deviating to  $(p_1 \neq \omega_1, p_2 = -1)$  yields a lesser payoff of  $2 - \pi$  and can be eliminated. Choosing  $(p_1 \neq \omega_1, p_2 = 1)$  yields this type of legislature a payoff of  $2 + r(p_1 \neq \omega_1, p_2 = 1)(\gamma + 1) + (1 - r(p_1 \neq \omega_1, p_2 = 1))(1 - \pi)$ . Hence, as long as  $r(p_1 \neq \omega_1, p_2 = 1) \leq 1 - \frac{1}{\gamma + \pi}$ ,  $N_{,-1}$  has no incentive to deviate. This condition is satisfied because  $\gamma > 1 - \pi$  implies  $1 - 1/(\gamma + \pi) > 0$  and in equilibrium  $r^*(p_1 \neq \omega_1, p_2 = 1) = 0$ .

Finally, consider  $N_{,1}$ . Playing  $(p_1 = \omega_1, p_2 = -1)$  yields a payoff of  $3 - \pi$ , as does playing  $(p_1 \neq \omega_1, p_2 = -1)$ , so  $N_{,1}$  is indeed indifferent between these two policy vectors. Moreover,  $N_{,1}$ 's payoff from playing  $(p_1 \neq \omega_1, p_2 = 1)$  is less than or equal to  $3 - \pi$  so long as  $r(p_1 \neq \omega_1, p_2 = 1) \leq 1/(\gamma + \pi)$ . It follows then that  $N_{,1}$ 's behavior is indeed optimal.

To assess whether the reelection probabilities used by the voter are indeed optimal, we derive the posterior beliefs:

$$\mu(p_1 = \omega_1, p_2 = 1) = \frac{\alpha\pi}{\alpha\pi + (1 - \alpha)(1 - \pi)} > \pi, \text{ because } \alpha > 1/2,$$

$$\mu(p_1 = \omega_1, p_2 = -1) = \frac{(1 - \alpha)\pi}{(1 - \alpha)\pi + \frac{1 - \alpha}{\alpha}\alpha(1 - \pi)} = \pi,$$

and

$$\mu(p_1 \neq \omega_1, p_2 = -1) = 0.$$

Given these posterior beliefs  $r^*(p_1 = \omega_1, p_2 = \cdot)$ , and  $r^*(p_1 \neq \omega_1, p_2 = -1)$  are indeed optimal. Recall that in order for  $N_{,1}$  and  $N_{,-1}$  to be willing not to deviate to the policy vector  $(p_1 \neq \omega_1, p_2 = 1)$  it must be the case that  $r^*(p_1 \neq \omega_1, p_2 = 1) \leq \min\{1 - 1/(\gamma + \pi), 1/(\gamma + \pi)\} < 1$ . Such a reelection strategy is optimal for the voter if and only if out-of-equilibrium beliefs satisfy  $\mu(p_1 \neq \omega_1, p_2 = 1) \leq \pi$ . □

**Model with Judiciary**

**Proposition A.2.** *The following strategies and beliefs constitute the equilibrium of the model with the judiciary when  $\gamma > 1 - \pi$ :*

$C_{\cdot,1}$  mixes between  $(p_1 = \omega_1, p_2 = 1)$  and  $(p_1 \neq \omega_1, p_2 = 1)$ ,  $C_{\cdot,-1}$  mixes between  $(p_1 = \omega_1, p_2 = -1)$  and  $(p_1 \neq \omega_1, p_2 = -1)$ ,  $N_{\cdot,-1}$  mixes between  $(p_1 = \omega_1, p_2 = 1)$  and  $(p_1 \neq \omega_1, p_2 = 1)$ , and  $N_{\cdot,1}$  mixes between all  $p \in P$ .

In equilibrium the mixing probabilities need to satisfy the following equations:

$$\begin{aligned}
 \eta_{\cdot,1}^*(p_1 = \omega_1, p_2 = 1) &= \kappa_{\cdot,1}^*(p_1 = \omega_1, p_2 = 1) \\
 &\quad - \eta_{\cdot,-1}^*(p_1 = \omega_1, p_2 = 1) \frac{1 - \alpha}{\alpha}, \\
 \eta_{\cdot,1}^*(p_1 = \omega_1, p_2 = -1) &= \kappa_{\cdot,-1}^*(p_1 = \omega_1, p_2 = -1) \frac{1 - \alpha}{\alpha}, \\
 \eta_{\cdot,1}^*(p_1 \neq \omega_1, p_2 = 1) &= 2 - \frac{1}{\alpha} + \frac{1 - \alpha}{\alpha} \eta_{\cdot,-1}^*(p_1 = \omega_1, p_2 = 1) \\
 &\quad - \kappa_{\cdot,1}^*(p_1 = \omega_1, p_2 = 1), \\
 \eta_{\cdot,1}^*(p_1 \neq \omega_1, p_2 = -1) &= (1 - \kappa_{\cdot,-1}^*(p_1 = \omega_1, p_2 = -1)) \frac{1 - \alpha}{\alpha},
 \end{aligned} \tag{A.1}$$

$$r^*(p_1 = \omega_1, p_2 = 1) = r^*(p_1 \neq \omega_1, p_2 = 1) = r^*(p_1 = \omega_1, p_2 = -1) + \frac{1}{\gamma + \pi} = r^*(p_1 \neq \omega_1, p_2 = -1) + \frac{1}{\gamma + \pi}.$$

If the specified policy vector is played with positive probability:

$$\mu(\mathbf{p}_1) = \frac{\kappa_{\cdot,1}^*(\mathbf{p}_1) \alpha \pi}{\kappa_{\cdot,1}^*(\mathbf{p}_1) \alpha \pi + [\eta_{\cdot,1}^*(\mathbf{p}_1) \alpha + \eta_{\cdot,-1}^*(\mathbf{p}_1) (1 - \alpha)] (1 - \pi)} = \pi,$$

$$\mu(\mathbf{p}_2) = \frac{\kappa_{\cdot,-1}^*(\mathbf{p}_2) (1 - \alpha) \pi}{\kappa_{\cdot,-1}^*(\mathbf{p}_2) (1 - \alpha) \pi + \eta_{\cdot,1}^*(\mathbf{p}_2) \alpha (1 - \pi)} = \pi,$$

$$\mu(\mathbf{p}_3) = \frac{(1 - \kappa_{\cdot,1}^*(\mathbf{p}_1)) \alpha \pi}{(1 - \kappa_{\cdot,1}^*(\mathbf{p}_1)) \alpha \pi + [\eta_{\cdot,1}^*(\mathbf{p}_3) \alpha + (1 - \eta_{\cdot,-1}^*(\mathbf{p}_1)) (1 - \alpha)] (1 - \pi)}$$

$$\begin{aligned}
 &= \pi, \\
 \mu(\mathbf{p}_4) &= \frac{(1 - \kappa_{\cdot,-1}^*(\mathbf{p}_2))(1 - \alpha)\pi}{(1 - \kappa_{\cdot,-1}^*(\mathbf{p}_2))(1 - \alpha)\pi + \eta_{\cdot,1}^*(\mathbf{p}_4)\alpha(1 - \pi)} = \pi.
 \end{aligned}
 \tag{A.2}$$

*In case one of these policy vectors is not played with positive probability we let off-the-equilibrium-path beliefs satisfy:  $\mu(p) \leq \pi$ .*

*If  $\gamma \in (1 - \pi, \pi)$ , then this is the unique type of equilibria. If  $\gamma \geq \pi$  then it is the unique type of equilibria to survive criterion D1.*

We now prove that these pairs of strategies and beliefs are indeed perfect Bayesian equilibria.

*Proof.* First, consider the behavior of  $C_{\cdot,1}$ . If this type of legislature selects  $(p_1 = \omega_1, p_2 = 1)$  or  $(p_1 \neq \omega_1, p_2 = 1)$  it receives a payoff of  $\pi_J + 1 + r^*(\cdot, p_2 = 1)(\gamma + 1) + (1 - r^*(\cdot, p_2 = 1))\pi$  while deviating to  $(\cdot, p_2 = -1)$  yields a payoff of  $\pi_J + r^*(\cdot, p_2 = -1)(\gamma + 1) + (1 - r^*(\cdot, p_2 = -1))\pi$ . Hence, as long as  $r^*(\cdot, p_2 = 1) \geq r^*(\cdot, p_2 = -1)$ ,  $C_{\cdot,1}$  does not wish to deviate.

Next consider  $C_{\cdot,-1}$ . In equilibrium its payoff is  $\pi_J + 1 + r^*(\cdot, p_2 = -1)(\gamma + 1) + (1 - r^*(\cdot, p_2 = -1))\pi$ , while deviating to  $(\cdot, p_2 = 1)$  results in a payoff of  $\pi_J + r^*(\cdot, p_2 = 1)(\gamma + 1) + (1 - r^*(\cdot, p_2 = 1))\pi$ . Hence, as long as  $r^*(\cdot, p_2 = 1) \leq r^*(\cdot, p_2 = -1) + 1/(\gamma + 1 - \pi)$ ,  $C_{\cdot,-1}$  has no incentive to deviate. In any of the equilibria specified in Proposition A.2,  $r^*(\cdot, p_2 = 1) = r^*(\cdot, p_2 = -1) + \frac{1}{\gamma + \pi} < r^*(\cdot, p_2 = -1) + \frac{1}{\gamma + 1 - \pi}$  because  $\pi > 1/2$ .

Similarly, in equilibrium the payoff of  $N_{\cdot,-1}$  is  $1 - \pi_J + 1 + r^*(\cdot, p_2 = 1)(\gamma + 1) + (1 - r^*(\cdot, p_2 = 1))(1 - \pi)$ , while deviating to  $(\cdot, p_2 = -1)$  results in a payoff of  $1 - \pi_J + r^*(\cdot, p_2 = -1)(\gamma + 1) + (1 - r^*(\cdot, p_2 = -1))(1 - \pi)$ . As long as  $r^*(\cdot, p_2 = 1) \geq r^*(\cdot, p_2 = -1) - 1/(\gamma + \pi)$ ,  $N_{\cdot,-1}$  has no incentive to deviate. This condition is satisfied in any of the equilibria specified in Proposition A.2

Finally, if  $N_{\cdot,1}$  plays  $(\cdot, p_2 = 1)$  it receives a payoff of  $1 - \pi_J + r^*(\cdot, p_2 = 1)(\gamma + 1) + (1 - r^*(\cdot, p_2 = 1))(1 - \pi)$ . If it plays  $(\cdot, p_2 = -1)$  instead, it receives a payoff of  $1 - \pi_J + 1 + r^*(\cdot, p_2 = -1)(\gamma + 1) + (1 - r^*(\cdot, p_2 = -1))(1 - \pi)$ . Therefore, so long as  $r^*(\cdot, p_2 = 1) = r^*(\cdot, p_2 = -1) + \frac{1}{\gamma + \pi}$  the type  $N_{\cdot,1}$  legislature is indifferent.

Now consider the behavior of the voter. As in the baseline model the voter reelects whenever  $\mu(p) > \pi$ , is indifferent between reelecting and not when  $\mu(p) = \pi$ , and does not reelect if  $\mu(p) < \pi$ . Hence, for the specified reelection probabilities to be optimal, the posterior beliefs need to satisfy the equations labeled (A.2). These equations hold if, and only if, Equations (A.1) hold.  $\square$

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