Reviewing Procedure vs. Judging Substance: The Scope of Review and Agency Policymaking*

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Bureaucratic policymaking is a central feature of the modern American political system. Administrative agencies not only make policy choices, they must also implement policy effectively. Courts play an integral role in the policymaking process by monitoring, through judicial review of agency policy actions, both policymaking tasks. I analyze two variants of a model of policymaking between an agency and a court. In the first case—procedural review—the court only takes agency effort in policy implementation into account when making its review decisions. At times judicial review can induce higher effort from the agency than would otherwise be obtained. At other times judicial review can also dissuade agencies from exerting high effort. In the second case—substantive review—the court reviews both the agency's policy choice and the effort exerted in implementing policy. Surprisingly, this additional information in the review process precludes fully revealing policy choices from the agency *even when the agency is perfectly faithful*. The policy consequences of these two different types of review are analyzed with an eye toward implications for institutional design.

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1 Introduction

Most public policy in the United States is developed and implemented by the federal bureaucracy. Moreover, most public policy made by the bureaucracy is subject to judicial review. As such, courts play an integral role in the national policymaking process. The Administrative Procedures Act of 1946[1] (APA) laid the groundwork for judicial review of administrative agency actions. Under its guidance courts are directed to overturn agency actions found to be "arbitrary and capricious" (Breyer 1986). Additionally, Congress explicitly writes rules governing judicial review of agency actions into regulatory legislation that supersede the baseline set by the APA (Smith 2005).[2] By subjecting policymaking agencies to judicial scrutiny Congress can utilize administrative procedures — like judicial review provisions — to monitor agency activity (Bawn 1995; McCubbins and Schwartz 1984; McCubbins, Noll and Weingast 1987, 1989). Congress can specify rules governing citizens' abilities to challenge agency actions in court (Smith 2005, 2006), which courts have jurisdictional authority over which agency actions (Chutkow 2008), and even which agency actions are subject to, or precluded from, judicial scrutiny and what *type* of judicial review courts are directed to employ (Shipan 1997). All of these choices can either strengthen or weaken the impact of judicial review on agency policymaking (Shipan 2000). That is, Congress can specify, through the crafting of judicial review provisions, *how* courts fulfill their role in the system by specifying the scope of review across regulatory actions (Shipan 1997). The scope of review specifies what aspects of agency policymaking are to be reviewed. This paper focuses on two possible aspects of agency actions that can be specified as reviewable: procedure and substance.

Reviewing procedure entails the court observing the ex ante effort investments made by the agency that help to ensure high quality implementation or enforcement of policy whatever the substantive content. Low effort in the application of policy increases the likelihood of policy distortions

[1] 5 USC 551.

[2] Most if not all pieces of authorizing legislation contain a 'judicial review provisions' section that lays out who can challenge agency actions (or not), what actions are subject to review (or not), and the like.

even when the agency is making substantive policy choices faithfully. For example, effort could represent an agency's investment in research that allows it to better understand the contingencies of the policy environment with respect to translations of policy choices into outcomes. Alternatively, it could be simply amassing a record that illustrates that all procedures (often set by the agency itself) have been followed, which in turn improves the agency's ability to effectively put policy into practice. In contrast, substantive review includes observation of not only the agency's effort investment but also the agency's substantive policy choice. In this case courts render a judgement of the actual substantive content of policy. This relates to the general idea that courts can play an integral role in ensuring that bureaucrats are setting policy that does not subvert the wishes of their political principals, such as Congress (*e.g.,* Epstein and O'Halloran 1999). The question, then, is whether courts with the power to review and potentially invalidate administrative agency policy actions can affect agency policymaking behavior while crafting and implementing policy and, if so, when and how? I show that judicial review affects agency policymaking incentives — both policy choices and effort choices — differently depending on which policy actions the court observes.

In recent years courts reviewing administrative actions have moved more toward reviewing procedural issues than the substantive content of agency-made policy (see *e.g.,* Kagan 2001; Stephenson 2006). One reason for this shift may be that courts are at an increasingly distinct informational disadvantage relative to administrative agencies in terms of understanding what the correct technical policy choice is given the underlying, and often exceedingly complex, policy environment. In this regard courts reviewing what they know better, procedure, rather than that with which they are at a disadvantage, substance, makes intuitive sense. However, it does raise the question as to whether courts can still provide the sort of ex post ideological policy monitoring past work has suggested they might. Existing work has provided insight into how reviewing court's may impact agency effort decisions while at an informational disadvantage (Bueno de Mesquita and Stephenson 2007; Turner 2014) and the work cited above has shown that court's can help control agency's ideologically (see also *e.g.,* Huber and Shipan 2002). But the question remains: what are the differential effects of judicial review on policymaking incentives of agencies across different types of review?

Of particular interest in this paper: what are the differential effects on agency policymaking when the court reviews procedure versus judges substance?

This paper provides a theory of interactions between administrative agencies and courts. Specifically, through analysis of two variants of a formal model, I investigate how courts with the power of judicial review can influence how administrative agencies choose and implement policies. Policy is composed of both an agency policy choice and an implementation component, the precision of which is conditional on the effort investment of the agency.[3] The agency, thus, makes two choices: where to set policy relative to an underlying policy target and whether to invest high (or low) effort to improve the execution of policy in practice. Following the agency's choices a court reviews the agency's action and chooses to uphold or reverse the agency. The court, then, effectively has a veto over the agency's policy actions.[4]

In the procedural review model the court only observes the agency's effort investment. This is akin to the court reviewing procedure. Reviewing the effort level of the agency represents many situations of interest in administrative law such as how agencies are reaching permitting decisions, granting or denying government aid, or providing disaster relief to citizens. In these cases the court is not judging the technical or substantive content of the agency's policy, but rather it is reviewing the procedures through which the agency enforces the policy in practice. If the agency has not invested sufficient effort, which leads to higher likelihoods of erroneous policy applications, then the court reverses the agency. In terms of the agency's substantive policy choices, due to the informational asymmetry that exists between the agency and court, the agency always sets policy sincerely, *i.e.,*

[3]This distinction between designing and implementing policy is one that has been recognized in a growing literature examining agency capacity (*e.g.,* Carpenter 2001; Huber and McCarty 2004; Ting 2011). For instance, Carpenter (2001) distinguishes an agency's analytic and programmatic capacities. Analytic capacity denotes the agency's overall technical expertise or ability to *craft* policy competently, while programmatic capacity refers to an agency's ability to effectively *implement* policy on the ground. Another way of thinking of this distinction is the "street-level bureaucracy" point of view (Lipsky 1980).

[4]This process is related to a family of models examining agent retention (*e.g.,* Banks and Sundaram 1993, 1998; Van Weelden 2013).

at its ideal point. However, the court can impact the agency's equilibrium level of effort investment aimed at improving enforcement. The results highlight the differential effects that procedural review can have on agency effort incentives. At times, the court can induce the agency to invest high effort when it would not absent procedural review. However, at other times, the court induces the agency to shirk and make low effort investments when it would otherwise invest high effort based on its own motivations. This is a perverse incentive effect in which the court provides a sort of policy insurance for the agency thereby weakening effort incentives.

In contrast, under the substantive review model the court observes both the agency's substantive policy choice and effort level. This proxies the court judging the substantive content of policy. The increased level of information available to the court under the substantive review model may appear, quite intuitively, to be desirable over the pure procedural review model. The desirability lies in the notion that observability of more of the agency's actions while reviewing ought to be beneficial in terms of the court's ability to more effectively monitor the agency. However, the court's observation of the agency's policy choice in addition to the agency's effort choice produces perverse incentives for the agency to obfuscate with its policy choices. If the agency is averse to being overturned by the court then there is no fully sincere equilibrium in which the agency chooses policy at its ideal point, as is the case in the pure procedural review model. Instead the agency is incentivized to exaggerate how extreme the true state is to 'raise the stakes' of overturning for the court. This exaggeration makes it appear as if agency-made policy is more important than it would be if policy were set sincerely. This incentive is predicated on the agency's desire to avoid judicial reversal and the court's inability to credibly commit to upholding even a fully faithful agency when the true state is realized sufficiently closed to its ideal point.

Therein lies the fundamental trade-off between reviewing procedure and judging substance: on the one hand the court does not observe the agency's policy choice directly and thereby loses on substance proportional to the agency's bias but may induce desirable effort incentive effects through its ignorance of the policy choice. On the other hand, when the court is able to observe both the agency's policy choice and effort choice oversight provides incentives for the agency, at times, to

choose policy insincerely, thereby obfuscating with respect to how extreme agency-free outcomes (i.e., outcomes if the court overturns) really are.

Related Literature. This paper speaks to several literatures. First, the impact of moving from procedural to substantive review on agency policymaking is related to studies of government transparency and career concerns. Existing models have studied how transparency affects political policymaking incentives (Prat 2005; Fox 2007; Fox and Van Weelden 2012). These models suggest that, at times, increasing transparency of agency actions can lead to negative consequences.[5] For instance, Prat (2005), shows that when the principal observes an agent's actions directly the agent has an incentive to disregard useful private information and instead take actions that the principal ex ante expects the agent to take.[6] This distortion in incentives is based on career concerns: the agent has strong incentives to 'act as expected' to avoid being fired when her actions are observed. This is also related to studies uncovering the impact of career concerns on politicians' incentives to pander to constituents (Canes-Wrone, Herron and Shotts 2001). The desire to remain in office can overpower other considerations, which leads politicians to disregard private information and enact ill-advised policies that conform to voter preferences in order to secure reelection.

In contrast to these studies this paper does not analyze a model of career concerns in the classic sense. The agency cannot be 'fired.' However, the agency's desire to avoid reversal does have analogous effects on its policymaking incentives. This paper highlights how increasing the transparency of the agency's actions precludes any possibility of fully sincere substantive policy choices. Under procedural review the agency always sets policy sincerely, whereas allowing the court to judge the substance of the agency's policy choice provides overpowered incentives to exaggerate the utility of agency policymaking. This is not pandering in the sense that the agency chooses bad policies to appease the court. Rather it is straightforward obfuscation in which the agency sets pol-

[5]See also Holmström (1999) for an argument showing that a principal's possession of more precise information regarding agent type can reduce effort incentives and Dewatripont, Jewitt and Tirole (1999) for examples showing that agents may work harder if the principal receives a noisy signal of agent performance rather than directly observing it.

[6]See Prendergast (1993) for a paper focused on similar issues, but in a model without career concerns.

icy more extreme than it would absent transparency of this choice to signal to the court that agency policymaking is necessary. This result complements existing work by highlighting another perverse consequence of increased transparency predicated on an agency's aversion to judicial reversal: the strong incentive for agencies to exaggerate policy choices to 'prove their worth.'[7]

Closely related to this paper are studies of how judicial review affects policymaking incentives. Fox and Stephenson (2011), for instance, study a model in which judicial review can either decrease or exacerbate posturing. At times, judicial review deters politicians from taking bold, but ill-advised, actions to signal competence. At other times the court provides a "bail-out effect" in which the politician does engage in posturing precisely because she knows that the court will reverse that course of action and therefore neither the politician nor the public will have to suffer the negative consequences of the action. The politician can enjoy the electoral benefits associated with posturing without worrying about enduring the negative consequences. The results in the procedural review model are qualitatively similar with respect to how judicial review structures agency effort incentives. At times, the presence of judicial review induces the agency to invest in high effort when it would not have done so absent judicial oversight. However, at other times the presence of a reviewing court provides incentives for the agency to shirk by choosing low effort when it would have invested in high effort absent judicial review. Rather than enjoying electoral benefits while avoiding adverse policy consequences, in this paper the agency avoids paying the cost of high effort investments while accepting the adverse consequence of being overturned. This paper extends a similar bail-out effect, that follows from a different process, to a different institutional environment.

Finally, taken together, the results in this paper generate implications for literature focused on the strategic use of administrative procedures for political control of bureaucracy. As mentioned above, Congress can craft judicial review provisions while developing legislation that directs agency policymaking. In the case of procedural review, Congress may want to limit which agencies are

[7]This is also similar but distinct from results in which an agent chooses policy to signal competence. In this model the agency is perfectly competent but may not be seen as useful in terms of producing outcomes. This is conditioned by where, spatially, the true state is realized.

subject to judicial review to attempt to limit the prevalence of the possible bail-out effects it may have on agency actions. They could do this by restricting citizen suits, for example (Smith 2006). Existing work has also shown that there is a great deal of political wrangling over procedural rules like scope of review (Huber and Shipan 2002; Shipan 1997). The analysis here provides one reason why: the shift from procedural to substantive judicial review has a profound effect on the incentives that judicial oversight provides for different dimensions of agency policymaking. This paper provides a first step in understanding the potential consequences of two particular possible choices with respect to what courts are directed to review.

The remainder of the paper is organized as follows. The next section presents the general framework, the variants of which will be analyzed in the Analysis section. First, the procedural review model is analyzed with a focus on judicial review's effect on agency effort incentives. Following this, the substantive review model is analyzed with an eye toward incentives for sincere agency policymaking. The final section concludes. Proof of all formal results are in the appendix.

2 The Model

I analyze two variants of a model of policymaking between an administrative agency, A, and a reviewing court, C. In the *procedural review model* the court only observes the agency's effort investment. This information structure isolates the role that pure procedural review plays in the interaction between an agency both choosing and implementing policy and a court empowered to review and invalidate agency actions. The court does not review the policy choices of the agency but focuses its review on the process or procedures that will affect the precision of policy outcomes.

In the *substantive review model* the court observes both the policy choice of the agency as well as the effort investment.[8] This allows the court to review every action taken by the agency in the game. Therefore, the court can condition its review decisions based on both the actual substantive

[8]This review process is essentially *holistic review* in the sense that the court observes both substantive policy choice and the procedural path to implementation. I choose to label this model *substantive review* to help highlight the difference between procedural and substantive review strategies.

policy choice of the agency as well as the procedural administration of that policy as affected by the agency's effort choice. I first characterize the underlying model for both variants and then turn to the analysis of each model.

Consider a situation in which a bureaucratic agency is empowered to regulate social or economic activity in a given policy area. The agency must both choose and implement policy. The latter is affected by an ex ante effort investment, denoted by $e \in \{0,1\}$ where $e = 0$ means the agency has invested low effort and $e = 1$ means that the agency has invested high effort. Following this choice the agency observes $\omega \in \mathbb{R}$, which represents the true state of the world, and chooses $x \in \mathbb{R}$, which represents the agency's substantive policy choice. Policy, then, is generated according to the following equation,

$$y = x - \omega + \varepsilon, \tag{1}$$

where ε is an implementation shock that captures the errors in the actual enforcement or administration of policy. The likelihood of these implementation errors is minimized when the agency invests high effort ($e = 1$).

The court then reviews the agency's policy actions and chooses to uphold or reverse the agency. This judicial review decision is denoted by $r \in \{0,1\}$ where $r = 0$ if the court upholds and $r = 1$ if the court reverses. In the first variant of the model the court only observes the agency's choice of effort, high ($e = 1$) or low ($e = 0$), before making its decision to grant the agency deference. This implies a standard of review in which the court is simply concerned with the procedures or process through which the agency reached the action that the court is reviewing. The substantive choice of policy is not reviewed in this case. In the *substantive review model* the court observes, in addition to effort choice, the agency's substantive policy choice, x. Following these choices — agency effort and policy choices, and court review choice — the game ends.

Payoffs. The agency and the court's payoffs are defined as follows:

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

The parameters of the problem denoted by $\beta > 0$, $\kappa > 0$, $\pi > 0$, and $t_A \in \mathbb{R}$ are taken to be exogenous and common knowledge to all players at the beginning of the game. The court is simply concerned with policy outcomes being as close to zero as possible, *i.e.,* the court's ideal point is normalized to zero relative to the agency. Ideally the court prefers the agency to set policy exactly equal to the state of the world, ω, and invest high effort to limit the likelihood of errors in implementation.

The agency may be biased relative to the court. The level of this bias is denoted by t_A. The higher $|t_A|$, the more biased the agency is with regard to substantive policy choices relative to the court. The agency's utility also depends on the intensity of the agency's policy motivations, captured by β. Notice that β not only weights the policy component of the agency's utility relative to other components, but it also separates how intensely the agency internalizes policy losses relative to the court. The agency also pays cost κ for high effort investments and is more or less averse to being reversed by the court, captured by π. If the court upholds ($r = 0$) then the agency avoids paying the reversal cost π whereas if the court reverses ($r = 1$) the agency must bear this cost.

Finally, notice the commonalities between the two players' preferences. While the agency and the court may diverge — conditional on the value of t_A — with respect to where substantive policy should be set relative to ω, both players prefer more precise outcomes to less precise outcomes. Thus, both the agency and the court, *ceteris paribus*, prefer lower errors in the actual implementation of policy (*i.e.,* smaller realizations of ε), and, therefore, high effort policy administration is preferable for both players. However, the agency is the only player that internalizes the costs of effort required to lower the likelihood of errors in implementation (κ) so the players will often diverge in their perceptions of when high effort is beneficial.

Information and Policymaking. Both players are confronted with the uncertainties of policymaking. Specifically, the true state of the world, ω, is drawn exogenously at the beginning of the game according to cumulative distribution function F_ω, which has mean 0 and strictly positive, finite variance V_F. The realization of ω is only revealed to the agency. Following the agency's choices, the implementation shock ε is realized according to a probability distribution characterized by cumula-

tive distribution function $G_\varepsilon(e)$ with mean 0 and strictly positive, finite variance $V_\varepsilon(e)$.[9] $G_\varepsilon(e)$ is a function of agency effort such that if the agency invests high effort then the variance is strictly less than a low effort investment: $V_\varepsilon(1) < V_\varepsilon(0)$. Following this realization, the court chooses to either uphold $r = 0$ or reverse the agency $r = 1$. The information available to the court when making this decision differs depending on the variant of the model. In the *procedural review model* the court only observes the agency's effort choice e, while in the *substantive review model* the court observes the agency's substantive policy choice x in addition to e. If the court upholds then final policy is y generated according to equation 1 and if the court reverses then final policy is $y = -\omega$. This proxies the fact that if the agency is reversed then outcomes are realized based on the actions of private individuals or firms absent agency intervention. At this point the game ends, the final policy outcome is set, and payoffs are realized.

Strategies and Equilibrium Concept. I utilize perfect Bayesian equilibrium (PBE) as my equilibrium concept. A strategy for the agency consists of a probability of choosing $e = 1$, denoted by s_A^e, and a mapping from $\mathbb{R}$ into a probability distribution over possible policy choices, $x \in \mathbb{R}$. This probability distribution is conditional on any realization of ω and is denoted by s_A^x. In the *procedural review model* the court's review strategy is a mapping from the set of agency effort levels and potential policy outcomes into a probability of reversal, is denoted by $s_C(e)$, and holds for any agency effort level $e \in \{0,1\}$ and potential policy outcome $y \in \mathbb{R}$. In the *substantive review model* the court's strategy is a mapping from the set of agency effort levels *and* agency policy choices $x \in \mathbb{R}$ into a probability of reversal, which is denoted by $s_C(e,x)$ and holds for any set of agency effort level and policy choice. The court's beliefs about ω and ε are represented by a probability distribution over $\mathbb{R}^2$ characterized by cumulative distribution function μ_C. A PBE is a profile of strategies and beliefs $\rho = (s_A^e, s_A^x, s_C, \mu_C)$ such that both players are maximizing their expected payoff and, when

[9] Assuming that the mean of $G_\varepsilon(e)$ is 0 is without loss of generality as this simply ensures that any errors in administering policy are centered around the agency's substantive policy choice x, and $G_\varepsilon(e)$ is common knowledge and the agency can set any policy at no cost.

applicable, beliefs are consistent with Bayes's rule.[10]

3 Procedural Review

In the *procedural review model* the court observes only the effort investment of the agency, e. I proceed by working backward, first considering the equilibrium judicial review strategy of the court. I then analyze the optimal policy and effort choices of the agency, respectively.

Equilibrium Judicial Review. The court faces the decision of whether to uphold or reverse policy generated by the agency's choices. Recall that the court does not observe y or x in this variant of the model. Thus, in equilibrium, the court employs an optimal review strategy conditional on its beliefs about the agency's policy choice and the relative uncertainty associated with upholding policy by either a high- or low-effort agency and reversing policy. If the court reverses the agency then the final policy outcome is $-\omega$. Thus, the court's subjective expected payoff when it reverses the agency, conditional on its beliefs, is given by,[11]

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

The court can expect to receive payoffs equal to the variance of F_ω.

Alternatively, the court can uphold the agency. If the court upholds the agency then its subjective expected payoff is given by,

$$\begin{aligned} U_C(r=0;\rho_{-C}) &= -V_\varepsilon(e) - \mathbb{E}_{\mu_C}[x-\omega]^2 - V_{\mu_C}[x-\omega], \\ &= -V_\varepsilon(e) - \mathbb{E}_{\mu_C}[x-\omega]^2 - V_{s_A^x}[x-\omega]. \end{aligned}$$

In this case the court internalizes the policy losses from the divergence between the agency's policy choice x and the state of the world ω, the variance of this policy choice (which, given correct beliefs

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

[11] Throughout, I employ the notation, U_i, to denote the expected utility of the players ($i \in \{A,C\}$).

about s_A^{x*} reduces to 0), and the uncertainty associated with the realization of the implementation shock ε given the agency's choice of effort e.

The court will uphold the agency only if $U_C(r=0;\rho_{-C}) \geq U_C(r=1;\rho_{-C})$. Moreover, the next section verifies that under procedural review the agency always sets policy at its ideal point: $x^* = \omega + t_A$. Thus, the court's expected payoff for upholding the agency can be simplified such that it satisfies,

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

Since the court upholds the agency if $U_C(r=0;\rho_{-C}) \geq U_C(r=1;\rho_{-C})$ and reverses otherwise the court's optimal judicial review strategy is given by the following best response function,

$$s_C^*(e) = \begin{cases} \text{uphold } (r=0) & \text{if } V_\varepsilon(e) + t_A^2 \leq V_F, \\ \text{reverse } (r=1) & \text{otherwise.} \end{cases} \tag{2}$$

Similar to a standard of judicial review of agency actions suggested in extant literature (Stephenson and Vermeule 2009), the court's equilibrium review strategy illustrates the court's desire to ensure that the agency is implementing policy as effectively as possible. The court upholds the agency's decision if the expected quality of regulated outcomes, $V_\varepsilon(e)$, given the agency's effort choice e and the policy losses generated by the distance between the agency's biased policy choice relative to ω are better than the imprecision of unregulated outcomes, V_F, which obtain if the court chooses to reverse. The court is essentially employing a cut-off rule common to models of agent retention (*e.g.,* Banks and Sundaram 1998; Van Weelden 2013). Notice that the bias of the agency relative to the court, t_A, increases the stringency of the court's review standard, *i.e.,* decreasing $V_\varepsilon(e)$ becomes more necessary to be upheld, *ceteris paribus*, as t_A increases. Substantively, when the court only reviews the procedures through which the agency generated regulated outcomes the court is forced to trade off relatively biased substantive policy choices for increased precision in

the administration of policy.

Notice, however, that if the agency is too biased then it will never be upheld. Specifically, if the agency's bias is larger than the increase in policy precision even when the agency invests high effort, *i.e.,* $|t_A| > \sqrt{V_F - V_\varepsilon(1)}$, then the agency will be reversed regardless of its effort investment. Similarly, if the imprecision of regulated agency-made policy is higher than that of unregulated agency-free policy even when the agency is unbiased and has invested high effort, *i.e.,* $V_\varepsilon(1) > V_F$, then the court will always reverse the agency. When the court always reverses the agency regardless of effort choice I refer to this as *perfectly skeptical* review. Conversely, if the agency is not too biased and regulated outcomes are more precise than unregulated, agency-free outcomes even when the agency invests low effort, *i.e.,* $V_\varepsilon(0) + t_A^2 \leq V_F$, then the court will uphold the agency independent of effort choice. When the court always upholds the agency regardless of effort choice I refer to this as *perfectly deferential* review. Finally, if the agency's effort choice is dispositive with respect to judicial deference then the court will uphold the agency if and only if the agency invested high effort, *i.e.,* $V_\varepsilon(1) + t_A^2 \leq V_F < V_\varepsilon(0) + t_A^2$. In this case I refer to the standard of review as *conditional-deference* review.

Equilibrium Agency Policy Choice. As noted in the previous section, the agency always sets policy at its ideal point, $\omega + t_A$,

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

To verify that this is a best response for the agency note that it wants to minimize the distance between its policy choice x and its ideal point conditional on a realized state of the world ω.[12] Further, since the court does not observe x or y directly in the procedural review process the court's review behavior can not be conditioned on x. This fact coupled with $G_\varepsilon(e)$ having expectation zero implies that the agency has a weakly dominant strategy of choosing $x = \omega + t_A$. This policy choice holds regardless of agency effort investment. Simply, because the court can not condition its review decision on the agency's policy choice and the agency's policy and effort choices are separable, the

[12] e is a sunk cost at this stage of the game.

agency is always (weakly) better off setting policy at its ideal point so that it incurs no spatial losses based on its choice of x.

Equilibrium Agency Effort Choice. This section analyzes the agency's effort choice. While the agency's policy choice x does not depend on its choice of e, the court's review strategy can depend on e. Recall there are three environments in which the agency makes effort decisions: *perfectly skeptical* review, *perfectly deferential* review, and *conditional-deference* review.

First, consider the environment in which the court employs *perfectly skeptical* review. In this case the latent agency-free policy environment is always better than one in which the agency has made policy. The agency will never invest high effort since the court will always overturn. As verification of this point consider the agency's net expected payoff for high effort investment:

$$\Delta U_A(e|r=1) = -\kappa.$$

Thus, if the agency invests high effort the only payoff the agency can expect is a loss incurred from the cost of that effort. There are no policy gains since the outcome when the court always reverses is the same regardless of effort investment. Therefore, intuitively, the agency never invests high effort when the facing a perfectly skeptical court.

Consider now the environment in which the court is perfectly deferential. In this case any agency-made policy — with either high or low effort — is more effective than the latent agency-free policy environment: $V_\varepsilon(1)+t_A^2 < V_\varepsilon(0)+t_A^2 < V_F$. The agency's net payoff from choosing to invest high effort rather than low effort when the court will always uphold the agency is given by,

$$\Delta U_A(e|r=0) = \beta(V_\varepsilon(0) - V_\varepsilon(1)) - \kappa.$$

This net payoff is positive if and only if the policy improvement realized from high effort investment, scaled by the agency's level of policy motivation, exceeds the cost of high effort, *i.e.,* $\beta(V_\varepsilon(0) - V_\varepsilon(1)) > \kappa$. Thus, the agency will, at times, invest high effort even when the court will always uphold it. Notice, though, that judicial review plays no role in the incentives for the agency to do so.

The agency invests high effort if its policy motivations (β) are sufficiently high and the improvement in policy precision is sufficiently valuable ($V_\varepsilon(0) - V_\varepsilon(1)$ is sufficiently large) relative to the cost of realizing those improvements (κ). This implies that the agency invests high effort only if it is sufficiently implicitly motivated to produce high quality outcomes (Feldman 1989; Prendergast 2007).

Now consider the final, and most interesting, policy environment in which agency-made policy is more effective than latent agency-free outcomes if and only if the agency invests high effort: $V_\varepsilon(1) + t_A^2 < V_F < V_\varepsilon(0) + t_A^2$. In this case the agency's effort choice is dispositive with respect to judicial deference and accordingly the court applies *conditional-deference* review. The agency's net expected payoff from high effort investment, relative to low effort, in this environment is given by,

$$\Delta U_A(e) = \beta(V_F - V_\varepsilon(1) + t_A^2) - \kappa + \pi.$$

The agency, when facing a *conditional-deference* court, invests high effort only if the gain in increased policy precision is sufficiently large relative to the latent precision of agency-free outcomes and the agency's policy bias is sufficiently large relative to the marginal cost of effort given avoidance of being reversed by the court. Re-arranging this net expected payoff yields the incentive compatibility constraint that must be satisfied for the agency to invest high effort given conditional-deference review:

$$\beta(V_F - V_\varepsilon(1) + t_A^2) \geq \kappa - \pi. \tag{3}$$

Equation 3 says that the policy precision improvement from high effort ($V_F - V_\varepsilon(1)$) and the policy rents extracted by the agency (t_A), as weighted by the agency's policy motivations (β), must outweigh the marginal cost of high effort given the agency's aversion to being reversed ($\kappa - \pi$) for it to be an optimal course of action. Notice, in contrast to the perfectly deferential review environment, that the presence of a reviewing court can help to strengthen the incentives for the agency to make high effort investments. Specifically, the larger the value of π relative to κ the lower the threshold for high effort to be incentive compatible for the agency when facing conditional-deference review.

Characterization of agency effort in these three environments completes the description of the equilibrium to the *procedural review model*, which is formalized in the following proposition.

Proposition 1. *When judicial review considers only the agency's effort choices the agency:*

1. *Always sets policy sincerely (at its ideal point):* $s_A^{x*}(\omega) = \omega + t_A$,
2. *never invests high effort when facing a perfectly skeptical court,*
3. *invests high effort only if it would have absent judicial review given its own implicit motivations when facing a perfectly deferential court (i.e.,* $\beta(V_F - V_\varepsilon(1) + t_A^2) \geq \kappa$*), and*
4. *invests high effort if the policy improvements generated from that effort and the policy rents extracted through biasing policy choices exceeds the marginal cost of high effort given the agency's aversion to being reversed when facing a conditional-deference court (i.e.,* $\beta(V_F - V_\varepsilon(1) + t_A^2) \geq \kappa - \pi$*).*

Thus far, I have shown that judicial review *can* impact the agency's effort choice. This is the case when the court employs conditional-deference review. However, procedural review can have differential effects on agency effort incentives dependent on the underlying policy environment. The next section characterizes these different effects procedural review can have on agency effort incentives.

3.1 Procedural Review, Conditional-Deference, and Agency Effort Incentives

In this section I show when procedural judicial review of agency policy actions can induce desirable effort behavior and, conversely, when it deters the agency from investing in high effort. These effects obtain when the agency's effort choice affects the review decision of the court, *i.e.,* when it is a conditional-deference court. Recall that in this environment, $V_\varepsilon(1) + t_A^2 \leq V_F < V_\varepsilon(0) + t_A^2$. Therefore, the court upholds the agency if and only if the agency invests high effort. The previous section showed that the agency's net expected payoff from high effort investment when facing a conditional-deference court is given by:

$$\Delta U_A(e = 1|\text{procedural review}) = \beta(V_F - V_\varepsilon(1) + t_A^2) - \kappa + \pi.$$

This implies that when there is a court present reviewing the agency the agency will invest high effort if and only if the following inequality is satisfied,

$$\beta(V_F - V_\varepsilon(1) + t_A^2) \geq \kappa - \pi. \tag{4}$$

Now consider the agency's expected payoff for high effort investment when there is no review of its actions, which implies that it will never be reversed,

$$U_A(e = 1|r = 0) = -\beta V_\varepsilon(1) - \kappa.$$

Similarly, the agency's expected payoff from low effort investment when there is no court present to review its actions is given by,

$$U_A(e = 0|r = 0) = -\beta V_\varepsilon(0).$$

Combining these expected payoffs yields the agency's net expected payoff for high effort investments when there is no procedural judicial review of its actions, which is given by.

$$\Delta U_A(e = 1|\text{no procedural review}) = -\beta(V_\varepsilon(0) - V_\varepsilon(1)) - \kappa.$$

The agency will invest high effort when there is no court to review its policy actions if and only if,

$$\beta(V_\varepsilon(0) - V_\varepsilon(1)) \geq \kappa. \tag{5}$$

Equation 5 says that the agency will invest high effort when there is no review if the policy improvements of doing so relative to low effort outcomes outweigh the cost of that effort investment. In contrast to equation 4 agency-free outcomes are not possible since the court is not present to reverse agency actions. When there is procedural review of agency actions the agency also must take into account the potential spatial losses it would incur if overturned as well as its aversion to being reversed. Moreover, policy precision improvements in the shadow of review are between high effort

policy and the reversion associated with being reversed. These expected payoffs, conditional on whether there is a court engaged in procedural review of agency policy actions, combine to illustrate when the presence of judicial review provides incentives for high effort investment when the agency would have invested low effort absent judicial oversight and when the presence of procedural review deters the agency from high effort investments even though it would have chosen high effort if left to its own motivations. These possibilities are characterized in the following result.

Proposition 2. *When the court is engaged in procedural review, the agency's effort choices are affected as follows:*

1. *If* $\Delta U_A(e=1|\textit{procedural review}) \geq 0$ *and* $\Delta U_A(e=1|\textit{no procedural review}) < 0$ *the presence of procedural judicial review induces the agency to invest high effort when it would have invested low effort absent review, and,*

2. *if* $\Delta U_A(e=1|\textit{procedural review}) < 0$ *and* $\Delta U_A(e=1|\textit{no procedural review}) \geq 0$ *the presence of procedural judicial review induces the agency to invest low effort even though it would have invested high effort absent review.*

Proposition 2 characterizes when the presence of procedural judicial review strengthens or weakens agency effort incentives. In the first case the agency would have invested low effort were it not being monitored. This illustrates the desirability of a system of procedural judicial review. Without that review outcomes would be less precise in this instance. The second case, however, shows that procedural judicial review can also introduce perverse effort incentives by deterring the agency from making high effort investments when it would have if it were not being reviewed. In this sense, judicial review can provide a bail-out effect for the agency (see Bueno de Mesquita and Stephenson 2007; Turner 2014, for examples of a similar effect on agency effort incentives).[13]

This perverse effect obtains because rather than the agency choosing between the policy precision improvement from high and low effort agency-made policy ($V_\varepsilon(0) - V_\varepsilon(1)$) it is concerned

[13]In particular, (Turner 2014), using the same general framework, shows that judicial review has this impact on agency effort incentives even when the agency is perfectly faithful. See also Fox and Stephenson (2011).

with the policy precision improvement between high effort agency-made and agency-free policy ($V_F - V_\varepsilon(1)$) and its bias, t_A. Thus, at times, given $V_\varepsilon(1) + t_A^2 \leq V_F < V_\varepsilon(0) + t_A^2$, the court provides a sort of policy insurance that allows the agency to shirk and choose low effort but still remain better off, due to circumventing effort costs, since unregulated agency-free precision is not too low relative to low effort agency-made policy. Thus, the presence of procedural judicial review can certainly produce desirable agency effort incentives, but it can also create perverse incentives that deter the agency from investing high effort *even when it would have were it not being reviewed*.

4 Substantive Review

In this section I analyze the substantive review model. In this case the court makes it review decisions with an additional piece of information revealed to it: the agency's policy choice x. I show that the introduction of this extra piece of information precludes the possibility of a fully sincere (or revealing, in terms of policy choice) equilibrium *even when the agency and the court share the same ideal point*.

Equilibrium Judicial Review. When the court engages in substantive review it observes both the agency's policy choice and effort investment decision. With this added information the court's review strategy changes slightly. In particular, the agency's policy choice reveals information about ω to the court. This additional information leads to the following subjective expected payoffs for the court conditional on overturning the agency,

$$U_C(r=1;\rho_{-C}) \quad = \quad -\left[\mathbb{E}[\omega|x^*]^2 + V_{s_A^x}[\omega|x^*]\right],$$

where x^* is the agency's equilibrium policy choice. The court expects to lose utility based on the expected distance between ω and it's ideal point (0). Similarly, the subjective expected payoff for the court conditional on upholding the agency is given by,

$$U_C(r=0;\rho_{-C}) \quad = \quad -\left[\mathbb{E}[x^* - \omega|x^*]^2 + V_{s_A^x}[x^* - \omega|x^*] + V_\varepsilon(e)\right].$$

In this case, the court expects to lose utility based on the expected distance between the agency's policy choice and it's ideal point (0) as well as the potential imprecision of policy conditional on agency effort investment. Combining these expected payoffs yields the court's net expected payoff for upholding the agency,

$$\Delta U_C(r=0;\rho_{-C}) = -\mathbb{E}[x^* - \omega|x^*]^2 - V_{s_A^x}[x^* - \omega|x^*] - V_\varepsilon(e) + \mathbb{E}[\omega|x^*]^2 + V_{s_A^x}[\omega|x^*].$$

Thus, the court upholds the agency if and only if $\Delta U_C(r=0;\rho_{-C}) \geq 0$. This leads to the following equilibrium judicial review strategy for the court when engaged in substantive review,

$$s_C^*(x,e) = \begin{cases} \text{uphold } (r=0) & \text{if } \mathbb{E}[x^* - \omega|x^*]^2 + V_{s_A^x}[x^* - \omega|x^*] + V_\varepsilon(e) \leq \mathbb{E}[\omega|x^*]^2 + V_{s_A^x}[\omega|x^*], \\ \text{reverse } (r=1) & \text{otherwise.} \end{cases} \tag{6}$$

Intuitively, the court upholds the agency if and only if the court is (weakly) better off relative to what it must accept if it overturns the agency. Compared to the pure procedural review model the court's equilibrium review strategy is qualitatively similar. The main difference between the two information structures is that the court may not be able to believe that the agency has set policy at its ideal point with certainty, as was the case in the procedural review model. That is, if the agency is not setting policy sincerely then the choice of x is informative with respect to ω, but not fully revealing. This raises the question of whether or not a fully sincere equilibrium exists when the court observes both the agency's policy and effort choices.

Definition 1. *An equilibrium to the substantive review model is* ***fully sincere*** *if and only if the agency sets policy at its ideal point:* $s_A^{x*}(\omega) = \omega + t_A$.

If the agency sets policy at its ideal point then the court learns the true state with certainty.

Suppose that this is the case. Then the court's substantive judicial review strategy satisfies,

$$\begin{aligned}
\mathbb{E}[x^* - \omega | x^*]^2 &= t_A^2, \\
V_{s_A^x}[x^* - \omega | x^*] &= 0, \\
\mathbb{E}[\omega | x^*]^2 &= \omega^2, \\
V_{s_A^x}[\omega | x^*] &= 0.
\end{aligned}$$

Since the agency has chosen policy sincerely and the court observes that choice directly, the court is able to infer ω perfectly. This further reduces the court's equilibrium substantive review strategy under sincere agency policymaking to,

$$s_C^*(x^*, e | x^* \text{ sincere}) = \begin{cases} \text{uphold } (r=0) & \text{if } t_A^2 + V_\varepsilon(e) \leq \omega^2, \\ \text{reverse } (r=1) & \text{otherwise.} \end{cases} \tag{7}$$

Thus, the court will uphold the agency if and only if the policy losses that would come from the bias of the agency and the imprecision of agency-made policy is (weakly) less than the policy losses from reversing and allowing the true state of the world to obtain unobstructed. With the court's substantive judicial review strategy characterized supposing a fully sincere equilibrium, the next section analyzes whether the agency has incentive to choose policy sincerely.

Agency Policy Choice. As noted in the previous section, in this section I am primarily concerned with whether a fully sincere policymaking equilibrium exists in light of the additional information utilized by the court during judicial review. As such, the natural place to begin the analysis is one in which the agency does set policy sincerely (at its ideal point). The agency's (posited) equilibrium policy choice is then,

$$s_A^x(\omega, sincere) = x^* = \omega + t_A.$$

Recall that when the agency sets policy sincerely the court will uphold the agency if and only if $t_A^2 + V_\varepsilon(e) \leq \omega^2$. Clearly, there will be realizations of the state of the world that are sufficiently

extreme that this inequality will hold in many parameter regions. When ω is realized so that this is true the agency will simply choose policy sincerely and be upheld by the court. However, suppose ω is reasonably moderate (close to 0). In this case it may be unlikely that the court's incentive compatibility constraint is met. To illustrate this possibility, suppose the agency's ideal point is equal to the court's, $t_A = 0$, so that both the agency and the court desire the same policy outcomes. Then the relevant condition for the court to uphold reduces even further:

$$r = 0 \iff \sqrt{V_\varepsilon(e)} \leq |\omega|. \tag{8}$$

In this case — when $t_A = 0$ and policy setting is sincere — the court upholds the agency if and only if the standard deviation of implemented agency-made policy is (weakly) less than the realized true state of the world, ω.[14] Again, there will be realizations of ω sufficiently extreme that the agency will still set policy sincerely due to satisfaction of the constraint. However, consider the case in which ω is sufficiently moderate (near 0) such that, given the agency's effort choice, $|\omega| < \sqrt{V_\varepsilon(e)}$. In this case, the agency will be reversed by the court with certainty, *even though the agency shares the court's ideal point and has set policy at that ideal point faithfully*.[15] Moreover, this possibility *always* exists given that $V_\varepsilon(e) > 0$. That is, there always exists a sufficiently moderate realization of ω that would violate equation 8.

Having established that there will always be a region — in fact, $[0, \sqrt{V_\varepsilon(e)})$ — where if ω is realized in that interval then the agency, if setting policy sincerely, will be overturned by the court with certainty the following question arises.[16] Would an agency in this situation, given the

[14]Note that I will focus on cases in which $\omega \geq 0$ so we need only focus on the non-negative portion of the policy space. This is simply to aid in clearer exposition and has no bearing on the qualitative nature of any results.

[15]To belabor the point a bit further, consider the most desirable context in which the agency has chosen $e = 1$, shares the same ideal point with the court, set policy exactly at their shared ideal point, and ω is still sufficiently low to violate the court's IC for upholding. This possibility *always* exists since $V_\varepsilon(e) > 0, e \in \{0,1\}$. In this case, even though the agency has done everything it could to satisfy the court — invested high effort and set policy at the court's ideal point — the court still cannot uphold the agency once it has learned ω from the agency's sincere policy choice.

[16]Note that I am still treating the agency as having the same ideal point as the court, $t_A = 0$, but the calculations

court's posited equilibrium strategy in Equation 7, deviate from its sincere policymaking strategy? To provide an answer to this question consider the agency's expected payoff for continuing to set policy sincerely given that it will be overturned by the court (i.e., $\sqrt{V_\varepsilon(e)} > |\omega|$),

$$U_A(\text{sincere}|r=1) = -\beta\omega^2 - \pi.$$

If the agency sets policy sincerely and the court overturns it then it loses utility equal to the policy losses due to the distance between its ideal point and the true state as well as having to suffer the punishment associated with being reversed (π). Now consider the situation in which the agency deviates from sincerity and obfuscates by choosing policy at the court's indifference point to uphold. Call this point $\underline{x} = \sqrt{V_\varepsilon(e)}$. In this case its expected payoff is given by,

$$U_A(\text{obfuscate}|r=0) = -\beta((\underline{x}-\omega)^2 + V_\varepsilon(e)).$$

Combining these expected payoffs gives the agency's incentive compatibility constraint to obfuscate (deviate from sincere policy setting),

$$\text{obfuscate} \iff \beta(\underline{x}-\omega)^2 + \beta V_\varepsilon(e) - \beta\omega^2 \leq \pi.$$

Now consider an ω realized at a point less than $\underline{x}$ by $\delta > 0$ so that $\omega = \underline{x} - \delta$. Plugging this expression in for ω yields,

$$\beta(\underline{x} - (\underline{x}-\delta))^2 + \beta V_\varepsilon(e) - \beta(\underline{x}-\delta)^2 \leq \pi.$$

Rearranging and simplifying by substituting $\sqrt{V_\varepsilon(e)}$ back in for $\underline{x}$ yields,

$$\delta \leq \frac{\pi}{2\beta V_\varepsilon(e)}, \tag{9}$$

which, so long as $\pi > 0$ and $\beta > 0$, holds for an open set of sufficiently small values of $\delta > 0$. That

extend straightforwardly to the case of a non-zero t_A.

is, since the RHS of equation 9 is strictly positive a δ always exists such that $\delta \leq \frac{\pi}{2\beta V_\varepsilon(e)}$. Thus, there always exists a realization of $|\omega| < \sqrt{V_\varepsilon(e)}$ such that the agency will deviate from sincere policymaking. This implies a fully sincere equilibrium never exists in the substantive review model if $\pi > 0$, which is formalized in the following result.

Proposition 3. *For any positive level of agency aversion to being overturned by the court, $\pi > 0$, there does not exist a fully sincere equilibrium of the substantive review model.*

Proposition 3 formalizes the fact that when the agency's policy choice is observable during judicial review there cannot be a situation in which the agency is *not* incentivized to obfuscate with its policy choices for some realizations of ω. That is, there will always be a case in which the agency would rather choose policy insincerely to be upheld by the court than choose policy sincerely and be overturned for sure. Intuitively, this is due to the fact that if the true state of the underlying policy environment is relatively close to where the court would like it to be then the possibility of policy implementation errors inherent in agency-made policy precludes the court from being able to credibly commit to upholding the agency. Additionally, note that this dynamic obtains in the substantive review model, and not the procedural review model, precisely because the agency's sincere policy choice eliminates any informational asymmetry that previously existed between the agency and the court, i.e., the court learns ω with certainty. While Proposition 3 shows that there is always an interval such that if ω is realized within it the agency will deviate from the sincere policymaking strategy. However, it does not provide a lower bound on this interval in the sense that there are cases in which ω is sufficiently moderate and the insincere policy the agency would have to choose to obfuscate, and be upheld, is sufficiently far from the agency's ideal point that the agency would prefer to continue to make policy sincerely *even while it knows that when it does so it will be overturned by the court with certainty*. The next result characterizes when the agency would engage in this type of policymaking behavior.[17]

Proposition 4. *Suppose $\omega = 0$. Then the agency will choose policy sincerely despite knowing it*

[17] I will focus on the case when $\omega = 0$ for ease of exposition though the result would extend naturally to $\omega \neq 0$ cases.

will be overturned with certainty by the court if and only if the precision of agency-made policy is too low relative to the ratio of its aversion to being overturned and policy motivations: $x = \omega \iff V_\varepsilon(e) > \frac{\pi}{2\beta}$.

Reversing the incentive compatibility constraint for the agency to obfuscate rather than set policy sincerely from above, the agency will continue to set policy sincerely knowing it will be overturned if the following holds:

$$\text{sincerity} \iff \beta(\underline{x} - \omega)^2 + \beta V_\varepsilon(e) - \beta\omega^2 > \pi.$$

To ease exposition suppose $\omega = 0$ so that the true state of the world is located exactly at the court and the agency's ideal point. Plugging this into the expression for the agency to set policy sincerely above yields,

$$\beta(\underline{x})^2 + \beta V_\varepsilon(e) > \pi.$$

Since $\underline{x} = \sqrt{V_\varepsilon(e)}$ this expression simplifies to,

$$V_\varepsilon(e) > \frac{\pi}{2\beta}.$$

Thus, when $\omega = 0$ the agency will continue to set policy sincerely if and only if the precision of agency-made policy is too low ($V_\varepsilon(e)$ too high) relative the ratio of its aversion to being overturned and twice its policy motivations. The likelihood that this condition is met is decreasing in the agency's aversion to being overturned (π) and increasing in its implicit policy motivations (β). As the punishment for the agency being overturned increases relative to its policy motivations it is more likely to find it profitable to obfuscate with its policy choice rather than continue to set policy sincerely. However, as its policy motivations increase the agency becomes more likely to set policy sincerely even when it knows it will be overturned. This dynamic is driven by the agency's dislike for policy losses. Deviating from sincerity means that the agency has to bear the policy losses equal to the distance between the policy it sets insincerely and its ideal point. So, as the agency cares more

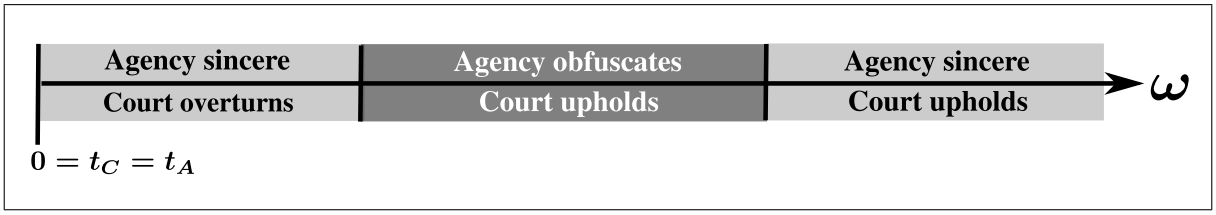

Figure 1: An Example of Fully Sincere Equilibrium Unraveling.

about policy relative to the cost of being reversed by the court it is less likely to bear these policy losses to be upheld.

Having shown that there does not exist a fully sincere equilibrium to the substantive review model and that there are instances in which the agency would prefer to set policy sincerely even though it will be overturned by the court with certainty we know that the fully sincere equilibrium breaks down due to an interval. Restricting our attention to the non-negatives, this interval ranges from either 0 or the point at which the agency is no longer willing to bear the policy losses it incurs from setting policy insincerely to be upheld to the upper bound past which ω is extreme enough that the court will always uphold the agency for setting policy sincerely. Figure 1 displays this intuition graphically. If ω is realized between the agency's ideal point and the upper bound of the first region the policy losses associated with obfuscation are too great and the agency prefers to choose policy sincerely even though it knows it will be overturned by the court. If ω is realized in the middle, darkly shaded, region the agency is willing to obfuscate with its policy choices to be upheld. This is because the agency's aversion to being overturned is sufficiently high relative the the policy losses it will incur from choosing policy away from ω. The agency, in this case, obfuscates by exaggerating the extremity of ω, which in turn leads the court to uphold. This is because the more extreme is ω, the more important it is from the court's point of view to allow the agency to make policy rather than reverse and have the bear the consequences associated with the reversion. Thus, the agency benefits by obfuscating to exaggerate the necessity of agency-made policy relative to the alternative. Finally, once a realization of ω is sufficiently extreme the agency chooses policy sincerely since the court will uphold the agency given a sincere policy choice.

In this section I showed that there can not exist a fully sincere equilibrium when the court is engaged in substantive review. This is in contrast to the procedural review model in which the agency always sets policy sincerely. This juxtaposition, which occurs simply from the inclusion of an extra piece of information for the court, suggests that observability of agency policy tasks, particularly in a multi-task environment, can have profound consequences for the incentives of policymaking agencies. This has implications for Congressional usage of administrative procedures, discussed briefly in the next section.

5 Discussion and Conclusion

In this paper I analyze two models of judicial review of policymaking agency actions. The first is one of pure procedural review in which the court only observes the effort investment made by the agency. This is akin to the court simply making sure that the agency is following the procedures in place it is required to, that it is applying policy equally across those they effect, etc. Under procedural review the court can, at times, induce the agency to make high effort investments when it would have invested low effort absent review. However, at other times, the court induces the agency to invest low effort when it would have made high effort investments absent judicial review through a perverse bail-out effect.

In the second model — the substantive review model — the court observes both the agency's substantive policy choice and effort investment. In this model the incentives for agencies to set policy sincerely are shattered and there can not exist a stable situation in which the agency will always choose policy sincerely. This suggests that the increased observability of agency actions in judicial review can have profound consequences for the way that agencies choose to make policy.

These results, taken together, have implications for Congressional design of judicial review provisions. Dependent on the type of agency to whom the legislature is allocating policymaking authority — in particular, agencies that are either more or less averse to being reversed by courts or agencies that are more or less implicitly policy motivated — the legislature may want to either shield technical or substantive policy choices of the agency from review to provide incentives for the

agency to choose policy sincerely. It can do this, for example, by empowering or restricting citizen suit provisions (Smith 2005, 2006) or otherwise limiting what groups can and cannot challenge what agency actions. But, in this instance it may be the case that the court will, at times, deter the agency from investing sufficient effort. In response to this possibility, the legislature may choose to subject the substance of agency policy to judicial review to attempt to circumvent the bail-out effect but in so doing must bear the perverse obfuscation effects that are created from doing so by expanding or contracting the scope of review (Shipan 1997). Defining the scope of review based on what types of agency actions are reviewable, therefore, comes with fundamental trade-offs with respect to agency policymaking incentives.

These trade-offs can have profound implications citizen and/or political principal welfare. While this paper simply sought to analyze what happens when court's are asked to review more in terms of agency policy actions, a thorough welfare analysis of when one system of review dominates the other is necessary. This will require constructing the full mixed-strategy (or semi-separating) equilibrium to the substantive review model that fully characterizes when the agency, and how large the region is in which it does, will be tempted to obfuscate in its policy choices. Following that construction, a more comprehensive analysis of welfare may be possible. Though this paper raises, perhaps more, questions regarding when and how different types of judicial review of agency policy actions are desirable and there is much more work to be done, it is clear from the results presented here that there is indeed a nontrivial difference in the way agency policymaking incentives are structured conditional on whether the court is reviewing procedure or judging substance.

6 Appendix

Procedural Review Proofs

First, I prove the following lemmas that compose the result embodied in Proposition 1.

Lemma 1. *Under the procedural review model, the agency always sets policy sincerely:* $s_A^{x*}(\omega) = \omega + t_A$.

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. ■

Lemma 2. *The agency never invests high effort when facing a perfectly skeptical court.*

Proof. When the court is perfectly skeptical it always overturns the agency. Thus, the agency's expected payoff from investing low effort, $e = 0$, given that it will be overturned is given by,

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

The agency's expected payoff from investing high effort, $e = 1$, given it will be overturned is similarly given by,

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

Combining these gives the agency's net expected payoff for investing high effort given it will be overturned,

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

Thus, if the agency invests high effort when facing a perfectly skeptical court it is strictly worse off since it must bear the additional effort cost. Therefore, the agency never invests high effort when facing a perfectly skeptical court. ■

Lemma 3. *The agency invests high effort when facing a perfectly deferential court only if it would have absent any judicial review.*

Proof. A perfectly deferential court always upholds the agency. Thus, the agency's expected payoff for investing low effort, $e = 0$, given it will be upheld is given by,

$$U_A(e = 0|r = 0) = -\beta V_\varepsilon(0).$$

The agency's expected payoff for investing high effort, $e = 1$, given it will be upheld is given by,

$$U_A(e = 1|r = 0) = -\beta V_\varepsilon(1) - \kappa.$$

Combining these expected payoffs yields the agency's net expected payoff for investing high effort given it will be upheld,

$$\begin{aligned} \Delta U_A(e = 1|r = 0) &= -\beta V_\varepsilon(1) - \kappa - \beta V_\varepsilon(0), \\ &= \beta(V_\varepsilon(0) - V_\varepsilon(1)) - \kappa. \end{aligned}$$

Rearranging this net expected payoff yields the agency's incentive compatibility constraint for investing high effort given it will always be upheld,

$$\beta(V_\varepsilon(0) - V_\varepsilon(1)) \geq \kappa.$$

If the increased policy precision from investing high (relative to low) effort outweighs the cost of that effort then the agency invests high effort when facing a perfectly deferential court. Given that there is no π in the agency's incentive compatibility constraint for investing high effort, the court has no impact on this choice. Therefore, when the reviewing court is perfectly deferential the agency invests high effort only if it would have absent any judicial review, *i.e.,* review has no impact on agency effort choice. ■

Lemma 4. *The agency invests high effort when facing a conditional-deference court if and only if the policy benefits from doing so outweigh the marginal effort costs relative to benefits of not being overturned,* i.e., $e = 1 \iff \beta(t_A^2 + V_F - V_\varepsilon(1)) \geq \kappa - \pi$.

Proof. The court will uphold the agency if and only if the agency invests high effort. Then, the agency's expected payoff from investing low effort, $e = 0$, given that it will be overturned is given by,

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

The agency's expected payoff from investing high effort, $e = 1$, given that it will lead to its being upheld is given by,

$$U_A(e = 1|r = 0) = -\beta V_\varepsilon(1) - \kappa.$$

Combining these yields the agency's net expected payoff for investing high effort given it will be upheld following this choice,

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

Rearranging this net expected payoff yields the agency's incentive compatibility constraint for investing high effort when facing a conditional-deference court,

$$\beta(t_A^2 + V_F - V_\varepsilon(1)) \geq \kappa - \pi,$$

as stated in the Lemma. ■

Proposition 1 *When judicial review considers only the agency's effort choices the agency:*

1. *Always sets policy sincerely (at its ideal point): $s_A^{x*}(\omega) = \omega + t_A$,*
2. *never invests high effort if it will be reversed for sure,*
3. *invests high effort only if it would have absent judicial review given its own implicit motivations when facing a perfectly deferential court (i.e., $\beta(V_F - V_\varepsilon(1) + t_A^2) \geq \kappa$), and*
4. *invests high effort if the policy improvements generated from investing high effort and the policy rents extracted through biasing policy choices exceeds the marginal cost of investing high effort given the agency's aversion to being reversed when facing a conditional-deference court (i.e., $\beta(V_F - V_\varepsilon(1) + t_A^2) \geq \kappa - \pi$).*

Proof. The proposition follows from a straightforward combination of Lemmas 1, 2, 3, and 4. ■

Proposition 2 *When the court is engaged in procedural review, the agency's effort choices are affected as follows:*

1. *If* $\Delta U_A(e=1|$*procedural review*$) \geq 0$ *and* $U_A(e=1|$*no procedural review*$) < 0$ *the presence of procedural judicial review induces the agency to invest high effort when it would have invested low effort absent that review, and,*

2. *if* $\Delta U_A(e=1|$*procedural review*$) < 0$ *and* $U_A(e=1|$*no procedural review*$) \geq 0$ *the presence of procedural judicial review induces the agency to invest low effort even though it would have invested high effort absent procedural review.*

Proof. Follows directly from combining in-text calculations of $\Delta U_A(e=1|\text{procedural review})$ and $U_A(e=1|\text{no procedural review})$. ■

Substantive Review Proofs

Lemma 5. *The court's optimal judicial review strategy in the substantive review model, assuming a sincere agency policy strategy, is given by the following best response function,*

$$s_C^*(x,e) = \begin{cases} \textit{uphold } (r=0) & \textit{if } \sqrt{V_\varepsilon(e)} \leq \omega, \\ \textit{overturn } (r=1) & \textit{otherwise}. \end{cases}$$

Proof. Assume that the agency sets policy sincerely, *i.e.,* the agency chooses policy at its ideal point. Further, assume that $t_A = 0$ so that the court and the agency have the same ideal point. Then the court's subjective expected payoff for upholding the agency is given by,

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

The court's subjective expected payoff from overturning the agency is given by,

$$U_C(r=1;\rho_{-C}) = -\omega^2,$$

since the court learns ω due to the sincere policy choice of the agency. This gives the following incentive compatibility condition for the court to uphold the agency,

$$\sqrt{V_\varepsilon(e)} \leq \omega, \qquad \text{(Court-IC Sub. Rvw.)}$$

which yields the best response function in the Lemma. ■

Proposition 3 *For any positive level of agency aversion to being overturned by the court, $\pi > 0$, there does not exist a fully sincere equilibrium when the court observes both agency policy and effort choices.*

Proof. From Lemma 5 the court will uphold the agency, given sincere policymaking, if and only if $\sqrt{V_\varepsilon(e)} \leq |\omega|$. Thus, if the agency chooses $x = \sqrt{V_\varepsilon(e)}$, given that the court believes this choice is sincere and therefore equal to ω, the court is indifferent between upholding and overturning the agency. Call this policy choice at which the court is indifferent $\underline{x}$.

Suppose that $|\omega| < \sqrt{V_\varepsilon(e)}$ so that sincere policymaking leads to the agency being overturned with certainty. The choice for the agency, then, is to either set policy sincerely and be overturned for sure or deviate from sincere policymaking and obfuscate with its policy choice by choosing $\underline{x}$ and being upheld by the court. Then the agency considers the following expected payoffs for sincerity and obfuscation, respectively.

If the agency is sincere and overturned then its expected payoff is,

$$-\beta\omega^2 - \pi.$$

If the agency deviates from sincerity and obfuscates by choosing policy at the court's indifference point to uphold, $\underline{x}$, then its expected payoff is,

$$-\beta((\underline{x}-\omega)^2 + V_\varepsilon(e)).$$

Combining these gives the agency's incentive compatibility constraint to obfuscate (deviate from

sincere policy setting),

$$\text{obfuscate} \iff \beta(\underline{x}-\omega)^2+\beta V_\varepsilon(e)-\beta\omega^2 \leq \pi.$$

Rearranging this incentive compatibility condition for obfuscating in terms of π yields,

$$\beta(\underline{x}-\omega)^2+\beta V_\varepsilon(e)-\beta\omega^2 \leq \pi.$$

Now consider an ω realized at a point less than $\underline{x}$ by $\delta>0$ so that $\omega=\underline{x}-\delta$. Plugging this expression in for ω yields,

$$\beta(\underline{x}-(\underline{x}-\delta))^2+\beta V_\varepsilon(e)-\beta(\underline{x}-\delta)^2 \leq \pi.$$

Rearranging and simplifying by substituting $\sqrt{V_\varepsilon(e)}$ back in for $\underline{x}$ yields,

$$\begin{aligned}
\delta^2+V_\varepsilon(e)-(V_\varepsilon(e)-\delta)^2 &\leq \frac{\pi}{\delta}, \\
\delta^2+V_\varepsilon(e)-(\sqrt{V_\varepsilon(e)})^2+2V_\varepsilon(e)\delta-\delta^2 &\leq \frac{\pi}{\beta}, \\
\delta &\leq \frac{\pi}{2\beta V_\varepsilon(e)}, \qquad (10)
\end{aligned}$$

which, so long as $\pi>0$ and $\beta>0$, holds for an open set of sufficiently small values of $\delta>0$. That is, since the RHS of Equation 9 is strictly positive when $\pi>0$, a δ always exists such that $\delta \leq \frac{\pi}{2\beta V_\varepsilon(e)}$. Thus, there always exists a realization of $|\omega|<\sqrt{V_\varepsilon(e)}$ such that the agency will deviate from sincere policymaking. This implies a fully sincere equilibrium never exists in the substantive review model if $\pi>0$, as stated in the proposition. ■

Proposition 4 *Suppose $\omega=0$. Then the agency will choose policy sincerely despite knowing it will be overturned with certainty by the court if and only if the precision of agency-made policy is too low relative to half its aversion to being overturned: $x=\omega \iff \beta V_\varepsilon(e)>\frac{\pi}{2}$.*

Proof. Recall from the proof of Proposition 3 that the agency's incentive compatibility constraint

for obfuscating is:

$$\text{obfuscate} \iff \beta(\underline{x}-\omega)^2+\beta V_\varepsilon(e)-\beta\omega^2 \leq \pi.$$

This implies the following incentive compatibility constraint for the agency continuing to set policy sincerely despite knowing that it will be overturned:

$$\text{sincerity} \iff \beta(\underline{x}-\omega)^2+\beta V_\varepsilon(e)-\beta\omega^2 > \pi.$$

Now suppose $\omega = 0$ so that the true state of the world is located exactly at the court and the agency's ideal point. Plugging this into the agency's IC yields,

$$\beta(\underline{x})^2+\beta V_\varepsilon(e) > \pi.$$

Plugging $\underline{x} = \sqrt{V_\varepsilon(e)}$ back in and simplifying yields,

$$\begin{aligned} 2\beta V_\varepsilon(e) &> \pi, \\ \beta V_\varepsilon(e) &> \frac{\pi}{2}. \end{aligned}$$

Thus, when $\omega = 0$ the agency will continue to set policy sincerely if and only if its incentive compatibility constraint for doing so is met, *i.e.,* if and only if the precision of agency-made policy is too low relative to half its aversion to being overturned, as stated in the proposition. ■

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