Political Agency, Oversight, and Bias: The Instrumental Value of Politicized Policymaking

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Abstract

I develop of theory of American policymaking between a legislature, administrative agency, and a reviewing court that can reverse agency actions. The agency can increase the overall quality of outcomes through costly implementation effort. Judicial review of agency actions can impact agency effort incentives, but only if the ideological bias of the agency does as well. The legislature, in light of agency-court interactions, chooses the bias of the agency to which it will allocate policymaking authority. The legislature is forced to trade off spatial policy bias for increased implementation effort. That is, the legislature trades off bureaucratic "drift" to provide incentives for agencies to reduce "slack." These results have implications for institutional design of administrative agencies, the nature of inter-institutional policymaking, and empirical analyses of administrative policymaking.

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1 Introduction

One of the most pervasive tensions in the modern American political system is the reconciliation of effective democratic representation and effective policymaking. One manifestation of this tension concerns the delegation of policymaking authority from popularly elected representatives to unelected bureaucrats. There are those that have argued that delegation is necessary given the complexities of the economic and social environments in which policymaking is required (*e.g.,* Spence and Cross 2000), and perhaps even democratically desirable (*e.g.,* Meier 1997; Meier and O'Toole 2006). Others, however, have argued that delegation is a democratically illegitimate abdication of policymaking authority by Congress (*e.g.,* Lowi 1979) that threatens to sever the popular control of government action through the conduit of elected representatives, which is a pillar of democratic theory (*e.g.,* Dahl 1989; Pettit 2012; Pitkin 1967).

The fear of the loss of democratic control of policy implies that agencies pursue policies that run contrary to public wishes as represented through their elected representatives. The most egregious of these 'political agency problems' fall into two broad categories: bureaucratic *drift* and *slack*. Bureaucratic drift is a concept meant to capture any bureaucratic behavior characterized by the agency pursuing policies that subvert (Gailmard 2002), or diverge from, the goals or interests specified by a political principal, *e.g.,* legislative goals set by Congress (Bueno de Mesquita and Stephenson 2007; Horn and Shepsle 1989; Shepsle 1992).[1] Bureaucratic slack, on the other hand, refers to the tendency of administrative agencies to implement policy with insufficient levels of effort. This agency cost is common to all types of agencies.

For example, consider a situation in which the EPA is asked to regulate whether, and how much, a mining company can dump fill, debris, or waste in local water sources. Mining companies must have applications cleared by the EPA for a permit to dump. The EPA's standards for whether

[1]Examples of different types of what I refer to as drift include agency capture by regulated or interested groups (Niskanen 1971), selection practices and career concerns of bureaucrats (Heclo 1988), cognitive and/or institutional biases, or implicit motivations (Gailmard and Patty 2007; Prendergast 2007; Seidenfeld 2002).

to grant or deny the dumping permit represents the agency's policy choice. How thoroughly the EPA evaluates each individual application for dumping permits represents agency implementation of policy. The policy in place for dumping permitting can be ineffective in several ways. If the substance of the policy is too lax then permits will be granted when they should not and local environments will suffer. If the policy is too stringent then too few permits may be granted and business will suffer. However, imagine that the policy is crafted so that the substantive content of the policy matches the EPA's goals, perfectly balancing environmental preservation and economic well-being. The policy, even though very effectively crafted on a technical level, may still prove ineffective if the EPA did not invest sufficient effort to develop to capacity to implement effectively. If the EPA were to invest low effort — through insufficient staffing, lack of technical support, etc. — into reviewing permit applications it would be much more prone to erroneously grant permits when they should not have been granted or deny permits when they should have been granted. In both cases the policy is ineffectively implemented due to lack of effort. This environment — along with many others in which agencies grant/deny permits, make licensing decisions, provide disaster relief, housing, and other government aid — illuminates how the overall quality of agency-made policy operates in the model. If the Agency invests insufficient ex ante effort then, regardless of its policy choice, the quality of outcomes suffers through lack of policy precision.

Thus, there is a dual political agency problem present: not only must political principals or institutional designers monitor or provide incentives for congruent policy *choice*, they must simultaneously do so for effective agency *effort* to ensure effective implementation or enforcement. If incongruent agency policy outcomes are a concern for political principals then why do these same principals create and sustain biased agencies? How do these principals, through regulatory oversight, control both drift and slack once authority has been delegated to the bureaucracy? The answers to these questions have implications for the institutional design of administrative agencies, the nature of inter-institutional policymaking, and empirical studies of bureaucratic control.

Through analysis of a game-theoretic model, I develop a theory of American policymaking between a political principal (interpreted as a legislature), a policymaking agency, and a review-

ing court. Policy outcomes consist of both a spatial policy choice by the agency, over which the players may disagree conditional on biases, and an implementation component, which all players value equally and the quality of which is conditional on agency effort investment.[2] The legislature 'designs' the agency to which it allocates policymaking authority by choosing the agency's bias. Following this choice, the agency chooses how much effort to invest toward implementing policy and where to set policy spatially. The agency's effort choice directly impacts the quality of policy outcomes. The higher the level of effort invested by the agency toward implementation, the more precise are policy outcomes. As in the EPA example above, agencies do more than choose policy along some substantive or ideological dimension; they must also effectively implement or enforce policy in practice (Carpenter 2001; Derthick 1990; Lipsky 1980).[3] Finally, a reviewing court, upon observing agency effort, decides to uphold or reverse the agency. Modeling the court as an overseer is in line with one prevalent form of political control: subjection of administrative agencies to review or monitoring by another political entity (*e.g.,* Bueno de Mesquita and Stephenson 2007; Sunstein 1984).

In contrast to congressional instruments of control, monitors such as courts "rely on different, and more blunt, instruments of control" (Bueno de Mesquita and Stephenson 2007). Specifically, courts cannot supplant agency policies, alter agency budgets, or strip agencies of policy authority. They can, however, effectively veto a given agency policy action. The Administrative Procedures Act (APA) directs courts to engage in "hard look" review of agency policymaking and reverse actions found to be "arbitrary and capricious" (Breyer 1986; Stephenson 2006).[4]

[2]Recent literature analyzing issues of agency capacity (Huber and McCarty 2004; Ting 2011) and the development of policy in organizations (Hirsch and Shotts 2013, 2014*b*,*a*) has recognized this general distinction between policy choice and effort investments that directly impact the quality of policy outcomes.

[3]Carpenter (2001) distinguishes between an agency's analytic and programmatic capacities. The first refers to the agency's ability to adequately craft policy while the second refers to its ability to effectively administer policy. Lipsky (1980) is interested in "street-level bureaucracy," which is how policy is applied on the ground by lower level bureaucrats. Both views are analogous to my treatment of agency policymaking in this paper.

[4]It should be noted that executive review by the Office of Information and Regulatory Affairs (OIRA) suffers from

Judicial review of agency policy actions can be a powerful tool that, at times, induces agencies to invest higher levels of effort than they would if left to their own motivations (*e.g.,* Turner 2014*b*). However, the presence of a reviewing court can also dissuade agencies from regulating (Bueno de Mesquita and Stephenson 2007) or investing sufficient effort in the actual implementation of policy (Turner 2014*b*). Which one of these effects of review emerges depends on the motivations of the agency itself and the underlying policy environment. Courts cannot credibly commit to *not* intervening when it will deter agencies from working hard because they only have two choices: uphold or reverse. This limitation of judicial review as an instrument of control creates a trade-off for the legislature. When both bureaucratic drift — generated through agency policy biases — and bureaucratic slack — generated by lack of effort investment aimed at quality policy enforcement — are concerns, the legislature must sometimes trade off biased policy outcomes in exchange for increased effort investments.

Related literature. This paper contributes to, and has benefitted from, several existing literatures. First, by incorporating the role that agency-court interactions have on institutional design incentives for a principal, this paper contributes to literature examining judicial review's impact on policymaking. Scholars have examined the effects of judicial review on the incentive for politicians to pander in electoral settings (Fox and Stephenson 2011), the incentives to invest costly effort (Bueno de Mesquita and Stephenson 2007; Stephenson 2006; Turner 2014*b*), the relationship between legislatures and courts (Rogers 2001; Rogers and Vanberg 2002; Vanberg 2001), and information acquisition and more informed policymaking (Dragu and Board 2013). In addition, extant research has analyzed how different types of judicial review or rulings may impact policymaking (Staton and Vanberg 2008; Turner 2014*a*). While this paper shares the goal of further understanding how judicial review impacts policymaking, it complements existing work by investigating how downstream agency-court interactions impact up-stream legislative incentives to design biased administrative

the same limitations as courts. It cannot supplant agency policy directly, but it can effectively veto proposed rules by agencies.

agencies.[5]

The particular focus on institutional design also complements literature examining how a principal delegating policymaking authority to an agent would design review of agent decisions. For instance, Bubb and Warren (2014) provide results that suggest a principal will appoint a maximally biased agent to make decisions on its behalf when that agent is subject to review by a more moderately biased actor. They focus most closely on how dividing policy tasks between an agent and reviewer structures both the impact regulatory review has on agent policymaking and the optimal choice of bias for both actors by the principal. In contrast, I focus specifically on how judicial review, which is limited to accepting agency-made policy or not, impacts agency effort incentives and how that, in turn, structures the incentives for the legislature to create a biased agency.[6]

Similarly, Hirsch and Shotts (2014*b*) also focus on how effort and bias interact with respect to the optimal spatial location of reviewer preferences. Specifically, the authors show that when there is a biased agent or "entrepreneur" that can increase the quality of policy through effort investment, the principal benefits from delegating decision-making authority—to accept or reject the entrepreneur's proposed policy—to an oppositely biased reviewer that counteracts the bias of the entrepreneur. While both papers have results that are driven by the bias-effort trade-off faced by the principal, I focus on a different institutional environment. In particular, I focus on how the optimal choice of policymaking agency (their entrepreneur) by a legislature (their principal) is structured by the impact of judicial review (their reviewer) on agency effort incentives.[7] In this way, the results presented here complement those in Hirsch and Shotts (2014*b*). Overall, the results in this paper contribute to this growing literature by further exploring how subjection of agent decision-making to ex post review

[5]The way that judicial review, modeled as ex post review of policy with a veto, structures agent incentives is also related to literature examining agent retention (*e.g.,* Banks and Sundaram 1993, 1998).

[6]Moreover, the results presented in this paper are partially driven by the spatial representation of preferences from which Bubb and Warren (2014) claim to have departed.

[7]Similarly, Dessein (2002) also studies how a principal chooses the ideological location of an institution that reviews agent decision-making to attempt to induce information disclosure. Due to the focus on information acquisition and communication there is no effort dimension, which is of central importance in this paper.

may benefit a political principal and structure the incentives for the creation and sustainment of biased agencies in the American policymaking system.[8]

Overall, the theory provides instrumental reasons for the institutional design of biased agencies. This logic is driven by incentive effects provided by the presence of a reviewing court in the overarching policymaking system. The results show that a political principal, which I interpret as a legislature, can mitigate problems of insufficient effort investments through the creation of a biased policymaking agency by leveraging the effect of ex post judicial review on incentives for agencies to "work hard" (Turner 2014*b*). That is, the legislature designing the agency trades off bureaucratic drift to reduce slack. In fact, the analysis suggests that reviewability of agency policy actions only affects agency effort choices if its bias does as well, and vice versa. Without the systemic institutional feature of judicial review the legislature cannot affect agency effort with its choice of agency bias. However, when judicial review is present in the policymaking system the legislature can induce higher quality implementation by creating a biased agency.

The remainder of the paper is organized as follows. Section 2 presents a model of policymaking between a legislature, an agency, and a court. Section 3 analyzes optimal judicial review, optimal agency policy and effort choices, and the optimal level of agency bias. Following the analysis, Section 3.4 provides logic for why, in this context, principals generally gain from appointing biased agents. Section 4 discusses several empirical implications of the model and, finally, Section 5 concludes. All proofs can be found in the appendix.

[8]More generally, previous studies have shown that, at times, principals prefer biased agents (see *e.g.,* Bendor and Meirowitz 2004; Che and Kartik 2009; Van Weelden 2013). For example, Bendor and Meirowitz (2004) show that principals may prefer biased agents to faithful agents if biased agents are willing to work harder. In this paper, this dynamic between bias and effort only exists through the intervening effects of judicial review. Similarly, Van Weelden (2013) provides results where voters may elect candidates with divergent policy preferences in exchange for reduced rent-seeking. While focused on different institutional and political environments, the legislature's creation of a biased agency in this paper is similarly driven by the spatial nature of preferences and the concavity of the principal's utility function. The results in this paper follow these studies generally by highlighting a fundamental trade-off between bias and quality for political principals.

2 The Model

To investigate the implications of regulatory oversight and the optimal level of agency bias from a political principal's perspective, I analyze a three-player, non-cooperative game between a Legislature that chooses the type of agency authorized to make policy, an Agency charged with both choosing and implementing policy effectively, and a Court empowered to review, and invalidate, the Agency's policy actions. The game consists of a single period of policymaking in which, first, the Legislature chooses the bias or "type" of Agency, denoted by $t_A \in \mathbb{R}$, to which it will allocate policymaking authority. In the game, once the Legislature designs the Agency it delegates full policymaking authority to the Agency (Aghion and Tirole 1997). The Legislature simply wants policy outcomes to be realized as effectively as possible relative to an underlying true state of the world, denoted by $\omega \in \mathbb{R}$ that is drawn according to a cumulative distribution function, F_ω with mean 0 and strictly positive, finite variance V_F. How close policy outcomes are to ω depends on Agency effort investment and setting policy spatially and whether the Court chooses to uphold or reverse the Agency.

The Agency's effort choice, denoted $e \in [0,1]$, directly affects the quality of policy through its effect on the precision with which outcomes approximate the Agency's spatial policy choice. The more effort an agency invests toward improving enforcement capacity, the less likely it is that errors will be introduced during policy administration. Specifically, one component of agency-made policy is an implementation shock, $\varepsilon \in \mathbb{R}$, that reflects the difficulties of administering policy even when the substantive content of policy is clearly crafted. This shock is drawn from a cumulative distribution function $G_\varepsilon(e)$ with mean 0 and strictly positive, finite variance $V_\varepsilon(e)$, which is further conditional on Agency effort.[9] I assume that the variance of ε conditional on Agency effort is strictly decreasing, $V'_\varepsilon(e) < 0$, and convex, $V''_\varepsilon(e) > 0$ and $V'''_\varepsilon(e) \geq 0$. This ensures that $V_\varepsilon(e) < V_\varepsilon(e')$ if and only if $e > e'$. Put simply, the more effort the Agency invests toward implementing policy effectively, the

[9]The mean of $G_\varepsilon(e)$ is 0 to capture the idea that any error in implementation of policy distorts outcomes away from the Agency's policy choice, x.

more precise policy becomes. This operationalizes how thoroughly the EPA can evaluate permit applications from the example in the introduction. Following the Agency's effort investment, it observes ω perfectly and chooses where to set policy spatially. This policy choice is given by $x \in \mathbb{R}$. The choice of x by the Agency denotes the substantive policy choice and can be understood as a "policy target" in the sense that final policy outcomes are further conditional on the true underlying state, ω, and the effort investment, e, of the Agency. In the EPA permitting example this represents the substantive content of policy that dictates the standards against which permit applications are judged. The overall quality of agency-made policy is contingent on both Agency choices.

After the Legislature has chosen the type of Agency, the Agency has made its effort investment and set policy, the Court observes Agency effort, e, and can choose to either uphold or reverse. This choice is denoted by $r \in \{0,1\}$, where $r = 0$ denotes the Court's choice to uphold and $r = 1$ denotes a choice to reverse the Agency. The Court is also biased relative to the Legislature. The Court's ideal point, or bias, is denoted by $t_C \in \mathbb{R}$. This ideal point is fixed exogenously to focus on the legislative choice of agency bias directly. If the Court upholds, then agency-made policy obtains and becomes final policy. If the Court reverses, then the final policy outcome is simply $-\omega$. In this case, the Agency has no impact on policy and the underlying state obtains unchanged. This reversion outcome can most naturally be understood as outcomes that are realized through the unregulated actions of private actors given the contingencies of the policy environment.

For instance, perhaps the EPA chooses a policy x that denotes more stringent permitting standards and invests insufficient effort to improve the enforcement of these more stringent standards, which generates erroneous permit denials (or erroneous permit approvals). If the Court reviews and reverses these types of actions then the more stringent permitting standards are thrown out. The Agency also loses any effort it may have invested toward implementing the policy effectively since decisions, erroneous or not, based on that policy are invalidated. In this way, the reversion $-\omega$ represents the errors that will occur under the less stringent status quo permitting standards at a baseline level of Agency effort investments. Put simply, if the Court reverses the Agency then the outcomes that would obtain through the actions of exogenous actors, absent any new Agency intervention, are

realized. Final policy is generated according to the following function,

$$y = \begin{cases} x - \omega + \varepsilon & \text{if } r = 0, \\ -\omega & \text{if } r = 1. \end{cases} \tag{1}$$

Following this policymaking process — Nature's choice of ω, the Legislature's choice of bias, the Agency's effort and policy choices, and the Court's choice to uphold or reverse — the game ends and payoffs are realized.

Payoffs. The payoffs of the Legislature, the Agency, and the Court are given by the following expressions, respectively.

$$\begin{aligned} u_L(e,y,r) &= -y^2, \\ u_A(e,y,r) &= -\beta(y - t_A)^2 - \kappa e - \pi r, \\ u_C(e,y,r) &= -(y - t_C)^2. \end{aligned}$$

It is immediately apparent from the actors' preferences that the Legislature is simply concerned with policy being set so it matches the true state of the world (*i.e.,* the Legislature's ideal policy is when $x = \omega$). However, the Agency and the Court have their own ideal policy outcomes in mind. These ideal points, t_A and t_C respectively, represent Agency and Court types. Each institution can diverge in their preferences over ideal policy outcomes given ω. Thus, the Agency and the Court would both like policy to be set (and realized) as close to their respective ideal points as possible. Recall, however, that in contrast to the Court, whose ideal point is treated as exogenous, the Agency's ideal point, t_A, is chosen by the Legislature and is therefore endogenous to the game. In all of the analysis that follows, I assume that $t_C < 0$ so that the Court is to the left of the Legislature ideologically. The Agency's payoffs are further conditional on the relative strength of its policy motivations, $\beta > 0$, effort costs, $\kappa > 0$, and its aversion to being reversed by the Court, $\pi > 0$. The policy intensity parameter β measures how heavily the Agency weights policy relative

to both the other components of its utility and the policy motivations of the Legislature and Court. Highly technical or complex policy areas can be thought of as generating higher effort costs relative to policy areas that involve less onerous activities. The Agency's aversion to being reversed by the Court captures how heavily the reviewability of Agency actions affect payoffs. An Agency with a higher level of aversion to being overturned suffers a harsher punishment for this reprimand of its actions. Aside from t_A, which is determined endogenously, the other parameters — β, κ, π, and t_C — are exogenous and common knowledge.

Information and policymaking. The players are forced to confront the uncertainty inherent in policymaking. This uncertainty is captured in the distributions of ω and ε. Recall that ω is distributed according to F_ω with mean 0 and variance V_F. The Legislature must choose the type of Agency it will empower to make policy (*i.e.,* the Legislature chooses the level of Agency bias relative to its own policy preferences). The Legislature makes this decision based on knowledge of F_ω and $G_\varepsilon(e)$ as well as knowledge of the Agency's payoff structure. Thus, the Legislature chooses bias based on beliefs over ω, ε, and the Agency's policy choice and effort strategies given the incentives produced by the presence of the reviewing Court.

The Agency observes the realization of ω following its effort investment e. After x is chosen by the Agency, ε is realized according to $G_\varepsilon(e)$. All the players — the Legislature, the Agency, and the Court — know that the higher the Agency's effort, the lower $V_\varepsilon(e)$ becomes, and, therefore, the higher the precision of final agency-made policy. So, the Agency, after choosing e, observes ω, chooses x, ε is realized, and then the Court must decide whether to uphold or reverse the Agency. This reversal decision is made by the Court based on beliefs over the Agency's policy choice strategy and the level of variance associated with upholding or reversing the Agency's actions, which is further conditional on the Agency's choice of e. Moreover, the Agency's policy bias relative to the Court is common knowledge. Thus, the Court does know the choice of e and the level of preference divergence relative to the Agency, but does not know ω or ε.[10] The Court does know F_ω and $G_\varepsilon(e)$ and, thus, also knows V_F and $V_\varepsilon(e)$.

[10]The Court also does not observe x or y.

Strategies and equilibrium concept. I utilize perfect Bayesian equilibrium (PBE) in weakly undominated strategies. The Legislature's strategy consists of a choice over the type of Agency, in terms of policy bias, it empowers to choose and implement policy. Denote this strategy by s_L. The Legislature also has beliefs over ω and ε, which are represented by μ_L, a cumulative distribution function that represents a probability distribution over ω and ε. The Agency's strategy consists of an effort investment choice denoted by s_A^e, and a policy mapping conditional on the realization of ω denoted by $s_A^x(\omega)$. The Agency also has beliefs over ε denoted by μ_A. The Court's review strategy consists of a mapping from the set of Agency effort levels and the potential policy outcomes into a probability of reversing the Agency. Denote this strategy by $s_C(e)$ that holds for any Agency effort level $e \in [0,1]$ and potential policy outcome $y \in \mathbb{R}$. The Court, like the Legislature, also has beliefs over ω and ε characterized in the same manner as the Legislature's beliefs, which are denoted by μ_C. A PBE is a complete profile of strategies and beliefs $\rho = (s_L, \mu_L, s_A^e, s_A^x, \mu_A, s_C, \mu_C)$ such that all players are maximizing their expected payoffs given other players' strategies and, when applicable, beliefs are consistent with Bayes's rule.[11]

3 Analysis

I proceed by working backward and characterizing the Court's optimal judicial review strategy first. Following this, I move to equilibrium policy and effort choices by the Agency. Finally, I characterize the Legislature's optimal choice of agency bias in light of the effect of judicial review on agency behavior.

3.1 Equilibrium Judicial Review

The Court will uphold Agency policy actions if the expected payoff from doing so outweighs the expected payoff of reversing the Agency and allowing unregulated outcomes (*i.e.,* $y = -\omega$) to obtain. Recall that the Court only directly observes the Agency's effort investment, e. If the Court reverses

[11] Given the set-up these beliefs will always be pinned down by Bayes's rule.

the Agency then it receives the following expected payoff,

$$U_C(\text{reverse: } r=1;\rho_{-C}) = -t_C^2 - V_F.$$

In the case of reversal, the Court expects to lose utility equal to the (squared) distance from its ideal point to the expected true state (*i.e.,* $\mathbb{E}[\omega - t_C]^2 = t_C^2$) and the variance of F_ω, V_F. Alternatively, the *Court* could opt to uphold the *Agency*. This decision yields the following subjective expected payoff for upholding the Agency,

$$U_C(\text{uphold: } r=0;\rho_{-C}) \quad = \quad -V_\varepsilon(e) - \mathbb{E}_{\mu_C}[x-\omega-t_C]^2 - V_{s_A^x}[x-\omega-t_C].$$

Put simply, the Court can expect to incur losses equal to the variance of implementation conditional on effort level e ($V_\varepsilon(e)$) and the distance between agency-made policy, the true underlying state, and its own bias. The next section verifies that the Agency always sets policy sincerely (*i.e.,* at its own ideal point) so that $x^* = \omega + t_A$. Thus, the Court's beliefs are straightforward and satisfy,

$$\begin{aligned} \mathbb{E}_{\mu_C}[x-\omega-t_C]^2 &= (t_A - t_C)^2, \text{ and} \\ V_{s_A^x}[x-\omega-t_C] &= 0. \end{aligned}$$

The Court upholds the Agency if and only if $U_C(\text{uphold: } r=0;\rho_{-C}) \geq U_C(\text{reverse: } r=1;\rho_{-C})$. Simplifying and rearranging the expressions above we obtain the following incentive compatibility condition for the Court to uphold the Agency,

$$\underbrace{V_F - V_\varepsilon(e)}_{\text{Increased policy precision}} \quad \geq \quad \underbrace{(t_A - t_C)^2 - t_C^2}_{\text{Net policy loss}}. \tag{2}$$

The components of the Court's incentive compatibility condition to uphold in Equation 2 illustrate how increased precision in policy outcomes relate to spatial policy losses with respect to the Court's decision-making. If the increase in precision of outcomes outweighs the net spatial policy losses

created by an Agency setting policy with bias t_A then the Court upholds agency-made policy. This incentive compatibility condition yields the first result of the paper.

Lemma 1. *The Court upholds the Agency's policy actions if and only if the increase in policy precision given the Agency's effort investment outweighs the net policy loss from upholding an Agency with bias t_A (i.e., $r = 0 \iff V_F - V_\varepsilon(e) \geq (t_A - t_C)^2 - t_C^2$).*

The increase in policy precision on the LHS of Equation 2 is dictated by the effort investment of the Agency. This implies that the Court, conditional on Agency bias (t_A) and the volatility of the unregulated policy environment (V_F), essentially employs an effort threshold when reviewing agency policy actions. Define this effort threshold as the minimum acceptable level of Agency effort investment, given bias t_A, such that the Court will still uphold agency-made policy, which is denoted by $\underline{e}_C(t_A) \equiv e$ such that $V_F - V_\varepsilon(e) = (t_A - t_C)^2 - t_C^2$. Utilizing this effort threshold yields the following best response function for the Court,

$$s_C^*(e) = \begin{cases} \text{uphold: } r = 0 & \text{if } e \geq \underline{e}_C(t_A), \\ \text{reverse: } r = 1 & \text{if } e < \underline{e}_C(t_A), \end{cases} \tag{3}$$

where e is the Agency's effort investment and $\underline{e}_C(t_A)$ is the Court's threshold defined above. Straightforward inspection of the Court's threshold shows that the stringency of judicial review is increasing in the bias of the Agency: $\underline{e}_C(t_A)$ is increasing in t_A. All else equal, the more biased an Agency is, the harder it will have to work to be upheld by the Court.

It is not always the case that Agency effort choices affect the Court's review decisions. Define $\bar{b}_C(V_F, t_C) \equiv t_A$ such that $V_F - V_\varepsilon(1) = (t_A - t_C)^2 - t_C^2$ as the maximal level of Agency bias possible in which the Court will still uphold (given maximal effort investment). If the Agency is biased past this point the Court will never uphold regardless of effort. That is, any Agency biased past this point cannot work hard enough to offset the spatial policy losses incurred by the Court when it upholds. This could be the case because the Agency is too biased relative to the Court, $(t_A - t_C)^2$, or the policy environment is characterized by very low variability relative to agency-made policy, $V_F \to 0$

(or, obviously, some combination of these). In this case we can think of the Court as *perfectly skeptical* in the sense that the Court always reverses the Agency independent of effort investment.

Conversely, let $\underline{b}_C(t_A) \equiv t_A$ such that $V_F - V_\varepsilon(0) = (t_A - t_C)^2 - t_C^2$ be the maximal level of Agency bias in which the Court will uphold the Agency even with zero effort investment. In this case, the Agency is sufficiently moderate relative to the Court, or variability of the underlying environment is sufficiently high (or both), that the Court will always uphold the Agency independent of effort. That is, even if the Agency does not work to improve implementation at all, the Court cannot credibly commit to overturning given incentive compatibility. We can term a Court in this situation to be *perfectly deferential*. In the cases of both perfectly skeptical and perfectly deferential courts, the outcome of judicial review is invariant with respect to Agency effort choices: the Court either always reverses or always upholds the Agency and cannot credibly do otherwise.

To complete the analysis of equilibrium judicial review, simply note that there are a range of possible Agency biases that fall between these bias thresholds (*i.e.,* $t_A \in (\underline{b}_C(t_A), \bar{b}_C(V_F, t_C))$. In these cases, judicial review is responsive to Agency effort investments. The Agency's bias is such that some effort investment greater than zero and below the maximum level of effort is acceptable for the Court to uphold, but other levels of effort below that threshold ($\underline{e}_C(t_A)$) are unacceptable and the Court will reverse. In this case we can consider the Court to be employing a *conditional-deference* standard of review. The Court is willing to uphold the Agency if it invests high enough effort (and in contrast to an agency more biased than $\bar{b}_C(V_F, t_C)$ the Agency can), but if it does not then the Court will reverse (in contrast to the case of an Agency that is biased below $\underline{b}_C(t_A)$). The next section details how an Agency making these effort choices best responds to the Court's judicial review strategy.

3.2 Agency Decision-making

In this section I analyze the decision-making of the Agency. Working backward, the analysis begins with the optimal choice of policy. Following this, the analysis turns to the optimal effort choice conditional on the Court's equilibrium judicial review strategy.

3.2.1 Equilibrium Agency Policy Choice

As noted in the previous section, in equilibrium the Agency always sets policy at its ideal point, t_A. The Agency seeks to minimize the distance between its policy choice, x, and its ideal policy outcome, t_A, relative to a realized state of the world, ω.[12] Consider the (pure) strategy in which the Agency sets policy x exactly at its ideal point, $\omega + t_A$,

$$s_A^{x*}(\omega) = \omega + t_A.$$

To verify that this is a best response by the Agency, note that the Court does not observe either x or y directly. Thus, the Court's review behavior can not be conditioned on x, even indirectly. Accordingly, given the normalization that $G_\varepsilon(e)$ has expectation zero, the Agency has a weakly dominant strategy of choosing $x = \omega + t_A$, regardless of its effort investment, $e \in [0,1]$. Put another way, since the Court cannot condition its deference choice on the Agency's policy choice and the Agency's policy and effort choices are separable, the Agency is always (weakly) better off choosing policy such that it incurs zero policy loss in equilibrium.

3.2.2 Equilibrium Agency Effort

There are three cases to analyze with respect to Agency effort investments: when the Agency (1) faces a perfectly skeptical Court; (2) faces a perfectly deferential Court; and (3) faces a conditional-deference Court. In cases (1) and (2) Agency effort does not affect the Court's decision-making so I refer to these as situations in which the Agency is *unconstrained* by judicial review. However, in case (3) the Agency's effort choice does impact the Court's review decision. I refer to this situation as the Agency being *constrained* by judicial review. When the Agency is constrained, its effort choice is dispositive with respect to judicial deference.

Unconstrained Agency Effort. When the Agency is facing a perfectly skeptical Court it will not be upheld regardless of its effort investment. In equilibrium, quite intuitively, the Agency never

[12] Note that, at this point in the game, e is a sunk cost.

invests any positive effort when the Court will always reverse. The logic for this is straightforward. Regardless of the effort investment made by the Agency, the Court reverses and the final policy outcome is $y = -\omega$ from Equation 1. Since this is the outcome independent of the Agency's effort choice, any positive effort investment leads to the a net utility loss equal to effort costs. Therefore, when facing a perfectly skeptical Court the Agency never invests positive effort.

In contrast, when the Agency is facing a perfectly deferential Court it invests effort based solely on its own policy motivations *as if there were no judicial review.* Put simply, since the Court upholds the Agency regardless of effort level, the Agency only takes into account its own implicit motivations and need not be concerned with the shadow of review. Specifically, the Agency seeks to maximize its expected payoff with respect to its effort investment, e. Let $\hat{e}_A(\beta, \kappa)$ denote this effort choice, defined as follows:

$$\hat{e}_A(\beta, \kappa) = \arg\max_e \left[-\beta V_\varepsilon(e) - \kappa e\right]. \tag{4}$$

That is, $\hat{e}_A(\beta, \kappa)$ is the Agency's optimal effort investment when the Court will always uphold. With the first two cases in hand — Agency effort facing perfectly skeptical and perfectly deferential Courts — I now turn to analysis when the Agency is confronted by a conditional-deference Court.

Constrained Agency Effort. The other, most interesting, possibility is that the Agency faces a conditional-deference Court. In this case the Agency is constrained by judicial review. It must invest at least effort $\underline{e}_C(t_A)$ to be upheld. This implies that the Agency's unconstrained effort investment when the Court always upholds is less than the Court's minimum acceptable threshold level of effort: $\hat{e}_A(\beta, \kappa) < \underline{e}_C(t_A)$. Accordingly, the Agency must decide whether it prefers to invest the threshold level of effort required by the Court to be upheld or zero effort and accept being reversed.[13] To analyze when the Agency would invest the required effort to be upheld (rather than zero effort),

[13]Note that if the Agency does not find it incentive compatible to invest the threshold level of effort to be upheld then it will invest no effort since the Court will still reverse it for positive, but below the threshold, effort. The logic for this is the same as in the case of a perfectly skeptical Court.

consider the maximum level of effort the Agency would be willing to invest in order to receive judicial deference. Denote this effort investment by $e_A^{\max}(t_A)$. This can be found by rearranging the Agency's incentive compatibility condition to invest the requisite amount of effort required by the Court to be upheld (relative to investing zero effort and being reversed). The Agency's net expected payoff from investing effort at least as high as the Court's threshold $\underline{e}_C(t_A)$ is given by,

$$\Delta U_A(e \geq \underline{e}_C(t_A); \rho_{-A}) = \beta(t_A^2 + V_F - V_\varepsilon(e)) - \kappa e + \pi. \tag{5}$$

It is incentive compatible for the Agency to make this effort investment if and only if $\Delta U_A(e \geq \underline{e}_C(t_A); \rho_{-A}) \geq 0$. Solving for e so that this expression holds with equality yields the maximum effort investment, given t_A, an Agency would be willing to make given inventive compatibility:

$$e = \frac{\beta(t_A^2 + V_F - V_\varepsilon(e_A^{\max}(t_A))) + \pi}{\kappa}. \tag{6}$$

To ensure that this level of effort investment always exists, given $e \in [0,1]$, I further define the Agency's maximum level of effort investment to be upheld by a conditional-deference Court as follows,

$$e_A^{\max}(t_A) = \max\left[\min\left[\frac{\beta(t_A^2 + V_F - V_\varepsilon(e_A^{\max}(t_A))) + \pi}{\kappa}, 1\right], 0\right]. \tag{7}$$

Equation 7 says that if the RHS of Equation 6 drops below zero then the Agency is not willing to invest any effort to be upheld and if it rises above one the Agency is willing to make maximal effort investments to be upheld. Otherwise, the maximum effort investment the Agency is willing to make is on the interior of the effort interval $[0,1]$ and, by continuity, an incentive compatible investment level always exists.[14]

Put simply, if $e_A^{\max}(t_A) \geq \underline{e}_C(t_A)$ then the Agency invests the threshold level of effort, $\underline{e}_C(t_A)$, in equilibrium and is upheld. If, however, $e_A^{\max}(t_A) < \underline{e}_C(t_A)$ then the Agency invests zero effort

[14] I will typically discuss this maximum effort investment in terms that suggest a solution on the interior of $[0,1]$ as this is the most interesting case.

and is reversed by the Court. The combination of these cases: Agency effort facing a (1) perfectly skeptical Court; (2) perfectly deferential Court; and (3) conditional-deference Court all combine to give the Agency's equilibrium effort investment strategy, given by the following expression:

$$s_A^{e*} = \begin{cases} \hat{e}_A(\beta,\kappa) & \text{if } \hat{e}_A(\beta,\kappa) \geq \underline{e}_C(t_A), \\ \underline{e}_C(t_A) & \text{if } \hat{e}_A(\beta,\kappa) < \underline{e}_C(t_A) \text{ and } e_A^{\max}(t_A) \geq \underline{e}_C(t_A), \\ 0 & \text{if } \hat{e}_A(\beta,\kappa) < \underline{e}_C(t_A) \text{ and } e_A^{\max}(t_A) < \underline{e}_C(t_A), \end{cases} \tag{8}$$

where $\hat{e}_A(\beta,\kappa)$ is implicitly defined by Equation 4, $\underline{e}_C(t_A) \equiv e$ such that $V_F - V_\varepsilon(e) = (t_A - t_C)^2 - t_C^2$, and $e_A^{\max}(t_A)$ is implicitly defined by Equation 7.

There are a few aspects of the Agency's equilibrium effort investment strategy, s_A^{e*}, worth noting further. First, notice that the presence of a reviewing court can induce higher levels of effort investment than the Agency if there were no review. This is the second case of s_A^{e*} in which $\hat{e}_A(\beta,\kappa) < \underline{e}_C(t_A)$ and $e_A^{\max}(t_A) \geq \underline{e}_C(t_A)$. Conversely, the Court can also induce the Agency to invest lower effort than it would if it were unconstrained. This is the third case of s_A^{e*} in which $\hat{e}_A(\beta,\kappa) < \underline{e}_C(t_A)$ and $e_A^{\max}(t_A) < \underline{e}_C(t_A)$. In this case the Court provides a "bail out effect" for the Agency. Since implementation effort is costly, the Agency is deterred from investing any effort at all because the Court will not allow outcomes to turn out worse than the reversion level of policy precision (V_F), which in this case (holding the Agency's bias constant) is not *bad enough* to induce the Agency to invest more effort.

Second, notice that the Agency will only invest positive effort if it will be upheld by the Court. If the Agency invests any positive effort then it is either the case that the Agency is unconstrained because its own motivations drive it to invest high enough effort regardless of judicial review or because the Agency is constrained by the Court but finds it beneficial to make the effort investment required to be upheld. In either case the Court does not reverse the Agency and, therefore, positive effort will only be observed in equilibrium if the Agency will not be reversed.

Figure 1 displays an example of the Agency's equilibrium effort investments graphically and

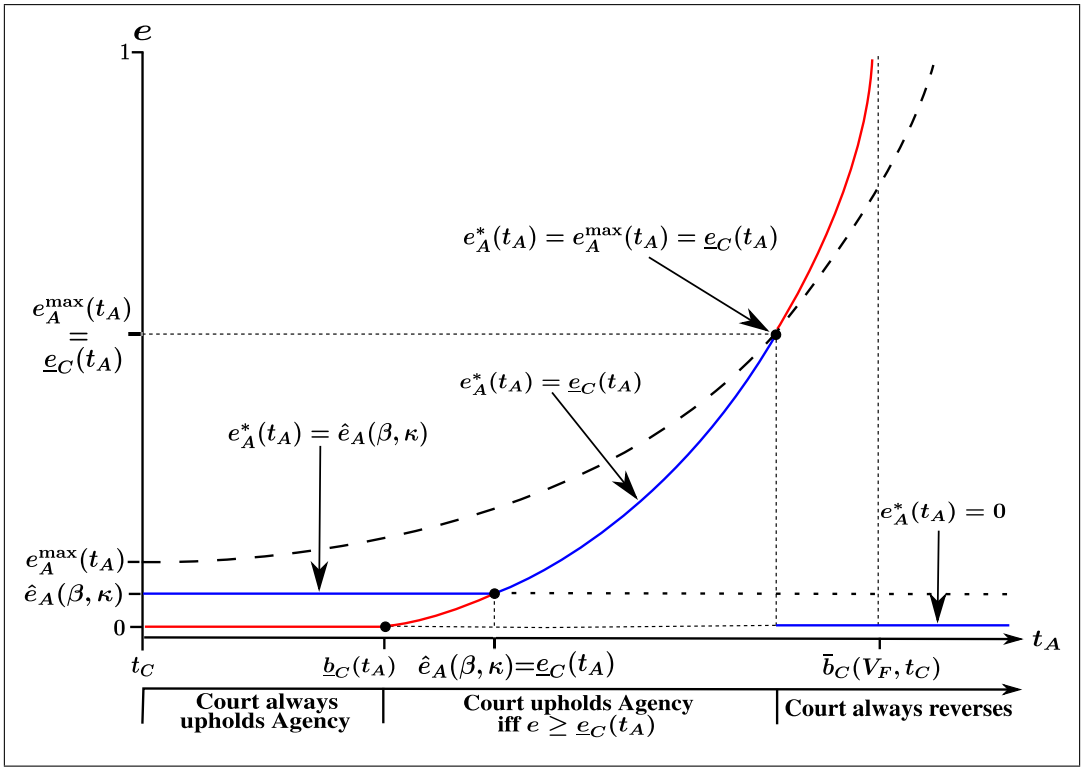


Figure 1: An Example of Equilibrium Agency Effort.

Table 1 provides a reference for the many thresholds and effort levels relevant in the figure for both the Agency and Court. The x-axis in Figure 1 is the Agency's bias, t_A, relative to the Court, t_C. The Agency becomes increasingly biased relative to the Court moving left to right. The y-axis denotes effort investments, $e \in [0,1]$. The dotted (flat) black line denotes $\hat{e}_A(\beta,\kappa)$, the level of effort the Agency invests when it is always upheld (as if there were no review). The dashed black (increasing) line denotes $e_A^{\max}(t_A)$, the highest level of effort an Agency with bias t_A is willing to invest to be upheld. The red solid line denotes $\underline{e}_C(t_A)$, the minimum threshold level of effort for the Court to uphold an Agency with bias t_A. All the solid blue lines represent $e_A^*(t_A)$, the actual equilibrium effort investment by an Agency with bias t_A as in s_A^{e*}.

How equilibrium effort changes in Agency bias is dictated in the figure by the Court's threshold level of acceptable effort (the red line) and the bias related thresholds, $\underline{b}_C(t_A)$ and $\bar{b}_C(V_F,t_C)$. When the Agency's bias is less than $\underline{b}_C(t_A)$, the Court's threshold $\underline{e}_C(t_A)$ is zero. The Court cannot credibly require any positive effort investment from the Agency at those lower levels of bias. Past

Threshold	Description
$\underline{e}_C(t_A)$	Court's minimum acceptable effort threshold for granting deference to the Agency
$\underline{b}_C(t_A)$	Max Agency bias s.t. when $e=0$, uphold (if $t_A \leq \underline{b}_C(V_F,t_C) \Rightarrow$ uphold always)
$\bar{b}_C(V_F,t_C)$	Max Agency bias s.t. when $e=1$, uphold (if $t_A > \bar{b}_C(t_A) \Rightarrow$ reverse always)
$\hat{e}_A(\beta,\kappa)$	Agency effort given $r=0$ (uphold) always (as if there were no judicial review)
$e_A^{\max}(t_A)$	Max effort Agency with bias t_A is willing to invest to be upheld
$e_A^*(t_A)$	Equilibrium effort of Agency with bias t_A

Table 1: Thresholds for Agency-Court Sub-game.

that point, however, the Court's threshold begins to rise. The Agency is now required to invest some positive effort to enjoy judicial deference. The Agency continues to simply invest its own preferred level of effort $\hat{e}_A(\beta,\kappa)$ as if it were not being reviewed (case 1 in s_A^{e*}) until the Court's threshold level of acceptable effort is high enough so that it requires the Agency to invest more effort than it would based on its own motivations. At this point $e_A^{\max}(t_A)$ comes into play. As long as $e_A^{\max}(t_A) \geq \underline{e}_C(t_A)$ then the Agency invests effort $e^*(t_A) = \underline{e}_C(t_A)$ (case 2 in s_A^{e*}).[15] At the point at which the Court's threshold and the Agency's maximum level of effort to be upheld are exactly equal we have that $e_A^*(t_A) = e_A^{\max}(t_A) = \underline{e}_C(t_A)$. The Agency is investing as much effort as it would be willing to and the Court is requiring exactly that maximal level of effort as its minimum level of acceptable effort. An Agency biased past this point no longer finds it incentive compatible to invest the Court-required threshold level of effort to be upheld (since now $e_A^{\max}(t_A) < \underline{e}_C(t_A)$) and, accordingly, invests zero effort and the Court reverses (case 3 of s_A^{e*}).

The intuition from the figure illustrates the equilibrium of the Agency-Court policymaking sub-game, formalized in the following proposition.

[15] In the figure this is where the solid blue line denoting actual equilibrium Agency effort and the red line denoting the Court's threshold level of acceptable effort overlap (and it is shaded blue).

Proposition 1. *The PBE of the policymaking sub-game between the Agency and the Court is a set of strategies and beliefs* $(s_A^{e*}, s_A^{x*}, s_C^*, \mu_C)$ *in which,*

1. *the Agency invests effort according to* s_A^{e*},
2. *the Agency chooses its ideal policy* $(s_A^{x*}(\omega))$*, and*
3. *the Court makes judicial review decisions according to* $s_C^*(e)$.

The next section explores how Agency effort investments vary in several parameters of the model based on whether the Agency's effort levels are affected by judicial review (*i.e.,* whether the Agency is unconstrained or constrained by the Court).

3.3 Agency Effort Choices and Judicial Review

The previous sections outlined how judicial review can have differential effects on Agency effort investments when implementing policy conditional on whether it constrains Agency decision-making. In this section I characterize how effort investments respond to changes in underlying parameters. First, recall that when the Court is unable to commit to ever reversing agency-made policy the Agency invests effort $\hat{e}_A(\beta, \kappa)$. A straightforward inspection of this effort choice (Equation 4) characterizes the comparative statics in this case. Intuitively, the Agency makes higher effort investments when the Court cannot commit to reversing its actions as its policy motivations, β, increase. This could be situations in which a higher β denotes a stronger commitment to Agency mission (Wilson 1989) or perhaps agencies with stronger implicit motivations are staffed with a higher ratio of zealots (Gailmard and Patty 2007). The more intense an Agency's policy preferences, the more effort it invests when it knows it will always be upheld.[16] Similarly, when the Court cannot commit to reversing, the Agency's effort investment is negatively correlated with effort costs, κ. This suggests that agencies authorized to administer policy in more complex policy areas where costs are higher and effective implementation more onerous may, all else equal, make lower effort investments than

[16]Note that this is equivalent to the effort the Agency would invest if there were no judicial review, a point to which I return in section 3.4.

agencies operating in less complex, and less costly, policy areas. Notice that neither judicial review (through the parameter π) nor the Agency's bias (t_A) play a role in effort investments in this case.

In contrast, when the Court can credibly overturn the Agency if it observes insufficient effort, the Agency is constrained by judicial review and more parameters play a role in effort decisions. Recall that in this case the Agency decides whether to invest sufficient effort to be upheld by the Court or zero effort and accept being reversed. This choice depends on the Agency's net expected payoff for effort investments at the Court's threshold in Equation 5. Inspection of this case shows that the likelihood that the Agency will invest $\underline{e}_C(t_A)$ rather than zero effort is increasing in the Agency's policy motivations β and decreasing in effort costs κ, as in the unconstrained case above. However, in this case the incentives for the Agency to increase its investment to the Court's threshold are also increasing in the resulting increase in policy precision ($V_F - V_\varepsilon(e)$) as well as the Agency's bias (t_A), and aversion to being reversed, π. The more biased and the more reversal-averse the Agency is, the more effort it is willing to invest to be upheld. The most interesting insight from these comparative statics is formalized in the following result.

Proposition 2. *Policy bias impacts Agency effort if and only if judicial review also impacts Agency effort.*

If effective implementation of policy, which is affected by agency effort, is a concern then judicial review affects that effort only if the Agency's bias does as well, and vice versa. This implies that judicial review of agencies only has an impact on policymaking behavior if the agency's bias also impacts that behavior. Similarly, the bias of the agency does not affect the amount of effort the agency invests toward effectively administering policy if there is no meaningful (credible) reviewability of its actions. This raises the question: from the legislature's point of view, what is the optimal level of bias in light of judicial review's affect on agency effort incentives?

3.4 The Instrumental Value of Politicized Policymaking

3.4.1 Optimal Agency Bias without Judicial Review

To begin the analysis of the Legislature's choice of Agency bias, consider a situation in which there is no credible judicial review of Agency policy actions. This situation is one in which the Legislature delegates all policymaking authority to the Agency with no ex post check on agency decision-making. It serves as a baseline case that, coupled with the results below, highlights how the presence of meaningful judicial review structures the incentives for legislative design of administration agencies. The following result characterizes optimal agency bias in this environment.

Proposition 3. *When there is no judicial review of agency policy actions the Legislature always chooses an Agency with the same ideal point (i.e.,* $t_A^* = t_L = 0$*).*

The logic for this result is straightforward. First, recall that the Agency always sets policy sincerely (*i.e.,* at its ideal point) so that $x^* = \omega + t_A$. From Equation 4, the Agency, when unconstrained, invests effort $\hat{e}_A(\beta, \kappa)$. This, coupled with the fact that Agency bias impacts its effort choice if and only if being reviewed does as well (Proposition 2), highlights the fact that the Agency invests effort based on its own motivations (in particular β and κ) independent of the Legislature's choice of t_A. Thus, the Legislature, since it cannot impact Agency effort through its choice of t_A, optimally creates an ally agency.

3.4.2 Optimal Agency Bias with Judicial Review

In this section I explore the optimal choice of Agency bias from the Legislature's perspective when there is judicial review. In what follows I will assume that the Legislature does not benefit from setting a t_A so that the Court overturns. This precludes environments in which the Court is so biased away from the Legislature that there is no Agency ideal point the Legislature would choose that leads to the Court upholding. Essentially, this assumption ensures a focus on realistic scenarios in which there is an Agency the Legislature can choose that would lead to policymaking behavior that induces the Court to uphold.

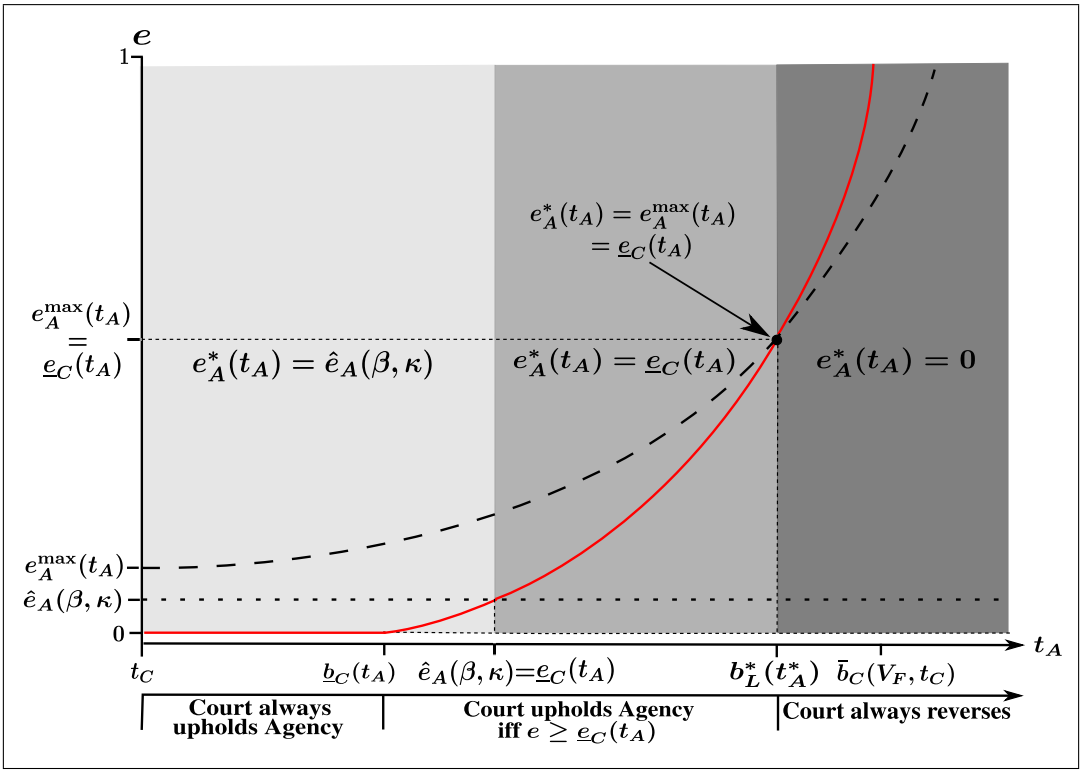


Figure 2: An Example of Optimal Legislative Choice of Agency Bias.

In the process of deciding where to choose t_A the Legislature takes into account the dynamics of the Agency-Court sub-game characterized above and depicted graphically in Figure 1. That is, the Legislature knows its choice of t_A will affect the impact (or lack thereof) that judicial review has on Agency effort incentives. Let $b_L^*(t_A^*)$ denote the Legislature's optimal choice of Agency bias. Recall that $t_C < 0$ so that the Court is located to the left of the Legislature ($t_L = 0$). Figure 2 graphically displays the Legislature's optimal choice of Agency bias in light of Agency-Court interactions. The shaded regions illustrate different equilibrium effort based on agency bias (the x-axis). Each region is labeled accordingly with the Agency's equilibrium effort in that region. From Figure 1, when Agency bias is less than $\underline{b}_C(t_A)$ it invests effort based on its own motivations (as if there were no review) since the Court always upholds. This effort investment is denoted by the dotted black line labeled $\hat{e}_A(\beta,\kappa)$. Past the point at which $\hat{e}_A(\beta,\kappa)$ and $\underline{e}_C(t_A)$ intersect the Agency invests the threshold level of effort required to be upheld as long as $e_A^{\max}(t_A) \geq \underline{e}_C(t_A)$. The black dashed and red solid lines represent $e_A^{\max}(t_A)$ and $\underline{e}_C(t_A)$, respectively.

However, once the Agency becomes too biased (i.e., t_A such that $e_A^{\max}(t_A) < \underline{e}_C(t_A)$) it is no longer incentive compatible for the Agency to invest enough effort to be upheld. So, the Agency invests zero effort and the Court overturns the Agency. Thus, the Legislature sets Agency bias at this intersection, labeled $b_L^*(t_A^*)$. This is the point at which the Agency is as biased as it can be such that it invests maximal effort (from its perspective) and the Court will uphold based on that effort. The Agency, however, responds to judicial oversight regardless of whether it is to the left (further from the Legislature) or the right of the Court (toward the Legislature). That is, the impact of judicial review on Agency effort investment is symmetric with respect to its location from the Court (above or below). The next result precludes creating an Agency on the opposite side of the Court (i.e., an Agency more extremely biased than the Court on the same side of the Legislature).

Proposition 4. *The Legislature never gains from setting t_A at a greater distance from its ideal point than is the ideal point of the Court (t_C).*

Proposition 4 establishes the directionality of the Legislature's choice of agency bias relative to the Court. Recall that $t_C < 0$ by assumption so that the Court's ideal point is to left of the Legislature. So, Proposition 4 says that the Legislature chooses $t_A^* > t_C$ so that the Agency's ideal point is to the right of the Court. While this result establishes directionality, it does not establish *how far* from the Court's ideal point the Legislature optimally designs the Agency.

To begin to explore the answer to this question, consider the best case scenario for the Legislature. If t_C is biased exactly far enough from zero, the Legislature can optimally set $t_A^* = 0$. In this scenario the Legislature is able to enjoy increased effort investments from the Agency while losing nothing in the way of spatial policy choice. This is obviously a knife-edge case that is unlikely to realistically obtain often. Further, it is an extreme case in the sense that for this environment to hold the Court must be highly biased away from the Legislature. For the remainder of this section I will assume that t_C is not extreme enough to allow for this best case scenario. Instead, I will focus on the more realistic case in which the Court's ideal point is closer to the Legislature's.

Consider, then, an environment in which the Court is moderately biased away from the Leg-

islature (again, suppose $t_C < 0$).[17] In this case the Legislature cannot choose an ally Agency per the argument above. The following result describes how the Legislature chooses a biased Agency in this environment.

Proposition 5. *Suppose that the Legislature cannot obtain the best case scenario outcome given t_C in which $t_A^* = 0$. Then, the Legislature always sets t_A as extreme as possible away from the Court, in the direction of its own ideal point, conditional on the Agency continuing to invest effort that leads to the Court upholding agency-made policy.*

Recall that the Legislature is choosing t_A so that the Court upholds the Agency. Further, suppose that the Legislature chooses t_A^* to solve the Court's incentive compatibility constraint to uphold with equality:

$$V_F = (t_A^* - t_C)^2 - t_C^2 + V_\varepsilon(e_A^*(t_A^*)).$$

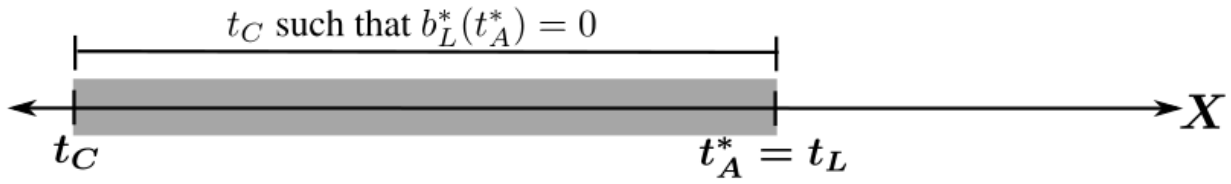
So, the Court is indifferent from upholding or reversing the Agency given the induced equilibrium effort investment, $e_A^*(t_A^*)$, and the Agency's bias. Now consider the Legislature's incentive compatibility condition to set t_A in this way:

$$V_F = t_A^{*2} + V_\varepsilon(e_A^*(t_A^*)).$$

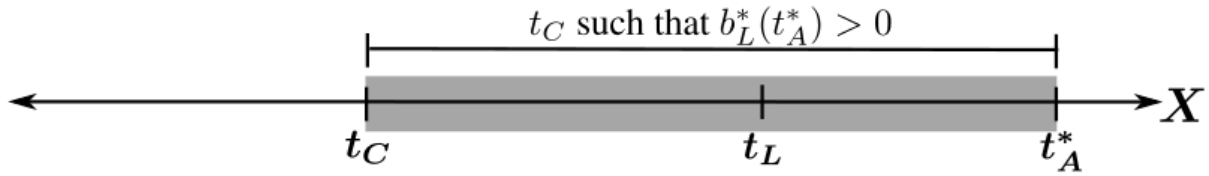
Provided that t_A and t_C are oppositely signed, increasing $t_A > 0$ costs the Court more in terms of spatial policy choice losses than the Legislature. This means that the reduction in implementation variance, $V_\varepsilon(e_A^*(t_A^*))$, more than offsets the losses incurred by the Legislature from biasing the Agency. This is because the Court requires more effort from the Agency to offset its own losses, which are greater than those borne by the Legislature. Thus, given that the Court will uphold, the increase in Agency effort when $t_C < 0$ and $t_A > 0$ always outweighs an increase in bias.[18] If the Legislature were to bias the Agency past the point at which the Court will uphold even with maximal

[17] By 'moderately biased' I simply mean not so biased that the Legislature can institute the best case scenario discussed above.

[18] This is also true for $t_C > 0$ and $t_A < 0$, but since I have focused on $t_C < 0$ throughout I continue with that assumption.



(a) Case in which t_C is exactly far enough away from $t_L = 0$ so that t_A^* is such that $b_L^*(t_A^*) = t_L$.



(b) Case in which t_C is more moderate so that the Legislature creates a biased Agency: t_A^* such that $b_L^*(t_A^*) > t_L$.

Figure 3: Examples of Optimal Institutional Arrangements for Legislature.

effort, the Agency will revert to zero effort investment and the Court will overturn (contradicting the assumption that this harms the Legislature). Conversely, if the Legislature were to set Agency bias less than t_A^* it will lose out on effort increases that would offset the losses associated with biasing the Agency to t_A^*. Thus, the Legislature always sets t_A^* as far from the Court as possible, on the opposite side of its own ideal point, conditional on the Agency still being upheld given its effort investment (e.g., $b_L^*(t_A^*)$ in Figure 2).

Figure 3 displays these possibilities graphically. Figure 3a is the first, knife-edge case in which t_C is exactly far enough from t_L so that it is optimal to appoint an ally agency ($t_A^* = t_L = 0$). In this case, the Legislature is able to enjoy the maximal effort investment it can induce through its choice of Agency ideal point while sacrificing nothing in the way of spatial policy losses. The second case, Figure 3b, represents an environment in which the Court is more moderate. In this case, the Legislature chooses a positively biased Agency opposite its ideal point from the Court. The Agency still invests the same effort as in the first case, but in order to enjoy that effort the Legislature must bias the Agency the same distance from t_C as in the first case. This illustrates that, except in extreme cases in which the Court's ideal point allows the Legislature to get this maximal effort *and* an ally Agency, the Legislature optimally creates an Agency on the opposite side of its

ideal point from the Court. That is, the Legislature benefits from creating a politicized policymaking system through agency design.

This analysis provides a foundation for understanding the optimal institutional arrangement from a principal's perspective. Specifically, it provides an argument that cuts against the ally principle (Bendor and Meirowitz 2004).[19] Except under extraordinary circumstances, the Legislature benefits from the Court and Agency being on opposite sides of its ideal point. These results are driven by the interactions between political agency problems, agency bias, and the oversight's effects on agency behavior. The Legislature is forced to trade off bias for increased effort investment when effective policy enforcement is a concern. Moreover, this dynamic is only present when there is judicial review (Proposition 2). This highlights the power of judicial oversight in providing incentives for agency effort investment. The Legislature cannot achieve increased effort without the looming threat of judicial reversal. Thus, the Legislature benefits from creating an adversarial, politicized policymaking system in which the Agency and the Court are pitted against one another ideologically.

4 Empirical Implications

The Legislature's optimal choice of agency bias is responsive to changes in Agency characteristics such as policy motivation and aversion to being reversed by the Court. First, note that $\underline{e}_C(t_A)$ is increasing in t_A but is solely based on Court motivations and is unresponsive to Agency characteristics outside of bias. However, the location of the optimal level of bias from the Legislature's perspective, $b_L^*(t_A^*)$, is affected by changes in these Agency characteristics through their effect on $e_A^{\max}(t_A)$.

Consider differences between more and less policy motivated agencies. The higher is β, the more policy motivated the agency. This dynamic is depicted in Figure 4. The solid and dashed black

[19]Bendor and Meirowitz (2004) also provide insight into when the ally principle may not hold. Most relevant their analysis that suggests that if a biased agent, relative to an ally, is more competent or more willing to work hard then it could be optimal for a principal to appoint a biased agent. This paper provides one possible microfoundation for why a biased agent may be incentivized to work harder: ex post oversight.

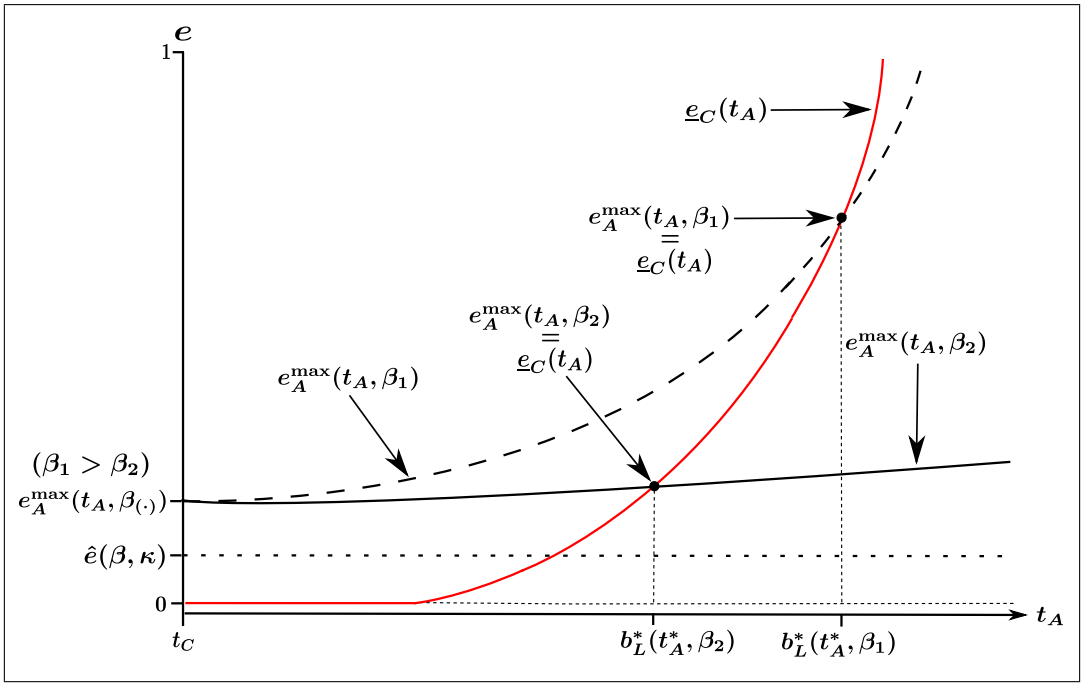


Figure 4: An Example of Legislative Choice of Agency Bias with Low and High Policy Motivations.

lines represent agency maximal levels of effort to be upheld with relatively low and high policy motivations (*i.e.,* low and high β, respectively). As in the other figures, the red line represents the Court's threshold level of acceptable implementation effort. The agency with higher policy motivations (β_1) has a maximum effort investment it is willing to make to be upheld that is increasing in its bias much faster than the agency's effort with lower policy motivations (β_2). As the Agency becomes more policy motivated it is willing to invest higher levels of effort to be upheld and this maximum level of effort is increasing at a much faster rate relative to agencies that are not as strongly policy motivated. Accordingly, the optimal level of agency bias is *more extreme* the more policy motivated the agency. That is, $b_L^*(t_A^*)$ is more extreme when β is larger. This provides a testable implication for observed levels of administrative agency bias. Agencies characterized by higher levels of policy motivation ought to be observed as more biased than their less policy motivated counterparts. The model suggests that we should observe a positive correlation between agency policy motivation and agency bias. This may reflect differences across the individual bureaucrats staffing agencies in terms of implicit motivations (Prendergast 2007), the ratio of "zealots" to "slackers" (Gailmard and Patty

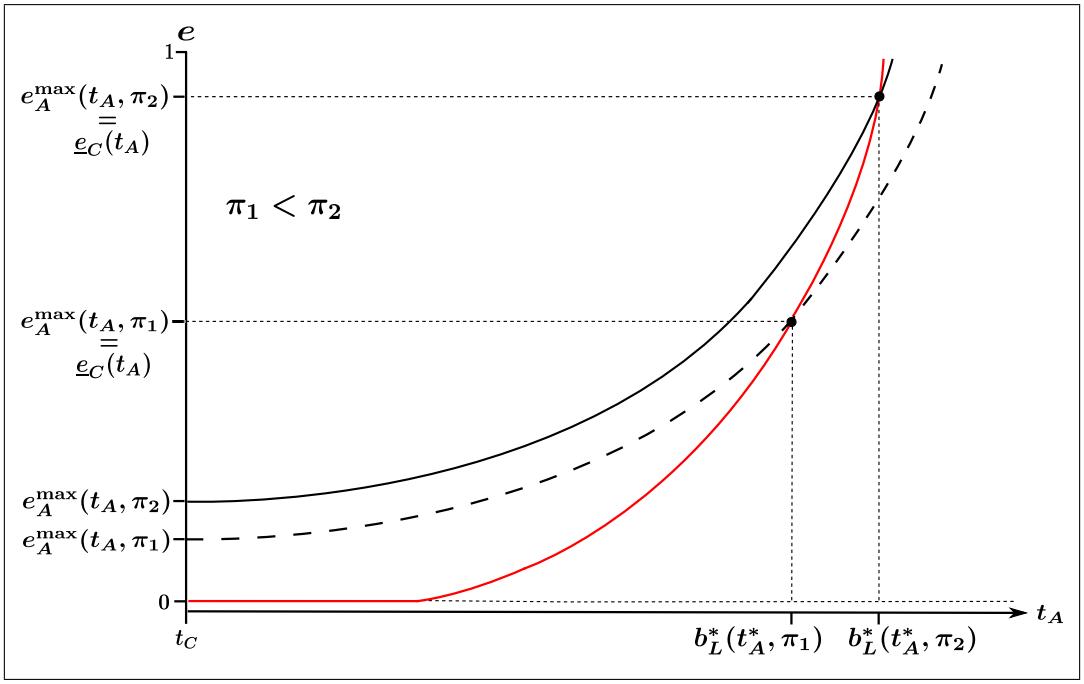


Figure 5: An Example Illustrating Complementarity of t_A and π.

2007), or the agency's commitment to mission (Wilson 1989).

Similarly, Figure 5 has two curves — $e_A^{\max}(t_A, \pi_1)$ and $e_A^{\max}(t_A, \pi_2)$ — differentiated only by the level of aversion an agency has to being reversed. The solid black line, $e_A^{\max}(t_A, \pi_2)$, increases in agency bias at the same rate as the dashed black line, $e_A^{\max}(t_A, \pi_1)$, but is shifted up proportional to the difference between π_2 and π_1, where $\pi_2 - \pi_1 > 0$. The agency more averse to being reversed is willing to invest more effort to be upheld holding bias (and other parameters) fixed. This illustrates the complementarity of agency aversion to being reversed by a court, π, and agency bias, t_A, with respect to agency effort levels. This shift in aversion to being reversed in court leads to a more extreme level of optimal bias from the Legislature's perspective. The more averse the agency is to being reversed, the more extreme the optimal level of agency bias. The model suggests a positive correlation, as in the case of policy motivation and bias above, between an agency's aversion to being overturned in court and agency bias. We should observe higher levels of agency bias the more severe the punishment for being reversed in court. Conversely, if a political principal cannot directly affect agency bias then it should adjust the severity of the punishment when the agency is reprimanded by

an ex post reviewer. In the case of Congress, writing more stringent judicial review provisions into authorizing legislation when agency bias cannot be readily changed may help to realign the effort the agency is willing to invest to be upheld to a more desirable level.

Finally, and more generally, the model suggests that inferences regarding principal-agent preference congruence should be drawn carefully. In particular, the analysis in this paper suggests that a legislature, like Congress, may design and sustain biased policymaking agencies for instrumental reasons in light of the overarching policymaking system. Therefore, the observation that an agency is biased relative to its Congressional overseer — *e.g.,* a Congressional committee with oversight powers — does not necessarily imply agency subversion. That is, since agencies may be created or empowered *because they are biased* for instrumental reasons it could be the case that biased agencies are doing precisely what their political principals want them to do within the constraints inherent in the larger policymaking system. Overall, this suggests empirical studies of administrative policymaking should take into account the dynamics of the overarching policymaking system and exercise caution when interpreting results that seem to suggest preference divergence between a political principal and its policymaking agent.

5 Conclusion

In this paper I developed a theory that offers explanations of how judicial review can impact the effort choices of administrative policymaking agencies and how these effects structure legislative incentives for the design and sustainability of biased agencies. Policy bias is used, in conjunction with the monitoring value of judicial review, to provide incentives for sufficient effort in policy implementation from agencies that would, all else equal, prefer to work less. If agency bias is of consequence to administrative effort then so is judicial review and judicial review serves no purpose with respect to effort incentives if agency bias is not purposive as well. The choice of allocating policymaking authority to a biased policymaking agency is, therefore, instrumental from the legislative perspective. Moreover, legislatures like Congress may design and authorize more or less biased agencies in order to induce higher levels of effort conditional on characteristics of the

agency. In particular, agencies that are either more highly policy motivated or more averse to being overturned by courts — perhaps due to more severe consequences — will, ceteris paribus, be more biased than their less policy motivated or reversal-averse counterparts. The results also suggest that inferences from empirical observations in American policymaking ought to be made taking into account potential congressional selection effects and the limitations of judicial review as an instrument of control highlighted in this paper. Overall this paper contributes to our understanding of regulatory oversight, the existence and potential optimality of biased policymaking agencies, and the interplay between different institutions central to the American policymaking process when both bureaucratic drift and slack are problematic.

6 Appendix

Equilibrium Judicial Review.

Lemma 1. *The Court upholds the Agency's policy actions if and only if the increase in policy precision given the Agency's effort outweighs the net policy loss from upholding an Agency with bias t_A. (i.e., $r = 0 \iff V_F - V_\varepsilon(e) \geq (t_A - t_C)^2 - t_C^2$).*

Proof. The Court's subjective expected utility for overturning the Agency is given by,

$$U_C(r = 1; \rho_{-C}) = -t_C^2 - V_F.$$

The Court's subjective expected utility for upholding the Agency, given $s_A^{x*}(\omega) = \omega + t_A$ (shown in Lemma 3), is given by,

$$U_C(r = 0; \rho_{-C}) = -(t_A - t_C)^2 - V_\varepsilon(e).$$

These expected utilities, combined and rearranged, yield the Court's incentive compatibility condition for upholding the Agency given Agency policy and effort choices. This incentive compatibility condition is given by,

$$(t_A - t_C)^2 - t_C^2 \leq V_F - V_\varepsilon(e). \tag{9}$$

The LHS of Equation 9 gives the net policy loss the Court bears for upholding an Agency with bias t_A and the RHS gives the increase in policy precision for upholding. The Court upholds the Agency if it is incentive compatible to do so, leading to the result in the lemma that the Court will uphold the Agency if and only if the net policy loss of upholding is weakly outweighed by the increase in policy precision of doing so. ■

Lemma 2. *The Court's optimal judicial review strategy is given by the following expression:*

$$s_C^*(e) = \begin{cases} \textit{uphold: } r = 0 & \textit{if } e \geq \underline{e}_C(t_A), \\ \textit{reverse: } r = 1 & \textit{if } e < \underline{e}_C(t_A), \end{cases}$$

where $\underline{e}_C(t_A)$ is the minimum acceptable effort level such that the Court will still uphold the Agency, i.e., $\underline{e}_C(t_A) \equiv e$ such that $V_F - V_\varepsilon(e) = (t_A - t_C)^2 - t_C^2$.

Proof. Follows directly from the Court's incentive compatibility constraint, Equation (9), derived in Lemma 1. ■

Agency Decision-making.

Agency Policy Choice.

Lemma 3. *The Agency always sets policy at its ideal point: $s_A^{x*}(\omega) = \omega + t_A$.*

Proof. To show that the Agency always sets policy at its ideal point I show that it is always better off by checking deviations in two cases: (1) when the Court upholds the Agency and (2) when the Court reverses the Agency. In both cases let $\delta > 0$ denote the Agency's deviation so that if the agency deviates $x = \omega + t_A + \delta$.

Case 1: Court upholds. The Agency's expected utility from setting policy sincerely, $x = \omega + t_A$, is given by,

$$U_A(x = \omega + t_A | r = 0) = -\beta V_\varepsilon(e) - \kappa e.$$

The Agency's expected utility from deviating and setting policy to $x = \omega + t_A + \delta$ is given by,

$$U_A(x = \omega + t_A + \delta | r = 0) = -\beta(\delta^2 + V_\varepsilon(e)) - \kappa e.$$

These combine to give the Agency's net expected payoff from deviating from sincere policymaking:

$$\begin{aligned} \Delta U_A(x = \omega + t_A + \delta | r = 0) &= -\beta(\delta^2 + V_\varepsilon(e)) - \kappa e + \beta V_\varepsilon(e) + \kappa e, \\ &= -\beta\delta^2. \end{aligned}$$

If $\beta = 0$ then the Agency is no better off from deviating and if $\beta > 0$ the Agency is strictly worse off from deviating. Thus, when the Court upholds the Agency, the Agency, in weakly undominated strategies, does not deviate and chooses policy at its ideal point.

Case 2: Court reverses. The Agency's expected utility from making policy sincerely given the Court reverses is given by,

$$U_A(x = \omega + t_A | r = 1) = -\beta(t_A^2 + V_F) - \pi.$$

The Agency's expected utility from deviating by δ is given by,

$$U_A(x = \omega + t_A + \delta | r = 1) = -\beta(t_A^2 + V_F) - \pi.$$

The net expected payoff for deviating then, since the Agency receives the same payoff from Court reversal regardless, is zero. Having shown that the Agency gains nothing from deviating from the posited equilibrium strategy of sincere policymaking in both cases, the result follows. ■

Agency Effort Choice.

Lemma 4. *Define* $e_A^{\max}(t_A) = \max\left[\min\left[\frac{\beta(t_A^2 + V_F - V_\varepsilon(e_A^{\max}(t_A))) + \pi}{\kappa}, 1\right], 0\right]$. *The Agency will never invest effort higher than* $e_A^{\max}(t_A)$ *to be upheld by the Court.*

Proof. When the Agency is constrained its net expected utility from investing the threshold level of effort required to be upheld is given by (I simply use e to represent this level of effort),

$$\Delta U_A(e \geq \underline{e}_C(t_A); \rho_{-A}) = \beta(t_A^2 + V_F - V_\varepsilon(e)) - \kappa e + \pi.$$

Thus, the Agency will invest this level of effort if and only if $\Delta U_A(e \geq \underline{e}_C(t_A); \rho_{-A}) \geq 0$. Solving the expression with equality for e gives the maximum level of effort the Agency would be willing to invest given t_A in order to be upheld (by incentive compatibility):

$$e = \frac{\beta(t_A^2 + V_F - V_\varepsilon(e)) + \pi}{\kappa}. \tag{10}$$

The RHS of Equation 10 can fall below 0 and rise above 1. So to ensure that the maximum level of

effort investment the Agency exists further define:

$$e_A^{\max}(t_A) = \max\left[\min\left[\frac{\beta(t_A^2 + V_F - V_\varepsilon(e_A^{\max}(t_A))) + \pi}{\kappa}, 1\right], 0\right].$$

Given this formulation, $e_A^{\max}(t_A)$ always exists. The RHS Equation 10 is continuous over the interval $[0,1]$ (and if 0 or 1 is the solution). So, either $e_A^{\max}(t_A)$ is on a boundary (0 or 1, if the RHS of Equation 10 is either negative or above one respectively) or there is an interior solution, which is implied by the Intermediate Value Theorem. Optimality of this as an Agency best response follows from incentive compatibility. ■

Lemma 5. *In equilibrium, the Agency will invest effort according to the following strategy,*

$$s_A^{e*} = \begin{cases} \hat{e}_A(\beta,\kappa) & \text{if } \hat{e}_A(\beta,\kappa) \geq \underline{e}_C(t_A), \\ \underline{e}_C(t_A) & \text{if } \hat{e}_A(\beta,\kappa) < \underline{e}_C(t_A) \text{ and } e_A^{\max}(t_A) \geq \underline{e}_C(t_A), \\ 0 & \text{if } \hat{e}_A(\beta,\kappa) < \underline{e}_C(t_A) \text{ and } e_A^{\max}(t_A) < \underline{e}_C(t_A), \end{cases}$$

where $\hat{e}_A = \arg\max_e -\beta V_\varepsilon(e) - \kappa e$, $\underline{e}_C(t_A) \equiv e$ *such that* $V_F - V_\varepsilon(e) = (t_A - t_C)^2 - t_C^2$, *and* $e_A^{\max}(t_A) = \max\left[\min\left[\frac{\beta(t_A^2 + V_F - V_\varepsilon(e_A^{\max}(t_A))) + \pi}{\kappa}, 1\right], 0\right]$.

Proof. To verify that these are best responses for the agency we need to check three cases: (1) the court always overturns ($\hat{e}_A(\beta,\kappa) < \underline{e}_C(t_A)$ and $e_A^{\max}(t_A) < \underline{e}_C(t_A)$); (2) the court always upholds ($\hat{e}_A(\beta,\kappa) \geq \underline{e}_C(t_A)$); (3) the court upholds if and only if the agency invests effort high enough, which is higher than the agency would invest absent judicial review ($\hat{e}_A(\beta,\kappa) < \underline{e}_C(t_A)$ and $e_A^{\max}(t_A) \geq \underline{e}_C(t_A)$). These cases are defined by the court's best response in Lemma 2 and the maximum effort investment the agency is willing to make to be upheld in Lemma 4.

Court always overturns (perfectly skeptical). To see why the Agency never invests positive effort in an environment in which it will always be reversed by the Court note that the Agency's

expected payoff for investing positive effort given it will be overturned is:

$$U_A(e>0|r=1) = -\beta(t_A^2+V_F) - \kappa e - \pi.$$

The Agency's expected payoff from investing no effort given it will be overturned is:

$$U_A(e=0|r=1) = -\beta(t_A^2+V_F) - \pi.$$

These combine to give the Agency's net expected payoff from investing positive effort given that it will be reversed by the Court,

$$\begin{aligned}\Delta U_A(e>0|r=1) &= -\beta(t_A^2+V_F)+\beta(t_A^2+V_F)-\kappa e-\pi+\pi,\\ &= -\kappa e.\end{aligned}$$

Thus, if the Agency invests positive effort when it will be reversed it simply pays the cost for that effort, and, therefore, optimally invests zero effort.

Court always upholds (perfectly deferential). When the Agency is unconstrained we simply take the expected payoff for the Agency given it will always be upheld.

$$\begin{aligned}u_A(e,y,r) &= -\beta(y-t_A)^2-\kappa e-\pi r,\\ u_A(e,y,0) &= -\beta(y-t_A)^2-\kappa e,\\ &= -\beta(x-\omega+\varepsilon-t_A)^2-\kappa e,\\ &= -\beta(\varepsilon)^2-\kappa e,\\ U_A(e|r=0) &= -\beta(\mathbb{E}[\varepsilon]^2+V_\varepsilon(e))-\kappa e,\\ &= -\beta V_\varepsilon(e)-\kappa e.\end{aligned}$$

The Agency seeks to maximize $U_A(e|r=0)$ with its effort choice, which implies that the Agency solves the following problem with its choice of effort,

$$\hat{e}_A(\beta,\kappa) = \arg\max_e -\beta V_\varepsilon(e) - \kappa e.$$

Moreover, $\hat{e}_A(\beta,\kappa)$ exists since it is the maximum of a continuous function on a compact set and is unique so long as $V_\varepsilon(e)$ is strictly monotone.

Conditional-deference court. In this environment $\hat{e}_A(\beta,\kappa) < \underline{e}_C(t_A)$ so the Agency is constrained by the Court. The Agency compares its expected utility from investing the threshold level of effort and being upheld by the Court and its expected utility from investing zero effort and being overturned. These expected payoffs are given by the following expressions, respectively:

$$\begin{aligned} U_A(e=\underline{e}_C;\rho_{-A}) &= -\beta V_\varepsilon(\underline{e}_C) - \kappa \underline{e}_C, \\ U_A(e=0;\rho_{-A}) &= -\beta(t_A^2 + V_F) - \pi. \end{aligned}$$

These combine to give the net expected payoff for investing the threshold level of effort (and being upheld rather than overturned):

$$\begin{aligned} \Delta U_A(\underline{e}_C;\rho_{-A}) &= -\beta V_\varepsilon(\underline{e}_C) - \kappa \underline{e}_C + \beta(t_A^2 + V_F) + \pi, \\ &= \beta(t_A^2 + V_F - V_\varepsilon(\underline{e}_C)) - \kappa \underline{e}_C + \pi. \end{aligned} \tag{11}$$

Equation 11 gives the Agency's incentive compatibility condition for investing the threshold level of effort, $\underline{e}_C(t_A)$, rather than $e=0$ and being overturned by the Court. As long as this condition is weakly greater than zero the Agency, in weakly undominated strategies, will invest the threshold level of effort to be upheld when constrained by the Court. ■

Proposition 1. The PBE of the policymaking sub-game between the Agency and the Court is a set of strategies and beliefs $(s_A^{e*}, s_A^{x*}, s_C^*, \mu_C)$ in which,

1. the Agency invests effort according to s_A^{e*},

2. the Agency chooses its ideal policy ($s_A^{x*}(\omega)$), and

3. the Court makes judicial review decisions according to $s_C^*(e)$.

Proof. Lemma 2 shows the Court makes review decisions as in part 3. Lemma 3 states that the Agency always sets policy at its ideal point as in part 2. Lemma 5 shows the Agency's effort investment best response function as in part 1. Taken together, this yields the sub-game equilibrium as stated in the proposition. ■

Lemma 6. *The Agency's equilibrium level of effort when unconstrained by the Court, $\hat{e}_A^*(\beta,\kappa)$, is:*

1. *decreasing the effort costs borne by the Agency, i.e., $\frac{\partial \hat{e}_A^*}{\partial \kappa} < 0$.*

2. *increasing in the Agency's policy motivation, i.e., $\frac{\partial \hat{e}_A^*}{\partial \beta} > 0$.*

Proof. Since the Agency is unconstrained by the Court—judicial review has no impact on Agency effort choice—the Agency chooses an optimal level of effort according to its own motivations (relative to costs) given by,

$$\hat{e}_A(\beta,\kappa) = \arg\max_e -\beta V_\varepsilon(e) - \kappa e.$$

This yields the first order condition,

$$-\beta V_\varepsilon'(e) - \kappa = 0.$$

Applying the Implicit Function Theorem we get the Agency's optimal level of effort when unconstrained with respect to both κ and β, respectively:

$$\frac{\partial \hat{e}_A^*(\beta,\kappa)}{\partial \kappa} = -\frac{1}{\beta V_\varepsilon''(e)} < 0,$$

where $\beta V_\varepsilon''(e) > 0$ follows from $\beta > 0$ and the fact that $V_\varepsilon(e)$ is strictly decreasing and convex. Now

optimal Agency effort when unconstrained with respect to policy motivation is given by,

$$\begin{aligned}\frac{\partial \hat{e}_A^*(\beta,\kappa)}{\partial \beta} &= -\frac{\frac{\kappa}{\beta}}{-\beta V_\varepsilon''(e)}, \\ &= \frac{\kappa}{\beta^2 V''(e)} > 0,\end{aligned}$$

where $\kappa > 0$ by assumption and $\beta^2 V_\varepsilon''(e) > 0$ follows from the fact that $\beta > 0$ and $V_\varepsilon''(e) > 0$ since $V_\varepsilon(e)$ is strictly decreasing and convex. The results in the lemma follow naturally. ■

Proposition 2. *Policy bias impacts Agency effort if and only if judicial review also impacts Agency effort.*

Proof. This follows directly from the fact that neither π (reversal aversion) nor t_A (agency bias) appear in Equation 4 (Agency effort when it is unconstrained by review), and both π and t_A appear in Equations 5 and 7 (Agency effort when constrained by review). ■

Optimal Agency Bias

Proposition 3. *When there is no judicial review of agency policy actions the Legislature always chooses an Agency with the same ideal point (i.e., $t_A^* = t_L = 0$).*

Proof. We know, from Lemma 3, that the Agency always chooses policy at its ideal point. Thus, $x^* = \omega + t_A$ always. From Lemma 5 we know that when the Agency is unconstrained (review has no impact on effort) it chooses $\hat{e}_A(\beta,\kappa)$ that solves $\arg\max_e -\beta V_\varepsilon(e) - \kappa e$ and from Proposition 2 we know that bias does not affect the Agency's effort when judicial review does not. Therefore, the Legislature's choice of t_A does not impact the Agency's subsequent effort choice. Consider the

Legislature's expected utility from choosing an Agency with ideal point t_A,

$$\begin{aligned} U_L(t_A) &= -y^2, \\ &= -(x^* - \omega + \varepsilon)^2, \\ &= -(\omega + t_A - \omega + \varepsilon)^2, \\ &= -t_A^2 - \mathbb{E}[\varepsilon]^2 - V_\varepsilon(e), \\ &= -t_A^2 - V_\varepsilon(e). \end{aligned}$$

Now, recall that (1) the Agency always chooses $\hat{e}_A(\beta, \kappa)$ (defined above) and therefore generates precision $V_\varepsilon(\hat{e}_A(\beta, \kappa))$ and (2) the choice of t_A has no impact whatsoever on this effort choice. So, the Legislature's expected payoff when it chooses $t_A = t_L = 0$ is given by,

$$U_L(t_A = t_L) = -V_\varepsilon(\hat{e}_A(\beta, \kappa)),$$

while its expected utility from choosing $t_A \neq t_L = 0$ is given by,

$$U_L(t_A \neq t_L) = -t_A^2 - V_\varepsilon(\hat{e}_A(\beta, \kappa)).$$

Combining these yields the net expected payoff of choosing $t_A \neq t_L = 0$,

$$\begin{aligned} \Delta U_L(t_A \neq t_L) &= -t_A^2 - V_\varepsilon(\hat{e}_A(\beta, \kappa)) + V_\varepsilon(\hat{e}_A(\beta, \kappa)), \\ &= -t_A^2. \end{aligned}$$

Thus, the Legislature incurs a net loss proportional to the difference between its ideal point and t_A. That is, the Legislature is always better off choosing an Agency that shares its ideal point, $t_A = t_L$, when there is no ex post judicial review. ■

Proposition 4. *The Legislature never gains from setting t_A at a greater distance from its ideal point than is the ideal point of the Court (t_C).*

Proof. Without loss of generality, suppose that $t_C < 0$ and the Legislature sets $t_A^* = t_C - \delta$ where $\delta > 0$. Using the Court's incentive compatibility condition, we can see that $e^*(t_C - \delta) = e^*(t_C + \delta)$. Further, $t_C + \delta$ is closer to the Legislature's ideal point than $t_C - \delta$. Therefore, t_A^* is not a best response. ■

Proposition 5. *Suppose that the Legislature cannot obtain the best case scenario outcome given t_C in which $t_A^* = 0$. Then, the Legislature always sets t_A as extreme as possible away from the Court, in the direction of its own ideal point, conditional on the Agency continuing to invest effort that leads to the Court upholding agency-made policy.*

Proof. Assume that the Legislature always sets t_A so that the Court upholds. Further, suppose that the Legislature always sets t_A so that the Court is indifferent from upholding or overturning. Then, we have that for all t_A:

$$-(t_A - t_C)^2 - V_\varepsilon(e) = -t_C^2 - V_F.$$

That is, the Court is made indifferent between upholding and reversing by the Legislature's choice of t_A. Denote the choice of t_A that solves the Court's incentive compatibility constraint t_A^* with corresponding equilibrium effort investment $e_A^*(t_A^*)$. Substituting these solutions and rearranging we have the following,

$$V_F = (t_A^* - t_C)^2 - t_C^2 + V_\varepsilon(e_A^*(t_A^*)).$$

Any change in t_A^* (increases) offsets the corresponding change in $V_\varepsilon(e_A^*(t_A^*))$ (decreases) when this constraint holds. (Recall that $e_A(t_A)$ is increasing in t_A while $V_\varepsilon(e_A(t_A))$ is decreasing in $e_A(t_A)$.)

The Legislature's expected payoff from choosing t_A^* so that the Court upholds (as above) is given by,

$$U_L(t_A^*|r = 0) = -t_A^{*2} - V_\varepsilon(e_A^*(t_A^*)).$$

The Legislature's expected payoff from choosing a t_A^* that leads to judicial reversal is given by,

$$U_L(t_A^*|r = 1) = -V_F.$$

Combining and rearranging yields the Legislature's incentive compatibility condition to set t_A so that the Court upholds:

$$V_F = t_A^{*2} + V_\varepsilon(e_A^*(t_A^*)).$$

Provided that t_A and t_C are oppositely signed, the losses associated with increasing t_A are more than offset by the decrease in $V_\varepsilon(e_A^*(t_A^*))$ from the Legislature's perspective (that is, $(t_A^* - t_C)^2 - t_C^2 > t_A^{*2}$). This is because the Legislature is able to leverage the Court's influence on Agency effort investment. The Court's threshold increases in t_A, which means that as t_A gets increasingly further from t_C the Agency invests more effort to offset the increased distance between their ideal points. The Legislature benefits from this by receiving a disproportionate amount of variance reduction relative to the bias of the Agency from its perspective. Thus, the Legislature always sets t_A^* as extreme as possible away from the Court in the direction of its own ideal point. ■

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