Information & Contestation:  
A Formal Model of Notice and Comment *

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Abstract

We develop a model of “notice and comment” rulemaking, focusing on strategic issues facing agencies and interest groups. We analyze the joint effects of participatory rulemaking and judicial review on the incentives for agencies and groups to produce and reveal information during rulemaking. We show that judicial review can produce informed policymaking, but that participatory rulemaking can bias agency policymaking in favor of groups with access to the rulemaking process.

In addition to illustrating interesting incentives about agency incentives to acquire information, the results speak to doctrines of judicial review of agency policymaking and highlight a social optimality argument for an inherently political role of the judiciary based upon upstream incentives for information acquisition in policymaking. Accordingly, socially optimal judicial review may be “legally irrational” and, contrary to standard doctrines of judicial review in the U.S., judicial deference to rules with thin records can be optimal.

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Modern government is bureaucratic government. But bureaucrats face only indirect and limited forms of popular accountability, and yet they also lack the independence of the judiciary. Thus their discretion over public policy has the potential to threaten cherished principles of both representative government and due process. Essentially, bureaucrats are not political enough to fall directly under conventional sanctions of democratic accountability, but are too political to guarantee observance of due process on their own.

As the reach and importance of bureaucratic government has grown in the United States, Congress and courts have responded with legislation and doctrines of judicial review to constrain bureaucratic discretion. The Administrative Procedure Act of 1946 is a watershed of such legislation at the federal level. The APA defined presumptively binding procedural requirements that federal agencies must satisfy when taking several distinct kinds of policy action. One of the hallmarks of the APA (and its successors and amendments) is the process it specifies for agencies when they engage in rulemaking, or issue regulations pursuant to legislation that stipulate what the effects and requirements of the law actually are.

Of several types of rulemaking, the most common is informal, or “notice and comment,” rulemaking. Notice and comment rulemaking involves internal analysis by the agency culminating in the proposal (i.e., notice) of a policy (i.e., rule) by the agency for public comment. Following a fixed period of (receiving) comment, the agency then responds to those comments and promulgates a final, possibly revised rule. Groups or individuals affected by these rules can, of course, petition federal courts for their review. Judicial review of agency rules includes analysis of the agency’s findings of fact, i.e. the agency’s assessment of information — including information from public comment — that putatively justifies the particular content of the rule on which the agency settled. If reviewing courts find the agency’s finding of fact deficient in light of court-defined standards, they can void the rule, essentially vetoing it.

Rulemaking, as the articulation of policies having general application and force of

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1Formal rulemaking under the APA requires a more elaborate and cumbersome process for the agency to build a record of its proceedings, and is rarely used.

2Congress and the President have, of course, layered other requirements on agencies before a rule can be proposed or take effect, e.g. review by the Office of Information and Regulatory Affairs under Executive Order 12,291 and its successors, and review by Congress under the Congressional Review Act of 1996. In this paper we more or less ignore these channels of review and focus on the “standard” notice and comment process, though one could interpret the “court” in our model as some other external reviewer with veto power over agency regulations.
law, is a quasi-legislative activity. Legal scholars have traditionally interpreted the notice and comment process as one which requires an agency to institute a stylized version of legislative proceedings, including prior solicitation of input from affected parties, before determining a final policy. As for judicial review, the traditional interpretation idealizes courts as a backstop to prevent agency decisions that are arbitrary, capricious, unsubstantiated, or otherwise in violation of due process.

Social scientists in the “structure and process” school (McCubbins, Noll and Weingast (1987), McCubbins, Noll and Weingast (1989)) have pioneered an alternative, political rationale for these procedures, arguing that they ensure that bureaucratic decisions respond to the preferences and priorities of legislators — even after those legislators fade from power. In essence, this school of thought holds that administrative procedures are devices for “making the deal stick” after it is struck in Congress and handed over to bureaucrats for implementation. Notice and comment is an effective means for ensuring that agencies respond to input but legislatively favored interest groups; this process as well as court review are simple devices for Congress to “outsource” oversight over agency actions.

In this paper we take a different tack, focusing on strategic issues facing the agency and interest groups. We analyze the effects of notice and comment proceedings, combined with judicial review, on incentives for an agency to “produce” information in the first instance, and subsequently on incentives for interest groups to reveal their information. Specifically, we posit a formal model of notice and comment rulemaking in which an agency investigates relevant facts and proposes a rule tailored to its findings. Following this an interested group independently investigates the relevant facts as well, and may or may not reveal its information. A reviewing court can then either uphold or reverse the agency’s proposal. To focus on the incentive effects of the notice and comment process itself, we model the agency as indifferent about policy as such (so it has no intrinsic motivation to exert investigative effort), and assume that both the agency and group incur costs from investigating that increase with the thoroughness of the investigation. However, the agency dislikes court reversal, which opens a channel for court review doctrines to affect agency actions.

We model an idealized court that wishes to maximize social welfare by making agency policy respond to some state of the world (e.g., the siting of a freeway by the Department

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3See e.g. Aman and Mayton (2001) for an actual textbook expositing the “textbook” interpretation.
4See section 1 for substantive motivation of our payoff assumptions.
of Transportation should depend on land costs, engineering challenges of alternative sites, and social disruptions caused by paving over public spaces). Absent notice and comment (and assuming the cost of court reversal is not “too high”), the agency would not investigate the state of the world at all. Instead it would propose the policy option most likely to maximize social welfare given (commonly held) prior beliefs about the state of the world, and the court, lacking any independent information, would uphold the agency’s action. In this way, the agency obtains the best possible outcome for itself by incurring no investigation cost or judicial reversal.

However, with notice and comment, the agency must consider that, if it promulgates a rule without strong evidence in support of its decision, an interest group might adduce information that shows the agency’s rule to be clearly in error. This would lead to sure judicial reversal, which in turn creates an incentive for the agency to investigate the state of the world. In this respect, notice and comment procedures lead to a clear increase in the information produced in support of agency actions — not just because groups add information that would otherwise be ignored, but because group participation followed by judicial review gives agencies incentives to investigate the state of the world in the first place.

Despite this incentive, an agency investigation might not turn up clear evidence justifying its decision (or any particular decision), in which case the interest group has an incentive to investigate on its own and present its evidence on the record. (In our model, if the agency’s investigation does turn up hard evidence, it is decisive in defense of its chosen rule). However, unlike the agency, which has every incentive faithfully to report any and all hard information, the interest group only reports information supporting its preferred policy choice; if the group reports evidence contraindicating its preferred policy choice, it is sure to fare poorly in judicial proceedings.

This bias of the group in submitting information on the record implies that, while agency and group investigations are both socially valuable, agency investigations are more valuable. Furthermore, the group’s bias implies that the court should interpret a “thin” evidentiary record differently, depending on rule the agency promulgated. If the agency’s rule is “anti-group” and the record of evidence is thin, the court can infer that the interest group definitely does not have hard information about the state of the world: if it did have information, it would report it on the record to undermine the agency’s rule. But if the agency’s rule is “pro-group” and the record of evidence is thin, it is possible that the group obtained information contraindicating this policy but declined to include
it in the record.

The model sharpens this intuition into some of our major results. Though the model reveals interesting incentives about agency incentives to acquire information, in our view the most important results deal with the doctrines of judicial review of agency records. This is because the results speak to the inherently political role of the judiciary, when upstream incentives for information acquisition are considered. First, it may be socially optimal for reviewing courts to uphold agency regulations even if the evidentiary basis for them is very thin. Second, it may be socially optimal for judicial review to be legally “irrational” in the sense that reviewing courts should not treat all records of a given evidentiary depth or quality in the same way. Instead, in some cases, optimal judicial review requires courts to consider the politics of the policymaking environment — the distribution of benefits and costs in society resulting from agency regulations. Third, therefore, optimal judicial review can demand that courts be political actors — even if the court seeks only the Herculean pursuit of social welfare. Finally, the model also implies that if optimal judicial review is legally “rational” in the sense of disposing of all decisions supported by records of a given quality in the same way, then it can also induce agency capture in the sense that agencies presume “pro-group” policies should be promulgated in the absence of hard evidence contraindicating them.

These specific findings rest heavily on the texture of notice and comment rulemaking reflected in our model. Thus the model shows the importance of considering the regulatory process in relatively granular detail, as few other models in the literature that consider it at this level of specificity. In addition, the results are important beyond the regulatory context as well, because they speak to the origins of politicization in the judiciary, as well as to the sources of interest group privilege in politics.

5In this respect, our model is substantively most closely related to Stephenson (2006) and Stephenson (2008). In these papers Stephenson explores the effect of various postures of judicial review on exertion of investigatory effort by agencies. The most important difference between these models and ours is that Stephenson considers only an agency and court in his models, so does not capture the incentive effects of notice and comment proceedings, or the leverage that notice and comment offers to reviewing courts in extracting effort from agencies and interest groups. In addition, there are substantive differences in the tenor of the results. In Stephenson (2006), “hard look” judicial review elicits agency effort that signals the benefits of the policy to the agency — which are assumed to be correlated with its benefits to the court. In Stephenson (2008), court preferences over various judicial review postures hinge on a dynamic consistency problem for the reviewing court. By sidestepping this issue we uncover an even more fundamental, entirely ex ante tension in optimal judicial review.
1 The Model

Players and Structure of Play. We model a simplified version of the notice and comment process as a sequential game of asymmetric information in which players may invest costly effort in uncovering verifiable and welfare-dispositive information.\textsuperscript{6,7,8} There are three players, an agency $A$, group $G$, and court $C$.\textsuperscript{9} There are three possible policies $x \in \{0, 1, \varphi\}$, where $x = \varphi$ is a status quo policy and $x = 0$ and 1 denote alternatives. Additionally, there is a state of nature $\omega \in \Omega = \{0, 1\}$. The common prior belief is that $\omega = 1$ with probability $p \in (0, 1)$.

A statute requires $A$ to choose either policy $x = 0$ or $x = 1$. This reflects a type of regulatory legislation in which an agency is charged with gathering information and issuing a regulation from some set of options, but regulatory inaction is not permitted. For instance, under specific conditions the Clean Air Act Amendments of 1977 required the Environmental Protection Agency to identify a “best available control technology” for reducing air pollutants from electric utilities, and lack of pollution control was not among its options.

Given this requirement, notice and comment rulemaking proceeds as follows. First $A$ chooses how much effort to exert in investigating the state, $e_A \in [0, 1]$. With probability $e_A$, $A$ (privately) learns the true state $\omega$; with probability $1 - e_A$, the agency (privately) learns nothing about the true state and retains its prior beliefs. We denote the signal observed by $A$ by $s_A \in \{\phi, \omega\}$, where $s_A = \phi$ represents the uninformative signal.

After observing $s_A$, $A$ promulgates a policy $x \in \{0, 1\}$ and chooses a message $m_A$ from

\textsuperscript{6}The approach is very similar to that utilized recently by Warren (2012) and Ashworth and Shotts (2011), both of whom are interested in questions more closely tied to electoral accountability, but whose insights seem portable to the realm of administrative policymaking (i.e., bureaucratic accountability) as well. A key difference between our model and theirs is the motivation of the auditors/challengers/regulated interests — auditors in general (including journalists, bureaucrats, and political opposition parties) are the focus in Warren’s work, while Ashworth & Shotts focus on the special and important case of electoral challengers as a specially-motivated auditor. The analogue in this paper are regulated interests.

\textsuperscript{7}The information environment and court’s problem in our model also bear some similarity to Dewatripont and Tirole (1999). The biggest differences from our model turn on agent preferences and the involvement of multiple agents obtaining information on one issue.

\textsuperscript{8}The model also relates to Prendergast (2007). The main differences are in the preference conflict between bureaucrats and the “principal” (court, in our case), and that we consider an endogenous probability that the overseer obtains independent information about the state of the world.

\textsuperscript{9}In some cases it would be more realistic to consider multiple groups on alternative sides of an issue, e.g. as in the case of the Forest Service or the Environmental Protection Agency. Yet for many classical areas of regulation, a single dominant group or collection of interests is typical—as one would expect with concentrated incentives focused on industry but diffuse effects on the public interest.
$M(s_A) = \{\phi, s_A\}$. Note that this choice is trivial if $s_A = \phi$. It merely allows $A$ to either reveal or conceal its signal. Thus, we are assuming that $A$’s investigation uncovers “hard” evidence, which may be excluded from the justification that $A$ builds, but must be reported truthfully if $A$ includes it. Substantively, if the policy choice is about, say, passive restraint systems in cars, the agency can decline to include evidence on some type of system if it wishes, but it cannot claim that a system traps passengers in their seats in the event of an accident if in fact it does not.

Next $G$ observes $x$ and $m_A$, and chooses its own investigative effort level $e_G \in [0, 1]$. With probability $e_G$, the group (privately) observes $s_G = \omega$ and, with probability $1 - e_G$, the group (privately) observes an uninformative signal, $s_G = \phi$. (Note that, if $m_A \neq \phi$, the group has no need to exert investigative effort.) After observing $s_G$, the group chooses a message, $m_G \in \{\phi, s_G\}$, which represents its input into the notice and comment process. As with $m_A$, this is “hard” information that may either be concealed or reported truthfully.

Finally, $C$ observes $(x, m_A, m_G)$ and decides whether to reverse or uphold $x$, which determines the final policy, denoted by $y \in \{0, 1\}$. If $C$ reverses $x$, denoted by $r = 1$, then the final policy outcome is $y = \varphi$. Otherwise, $C$ upholds the policy, denoted by $r = 0$, and the final policy outcome is $y = x$. Substantively, this reflects a judicial review process in which the court examines the record and justification for $A$’s policy choice assembled during the rulemaking process. The court then either upholds agency action, or determines that agency action does not satisfy some doctrinal standard of justification and remands the case to the agency for further analysis — during which time the status quo policy remains in effect. The court does not itself choose policy, however.

**Payoffs: Formal Structure.** Here we define payoffs for players $A$, $G$, and $C$, as well as Society $S$ — a non-strategic actor that serves as a normative benchmark. We offer a substantive rationale for our assumptions after laying out the formalities.

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10 While $A$ does not have a choice in whether to promulgate, incorporating such discretion is a natural next step. We conjecture that it will be an important one, as it will reduce the effects of court reversal on $A$’s incentive to exert effort.

11 This construction is adopted for symmetry: given the preferences, $A$ never has a strict incentive in equilibrium to conceal $s_A \neq \phi$.

12 Note that this baseline model does not allow $A$ to revise its policy choice $x$ after observing any reported information by $G$. We extend the baseline model to consider revision by $A$ in section 3. Overall, while the size of the parameter regions where key results hold will change, the basic incentives identified in the model do not.
All actors’ policy utilities are normalized so that the status quo guarantees a payoff of zero in all states of nature. Policy payoffs $v_i(x, \omega)$ for $i \in \{A, G, C, S\}$ are as follows:

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<th>Agency</th>
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<td>$x = 1$</td>
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Additionally, $G$ and $A$ both have non-policy components of their utility. First, both $G$ and $A$ incur costs to investigate $\omega$; these costs are $\frac{\kappa}{2}e_A^2$ for $A$ and $\frac{c}{2}e_G^2$ for $G$. Second, if $C$ reverses $A$’s policy ($r = 1$), $A$ incurs a cost $k$.

Players’ overall utilities are as follows:

$$u_A(y, e_A, r) = v_A(y, \omega) - \frac{\kappa}{2}e_A^2 - kr,$$
$$u_G(y, e_G) = v_G(y, \omega) - \frac{c}{2}e_G^2,$$
$$u_C(y, r) = v_C(y, \omega),$$

The parameters $\beta, \kappa, c,$ and $k$ are strictly positive, exogenous, and common knowledge.

We impose the following (related) restrictions liberally in the analysis. Collectively, they imply that various first order conditions are “well behaved,” as we will note when the assumptions are invoked. The first ones relate to lower bounds on $G$’s investigation cost parameter $c$. It might seem “cleaner” simply to invoke the greatest lower bound in one assumption rather than list multiple separate ones, but each restriction binds at a different point. To identify the role that each restriction plays in the analysis, we keep them separate.

**Assumption 1 (Costly Group Investigative Efforts)** $c > p$.

**Assumption 2 (Interior Optimal Group Effort)** $c > \beta p$.

**Assumption 3 (Agency Choice of $x_\phi = 0$)** $c > (1 + \beta)p^2$.

**Assumption 4 (Interior Optimal Agency Effort)** $k < \kappa$.

Assumption 4 means that $A$ does not fear reversal sufficiently to discover $\omega$ with certainty. This restriction not only obviates some algebraic difficulties with comparative
statics analysis, it also ensures that there will always be a positive probability that $G$’s investigative efforts might be dispositive—if $A$ always discovers $\omega$, then in this setting, one *ex ante* optimal judicial review strategy will involve overturning $A$’s recommendation whenever it is accompanied by a thin agency-provided record and, accordingly, there will never be any decisions overturned on the equilibrium path.

**Payoffs: Substantive Motivation.** Social welfare is maximized when the policy matches the state, and $S$ is presumed to weakly prefer action by the Agency. Note that the prior $p$ that $\omega = 1$ represents the *ex ante* probability of alignment of the interests of the Group and society.

For its part, $C$ is a cipher. Since it is indifferent about its actions in all histories of play, $C$ can credibly commit to follow any strategy that maximizes *ex ante* social welfare. We will assume that it does so. Therefore, the analysis will identify doctrines of judicial review that are maximally effective at eliciting informed policymaking through the notice and comment process. We take this approach because it is normatively the most interesting in light of actual doctrines of judicial review. In addition, in light of our results, this assumption is more interesting than the assumption that judges are ideological preference maximizers like any other political actor. One may also note that this mythical “Herculean judge” posture is not far from one mere mortals have assumed in seminal cases on judicial review such as *Citizens to Preserve Overton Park, Inc. v. Volpe* (1971). In that case, the Secretary of Transportation chose to site a freeway through a public park. Citizens to Preserve Overton

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13 This simply reflects the assumption that expertise is desirable. It is of course possible that this is not the case (*e.g.*, expertise may not be particularly important for choosing the “right” policy on issues of fundamental community values), but then there are at best tenuous grounds for including bureaucrats in policymaking.

14 This assumption leads to the interesting implication that society’s optimal scheme involves committing to a weakly dominated strategy (striking down regulations) in pursuit of higher effort levels by the Agency.
Park challenged this action. One may suppose from the group’s name that it was not particularly concerned with agency cost or engineering data showing that this site was in some sense socially beneficial; the group wanted the freeway sited elsewhere regardless of the state of these facts.

For another example, suppose that $A$ can promulgate one of two safety standards for an industry ($x = 0$ or $x = 1$), and the safety effects on consumers depend on $\omega$. One standard ($x = 1$) has the side effect of raising barriers to entry in the industry (e.g., high fixed cost technologies that require access to imperfect capital markets), which raises profits for incumbent firms; the other standard ($x = 0$) is costly to implement but does not raise barriers to entry, and so is costly to incumbent firms. The group $G$ represents incumbent firms that care about profits but not consumer safety.

The agency $A$ is an archetype of Niskanen (1971) bureaucracy: status-conscious (so dislikes reversals) and cost-minimizing (so, for a given budget constraint, budget maximizing), but indifferent about policy as such. We analyze this case not for its verisimilitude (see Gailmard and Patty (2007) on bureaucratic policy motivations), but because $A$ has no intrinsic motivation to learn $\omega$ so the incentive effects of notice and comment are most interesting and normatively important.

2 Analysis

As a preliminary to further analysis, note that $C$’s optimal behavior involves overturning any regulation that is inconsistent with a hard signal, and upholding any regulation that is consistent with a hard signal.\(^{15}\) In other words, $C$ overturns agency decisions that are “clearly in error” (cf. Citizens to Preserve Overton Park, Inc. v. Volpe (1971)). $C$ thus engages in some degree of substantive (not merely procedural) review in the optimal mechanism, in the sense that it examines the linkage between the sum total of evidence and $A$’s policy choice. Furthermore, we will restrict attention to equilibria in which the Agency always reveals its signal when it obtains one.\(^{16}\) Thus, the only question as to $C$’s behavior is what it does when it has no information about the policy (i.e., neither $A$ nor $G$ sends an informative signal). In this case, $C$ may condition only on the policy choice itself (i.e., $x = 0$ or $x = 1$). The probability that $C$ overturns ($r = 1$) regulation $x$ in the

\(^{15}\)We will presume that $C$ does this off the equilibrium path as well.

\(^{16}\)In this setting—where the Agency is presumed to be indifferent about the policy outcome and incur no direct cost from revealing its signal—this is not a restrictive assumption, but obviously would be quite strong in other preference environments.
absence of information is denoted by $\rho_x \in [0,1]$.

A pair $(\rho_0, \rho_1)$ defines a doctrine of judicial review. For instance, the doctrine that all policies supported by “thin” records are rejected in court is represented by $\rho_0 = \rho_1 = 1$. Note that if $\rho_0 \neq \rho_1$, then the Court is necessarily conditioning its review posture on the policy choice of the Agency, in addition to the quality of its evidentiary record.

The subsequent analysis first considers optimal Group behavior (in the sense of perfect Bayesian equilibrium (PBE)) conditional on triples $(x, \rho_0, \rho_1)$. Then it considers optimal Agency behavior (also in the sense of PBE) in two phases: first, $A$’s investigation effort conditional on $(x, \rho_0, \rho_1)$, and second, $A$’s choice of policy $x$ conditional on the judicial review doctrine. The optimal investigation effort of $A$ and $G$ are heavily influenced by $A$’s choice of $x$. In turn, judicial review doctrines affect investigation effort in part through their effect on $x$.

Thus, the key to the analysis is $A$’s incentive to choose $x = 0$ or 1, for a given doctrine of judicial review. Restricting attention to $C$’s pure strategies, so that $\rho_0 \in \{0,1\}$ and $\rho_1 \in \{0,1\}$, there are eight unique triples $(x, \rho_0, \rho_1)$, but not all eight are incentive compatible. The centerpiece of the analysis focuses on the subset of these triples that are incentive compatible; most of our interesting conclusions are derived by examining this set. Of course, it is also possible to explicitly derive conditions under which each incentive compatible triple is socially optimal, but doing so is not especially interesting because the constraints on $C$ due to strategic considerations by $A$ and $G$ are already apparent in the incentive compatibility analysis. Thus results on the optimality of different doctrines of review in different regions of the parameter space are confined to the appendix.

### 2.1 Group Behavior

It is useful to note at this point that, if $A$ reveals a hard signal of $m_A = \omega$, $G$’s dominant action is to set $e_G = 0$, as $C$’s subsequent behavior is independent of $G$’s message $m_G$. Accordingly, we ignore these subgames when discussing the Group’s incentives. The only subgames in which the Group has a nontrivial choice about $e_G$ are those in which $A$ has revealed no signal (i.e., $m_A = \phi$).

Accordingly, conditional on $m_A = \phi$, $x \in \{0,1\}$, and $\rho$, $G$’s (conditional) expected

\footnote{We comment further on the legitimacy of this restriction below.}

\footnote{Of course, these subgames are relevant and given full consideration when we turn our attention to the incentives of the Agency and the Court.}
payoff from effort $e_G$ is

$$U_G(x, e_G) = \begin{cases} 
(r_0 - 1) \left(\frac{(1 - p) + p(1 - e_G)}{2} - \frac{\epsilon_G^2}{2}\right) & \text{if } x = 0, \\
\epsilon_G \beta + \left(\frac{(1 - p) + (1 - e_G)p - (1 - \rho_1)\beta - \frac{\epsilon_G^2}{2}\right) & \text{if } x = 1.
\end{cases}$$

(1)

The first order conditions for the Group imply the following effort levels:

$$e^*_G(x) = \begin{cases} 
\min[p(1 - \rho_0)/c, 1] & \text{if } x = 0, \\
\min[p\beta \rho_1/c, 1] & \text{if } x = 1.
\end{cases}$$

(2)

Assumption 2 obviates the need to carry around the "min" operator.

The Group’s effort is maximized when $\rho_0^{G^*} = 0$ and $\rho_1^{G^*} = 1$: the Court is deferential to an “anti-group” policy in the absence of contradictory information, and skeptical of a “pro-group” policy in the absence of confirmatory information. The first part means that $x = 0$ will stay in force, even without good justification from $A$, unless $G$ adduces evidence to undermine it. This in turn gives $G$ strong incentives to uncover any available information. The second part means that $x = 1$ will not stay in force, absent good justification from $A$, unless $G$ adduces information justifying it. This gives $G$ strong incentives to investigate.

With an understanding of the Group’s strategic calculus in hand, we now turn to the Agency’s incentives and the effect of judicial review on the Agency’s investigative efforts.

### 2.2 Agency Behavior: Investigation

The Agency’s choice of policy is simple when it receives an informative signal (i.e., $s_A \neq \phi$): set $x = s_A$ and reveal its signal. When the Agency is not informed, its incentives are more complicated and we defer detailed consideration of this until Section 2.3. For the time being we simply denote $A$’s policy choice when uninformed by $x_\phi \in \{0, 1\}$.\(^\text{19}\)

Given this, we can identify $A$’s optimal level of investigative effort.

\(^{19}\)A’s choice of $x_\phi$ is crucial to both $A$ — in spite of our assumption that $A$ is indifferent about the match between the policy chosen and the underlying state of nature—and the society. This is because of $G$’s bias: $G$ will not submit evidence to overturn $x = 1$ and will not submit evidence to uphold $x = 0$. Thus, $x_\phi$ will have welfare effects above and beyond that captured by the distribution of $\omega$ (i.e., $p$).
A’s expected payoff from \((x_\phi, e_A)\) is given by the following:

\[
U_A(x_\phi, e_A) = \begin{cases} 
(e_A - 1)(e_G^*(0)p + (1 - e_G^*(0) + e_G^*(0)(1 - p))\rho_0)k - \frac{\kappa}{2}e_A^2 & \text{if } x_\phi = 0, \\
(e_A - 1)(1 - e_G^*(1) + e_G^*(1)(1 - p))\rho_1k - \frac{\kappa}{2}e_A^2 & \text{if } x_\phi = 1.
\end{cases}
\]

This yields the following equation for the equilibrium effort levels:

\[
e^*_A(x_\phi) = \begin{cases} 
\min[0, \max[1, (e_G^*(0)p + (1 - pe_G^*(0))\rho_0)k/\kappa]] & \text{if } x_\phi = 0, \\
\min[0, \max[1, (1 - pe_G^*(1))\rho_1k/\kappa]] & \text{if } x_\phi = 1,
\end{cases}
\]

which, once we substitute equation (2) and impose Assumptions 2 and 4, reduces to\(^{20}\)

\[
e^*_A(x) = \begin{cases} 
(k(p^2(1 - \rho_0)^2 + c\rho_0))/(ck) & \text{if } x = 0, \\
(c - p^2\beta\rho_1)\rho_1k/(ck) & \text{if } x = 1.
\end{cases} \tag{3}
\]

For \(x = 0\), equation 3 is strictly convex for \(p \in (0, 1)\). Accordingly, the value of \(\rho_0\) that maximizes Agency effort is a corner solution, satisfying \(\rho_0^{A*} \in \{0, 1\}\). The first order conditions for minimization imply that Agency effort is minimized at \(\rho_0 = 1 - \frac{c}{2p^2}\), so that, leveraging the symmetry of parabolas, it follows that

\[
\rho_0^{A*} = \begin{cases} 
1 & \text{if } p^2 < c, \\
0 & \text{if } p^2 > c.
\end{cases}
\]

Since we have assumed that \(0 < p < c\) (Assumption 1), it follows that \(\rho_0^{A*} = 1\). When contrasted with the optimal review strategy in terms of maximizing the Group’s efforts \((\rho_0^{G*} = 0)\), this encapsulates the tension faced by the Court – the Agency will exert more effort conditional on promulgation of \(x = 0\) when \(s_A = \phi\) if the Court is more likely to reverse \(x = 0\) in the absence of confirmatory information, but the Group’s incentives are opposed to this, as it will exert more effort if the Court is more likely to uphold \(x = 0\) in the absence of contradictory information.

For \(x = 1\), equation 3 is strictly concave for \(p \in (0, 1)\). The value of \(\rho_1\) that maximizes Agency effort is

\[
\rho_1^{A*} = \frac{c}{2\beta p^2}.
\]

\(^{20}\)Assumptions 2 and 4 imply that the max and min operators are unnecessary.
In spite of this interior solution for maximizing Agency effort, we will see that maximizing social welfare generally involves a deterministic judicial review strategy, where the Court either upholds all policies in the absence of dispositive information or reverses all such policies.

2.3 Agency Behavior: Policy Choice

Thus far we have analyzed the choice of $e_A$ and $e_G$ induced by any judicial review doctrine $(\rho_0, \rho_1)$ and agency policy $x$. We have also covered $A$’s incentives for determining $x$ in case $A$ obtains any strong evidence, $s_A = \omega$. Before we can determine the optimal judicial review doctrine, we must also identify the equilibrium policy choice $x_\phi$ induced by a doctrine $(\rho_0, \rho_1)$ in case $s_A = \phi$.

The Agency’s optimal policy choice $x_\phi^*$ in this event is determined as follows:

$$x_\phi^*(\rho_0, \rho_1) = \begin{cases} 
0 & \text{if } (1 - pe^*_G(0, \rho_0)) \rho_0 + pe^*_G(0, \rho_0) < (1 - pe^*_G(1, \rho_1)) \rho_1, \\
1 & \text{if } (1 - pe^*_G(0, \rho_0)) \rho_0 + pe^*_G(0, \rho_0) > (1 - pe^*_G(1, \rho_1)) \rho_1.
\end{cases}$$

Equation 4 is $A$’s incentive compatibility constraint.

In analyzing optimal judicial review, we can restrict attention to triples $(x, \rho_0, \rho_1)$ such that $x$ satisfies equation 4, given $(\rho_0, \rho_1)$. Other triples are strategically irrelevant in the sense that they include strategies that cannot occur together in any equilibrium. That is, a doctrine of judicial review cannot be socially optimal unless it is incentive compatible.

**Proposition 1** If $\rho_1 = 0$, then $x_\phi = 1$ is $A$’s strict best response.

The proposition follows by substituting $e_G^*$ from equation 2 into equation 4. If $\rho_1 = 0$, the right hand side of equation 4 is 0. The left hand side is strictly positive for $\rho_0 \in \{0, 1\}$. Intuitively, $\rho_1 = 0$ means that $C$ will uphold a pro-group policy even when $A$ lacks good justification for it. In that case, $A$ can promulgate $x = 1$ and set $e_A = 0$, knowing that $G$’s best response is $e_G = 0$. Thus $A$ guarantees success in court without incurring any investigation cost.

For reasons of space, we do not consider the possibility of setting a judicial review strategy so as to make the Agency indifferent between $x_\phi = 0$ and $x_\phi = 1$. However, note that *ex ante* expected social welfare can not be strictly improved by such a review strategy. This conclusion might fail to hold, of course, if there were *ex ante* incomplete information about the Agency’s policy preferences.
The non-trivial arrangement ruled out by this proposition\(^{22}\) is \(x = 0\) with \(\rho_0 = 1\) and \(\rho_1 = 0\). It is impossible to simultaneously induce the Agency to promulgate the anti-Group policy while adopting a stance of extreme skepticism toward that policy. In such a situation, \(x_\phi = 0\) will be overturned with probability 1 (either the group will learn nothing, will uncover supporting evidence that it conceals, or will uncover contradictory evidence that it presents), whereas there is positive probability that the Agency will be upheld if it chooses \(x_\phi = 1\).

**Proposition 2** If \(\rho_0 = \rho_1 = 1\), then \(x_\phi = 1\) is A’s strict best response.

The proposition follows by evaluating the left and right hand sides of equation 4. When \(\rho_0 = \rho_1 = 1\), \(x_\phi = 1\) is strictly optimal if \(1 > 1 - \frac{\rho_1^2}{\beta c}\), which is always true given Assumption 1.

While technically simple, proposition 2 captures an important idea. When \(C\) rejects all rules lacking convincing justifications, \(A\)’s only chance to be upheld in court comes from choosing the pro-group policy \(x = 1\) when \(s_A = \phi\). It is at least possible in this case that \(G\) adduces evidence that saves \(A\)’s rule from judicial nullification. Indeed, when \(x = 1\) and \(\rho_1 = 1\), \(G\) has strong incentives to investigate — because it knows the only way to preserve the beneficial rule promulgated by \(A\) is to present evidence justifying it. On the other hand, if \(x_\phi = 0\), there is no chance for \(A\) to be upheld in court. Either \(G\) will present hard evidence that \(\omega = 1\), contraindicating \(x = 0\); or \(G\) will conceal hard evidence that \(\omega = 1\); or \(G\) will obtain no information. In all cases, \(C\) overturns \(A\)’s regulation.

Even more striking, this judicial review posture is a clear case satisfying a standard of “legal rationality.” The court decides the fate of regulations based solely on the depth of evidence supporting them. If a regulation is supported by hard evidence, it is upheld. If a regulation is contradicted by hard evidence — a “clear error” by the agency in light of the facts — it is nullified. If there is no conclusive evidence about the social value of the agency’s action, again it fails to pass judicial scrutiny.

Yet, this clear case of legal rationality, where court judgment is based solely on evidence and reasoning, induces an equally obvious political bias in the agency. Under this judicial review doctrine, the agency is biased in favor of prominent interest groups, in the sense that it regulates in such a group’s favor when it lacks strong evidence to the contrary.

\(^{22}\)The proposition also rules out \(x = 0\) with \(\rho_0 = \rho_1 = 0\), which is trivial in that it requires \(C\) to uphold all regulations that are unsupported by any evidence. Obviously, this cannot maximize social welfare in our model, and (relatedly) is substantively absurd.
Proposition 3 If $\rho_0 = 0$ and $\rho_1 = 1$, then $x_\phi = 0$ is A’s best response.

Given equation 4, this follows immediately from Assumption 3. Essentially the assumption means that the marginal cost of $G$’s investigation increases fast enough, given the prior $p$ that the pro-group policy is socially desirable and $G$’s benefit $\beta$ from $x = 1$, that $A$ cannot count on $G$ marshaling strong evidence in its favor if $x_\phi = 1$. Put differently, if $A$ were to make that choice with a thin record, the parameters $\beta$ (importance to $G$ of sustaining $A$’s action) and $p$ ($G$’s belief that evidence it obtains will support its position) are such that record would likely remain thin after $G$’s investigation — and $C$ would reject $A$’s regulation. By the same token, when $x_\phi = 0$, $A$ knows that $G$’s investigation cost and the prior $p$ are such that $G$’s investigation is not excessively threatening to $A$’s presumed judicial support of a thin record.

Propositions 1, 2, and 3 imply that only three of the (non-trivial) triples $(x, \rho_0, \rho_1)$ are incentive compatible. As shown in the Appendix, each of these incentive compatible triples is socially optimal in some region of the model’s parameter space. Given that, the model’s most interesting substantive conclusions emerge from investigating the features these incentive compatible arrangements have in common. Three are particularly striking.

First, when anti-Group deference by the Court is optimal, the Court will affirm anti-Group policies even in some situations in which the Agency produces a “thin” record in support of its proposal. This posture is in contrast to standard doctrines of judicial review of agency findings of fact in rulemaking. The most recent authoritative Supreme Court case on this issue (Manning and Stephenson (2010)) is Motor Vehicle Manufacturers Association v. State Farm Mutual Automobile Insurance Co. (1983), in which Justice White noted that “an agency rule would be arbitrary and capricious [and therefore in violation of the Administrative Procedure Act] if the agency has...offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to...the product of agency expertise.” Here the agency’s policy choice $x = 0$ is unsubstantiated by any expertise or factual basis, yet the court optimally defers to its decision. The reason is that such a choice gives groups strong incentives to adduce information invalidating the agency’s choice, and if they do not present any, that in itself provides evidence consistent with the agency’s choice.

23 Another triple, $x = 1$ and $\rho_0 = \rho_1 = 0$, was not covered by the lemmas, but it is trivial because (like the $(0, 0, 0)$ case addressed in a previous footnote) it cannot be socially optimal and is not substantively meaningful.
Second, in cases where the court upholds regulations with weak support, the Court must treat different policies differently, even though the quality of the record adduced in support of the policies is the same. For example, when optimal, this regime can be supported by deference to \( x_\phi = 0 \) and extreme skepticism toward \( x_\phi = 1 \) (\( \rho_0 = 0 \) and \( \rho_1 = 1 \)).\(^{24}\) This is, in a sense, “legally irrational”: the court in these cases is not focusing solely and even-handedly on the depth of the record and quality of agency reasoning from it, or even merely the procedures used to assemble it. But because of the effects of this doctrine of review on incentives for \( A \) and \( G \) to investigate, it can create more information about the effects of regulatory policy.

This “legal irrationality” would appear to outside observers as politicization of judicial decision making. In the case of \( \rho_0 = 0 \) and \( \rho_1 = 1 \), the Court gives the Agency a “free pass” to move against the Group’s interests, but is maximally skeptical of the Agency when it moves in favor of the Group’s interests. It might seem tempting to criticize such a Court as elevating its own ideology over the Group’s interests. But this conclusion is invalid by design in our model: the Court has no ideology of its own. Thus, an apparently politicized judiciary is not necessarily operating at the expense of society’s interests.

Third, it is difficult, in a sense, to sustain the anti-group policy \( x_\phi = 0 \). It can only be incentive compatible if \( \rho_0 = 0 \) and \( \rho_1 = 1 \), and eliciting this policy choice also requires special values of other parameters (in particular, \( \beta \)). The dependence of proposition 3 on Assumption 3 implies that there is no judicial review doctrine \( (\rho_0, \rho_1) \) alone that is sufficient to induce \( x_\phi = 0 \). This highlights a fundamental pro-group bias in notice and comment proceedings (one very much in line with McCubbins, Noll and Weingast (1987)): with a reversal-averse agent, a biased group, and a court exercising non-trivial review of evidence presented to it, it is difficult to induce an agent to challenge the interests of privileged groups.

For example, a judicial review strategy that is dubious of either policy when accompanied by a thin record \( (\rho_0 = \rho_1 = 1) \) will result in promulgation of the pro-Group strategy by the Agency when the Agency is uninformed. This arrangement is (1) the sole instance of a “legally rational” doctrine of judicial review among the incentive compatible triples, and (2) hard to distinguish from “agency capture”;\(^{25}\) the regulator promulgates the in-

\(^{24}\)There are multiple payoff equivalent review strategies that elicit \( x_\phi = 0 \) and involve \( \rho_0 = 0 \). This extreme version is most clear to consider. Given our informational framework, one would never observe the actual review strategy for \( x_\phi = 1 \) in this regime.

\(^{25}\)The theory of agency, or regulatory, capture is a venerable one. The two seminal works on the topic are Huntington (1952), Bernstein (1955). A more formal treatment is offered by Laffont and Tirole.
terest group’s favored policy unless it has incontrovertible evidence to contraindicate that policy. Yet the scenarios in which the (appearance of a) pro-Group bias is optimal are exactly those in which the Group will be incentivized by judicial skepticism to collect information to bolster its case in court. Thus, somewhat ironically, this apparent agency capture is engendered by a doctrine of judicial review that is legally rational, consistent with existing legal doctrine about judicial skepticism of thin records, and in some instances optimal for society in our model.

As a final comment, the incentive compatibility results also reveal precisely the effect of the notice and comment process in the political environment reflected in this model. Note that in all of the incentive compatible triples, A’s behavior is affected in the same direction by $\rho_0$ and $\rho_1$, whether the Group is permitted to comment or not (i.e., even if notice and comment were somehow disallowed). The effect of notice and comment is not to change the comparative statics conditional on any of these triples. Its effect is to make these triples the only incentive compatible ones in the first place. Without the involvement of the Group in the notice and comment process, the incentive compatibility considerations for the Agency in other triples would be radically different.

3 Process and Information: Revision

One of the key elements of the notice and comment process that our theory does not include is the possibility of Agency revision after receiving comments from the Group. In particular, the notice and comment process involves a relatively unstructured pre-proposal process carried out within the Agency, after which the Agency issues at least one notice of a proposed rule, following which interested parties are invited to submit comments to the Agency regarding the proposed rule.

We now briefly consider a structural alteration of the baseline model (maintaining the same assumptions about preferences) in which the Agency is allowed to revise its (1991), and a recent historical study of capture as it affected federal judicial review in the late 20th century is presented in Merrill (1996).

There are approaches to pre-proposal idea generation and analysis that do have some structural requirements imposed through either statute or executive order. One such example, discussed earlier, is negotiated rulemaking, the moving parts of which may be started very early in the policy process. Others center on various “preclearance” processes that have been imposed by presidents from both parties since the Carter Administration. Wiseman (2009) considers these features in some detail—we leave the question of the effects of the interaction between such procedures and the possibility of ex post judicial review for future work.
proposal after the Group submits a (possibly untruthful) message and, following that, the Group can reveal its signal if it did not reveal it at the first opportunity. In order to keep the analysis as simple as possible, we do not allow the Agency or the Group to exert investigative efforts after their first respective opportunities to reveal their respective signals.\footnote{We conjecture (1) that this restriction for the Group is unimportant, but (2) the Agency may in some (many?) cases strictly prefer to shirk at the first opportunity to collect information and attempt to free ride on any information collected (and, in the case of $s_g = 1$, revealed) by the Group.} We also assume that it is costless for the Agency to modify its proposal.

Suppose, as in the earlier analysis of the baseline model, that the Court affirms any policy accompanied by a dispositive justifying message and overturns any policy accompanied by a dispositive contraindicating message. Under this supposition, it is clear that the Group’s incentives to reveal its signal (which depend on the signal’s content) are unchanged in subgames in which the Group has an informative signal but did not reveal it at the first opportunity. Given this, it is clear that, in any subgame perfect equilibrium in weakly undominated strategies of this modified game, the Agency will modify its policy in any subgame in which the Group’s message is informative and indicates that the Agency’s original proposal is incorrect.

The Group’s incentives to reveal its signal at its first opportunity are similar to its incentives at the second round.\footnote{It is worth noting that this is partly due to both the binary state/policy structure and the preference alignment we have assumed. In richer settings, the Group’s incentives at the two opportunities will in general differ.} We consider them in turn, based on the content of the Group’s signal.

If the Group’s signal is pro-Group ($s_G = 1$), then the Agency will respond to the revelation of this signal by ensuring that the final policy is $x = 1$, which will be upheld by the Court. Accordingly, the Group’s best response is to reveal $s_G = 1$. On the other hand, revealing $s_G = 0$ will ensure that the final policy is $x = 0$ and is upheld by the Court. Even in this extended process, the Group’s bias in terms of what information it will willingly provide remains unchanged.

In some cases, the incentives of the Agency with respect to the choice of which policy to (initially) propose when the Agency is uninformed are altered from those in the baseline model in an important way. Now, even if the anti-Group policy is greeted by the Court with extreme skepticism (\textit{i.e.}, $\rho_0 = 1$), the Agency in this extended setting can propose $x_{\phi} = 0$ and still avoid reversal with positive probability (unlike in the baseline model).
The Agency’s expected payoff function in this model is

\[ U'_A(x, e_A) = \begin{cases} 
(e_A - 1)(1 - e_G^*(0) + e_G^*(0)(1 - p)) \rho_0 k - \frac{\kappa}{2} e_A^2 & \text{if } x = 0, \\
(e_A - 1)(1 - e_G^*(1) + e_G^*(1)(1 - p)) \rho_1 k - \frac{\kappa}{2} e_A^2 & \text{if } x = 1, 
\end{cases} \]

so that one of the structural “kinks” confronting the Agency in the baseline model is removed here by including the opportunity for the Agency to respond to the Group’s comments. That kink (which occurs with probability \( p e_G^*(0) \), the equilibrium probability that the Group will obtain the signal \( s_G = 1 \)) would of course partially reemerge if the Agency bore a cost of revision, as the Agency knows that it will never need to revise \( x = 1 \) and would, on the margin, prefer to avoid revision.

Therefore, revision makes it “easier” for a doctrine of judicial review to induce the anti-Group policy from \( A \) when it is uninformed. However, both the Group’s bias in reporting information, and the Agency’s incentive to report all information in the first instance, remain unchanged from the baseline model. Thus there is still positive probability that the Court encounters a contested proposal accompanied by a thin record. The Court must choose a doctrine of judicial review for such a contingency, and a welfare maximizing court will do so subject to the strategic imperatives of \( A \) and \( G \). It is clearly not the case that the anti-Group policy is always optimal for \( C \) to induce when revision is possible, and, in light of the analysis of the previous section, clearly is the case that legally rational judicial review is not necessarily compatible with a particular policy \( C \) wishes to induce. Thus, allowing revision by \( A \) does not change the fundamental character of the conclusions noted in the previous section.

### 4 Conclusion

Notice and comment rulemaking followed by judicial review is the bedrock of procedural legitimacy in agency policy making. Our model shows that this procedure can have important and subtle effects on the incentives of both agencies and interested parties to investigate the issues surrounding a policy and build a record rationalizing their decisions. While the actors’ preferences in our model are stylized — in particular, groups are unconditionally biased in favor of one policy and against another; agencies have no policy preferences and simply want to avoid reversal (and costly effort) — they capture a situation in which standard rulemaking procedures have interesting effects.
Naturally, in light of the agency’s desire to avoid reversal, the court’s posture of skepticism toward the agency can induce it to investigate the issues it faces more deeply. But the incentives and bias of interested groups imply that the socially optimal judicial posture is not necessarily skeptical of the agency. Rather, in some situations courts should be deferential to agency policy choices even if the evidence supporting the agency’s policy is meager — because those decisions give groups biased against them strong incentives to provide hard contradictory information when they can. When courts are deferential to such agency decisions, interested groups know they cannot count on skeptical courts to hold agencies in check. In this way, socially optimal judicial review is sensitive to the politics surrounding agency regulation — the benefits and costs it imposes on favored groups — even though courts in our model are, by design, wholly apolitical. Moreover, the model straightforwardly implies that optimal judicial review is not simply a function of the quality or depth of the record adduced by the agency in support of its decision; it also depends on the policy content of the decision. In other words, even when agencies select from a statutorily-defined and sanctioned set of policy options, optimal judicial review implies that courts should be more deferential to some policy decisions — particularly those unfavorable to interested parties — than others.

While it presents some insights about judicial review, the restrictiveness of the model calls for a number of extensions. Many have been discussed above, but those we see as particularly important are more realistic specifications of agency preferences, agency discretion over whether to propose a policy, incorporating agency revision of its initial policy in light of comments from interested parties, and allowing for multiple groups.

References


A Appendix: Ex Ante Optimal Doctrines of Judicial Review

Expected social welfare is calculated as follows:

\[ W(\rho) = \begin{cases} 
  e_A^*(0) + (1-p)(1-e_A^*(0))(1-\rho_0) & \text{if } x_\phi = 0, \\
  e_A^*(1) + p(1-e_A^*(1))(e_G^*(1) + (1-e_G^*(1))(1-\rho_1)) & \text{if } x_\phi = 1,
\end{cases} \]

where

\[ x_\phi(\rho_0, \rho_1) = \begin{cases} 
  0 & \text{if } \rho_0 + p^2(1-\rho_0)^2/c < (1-p^2\beta\rho_1/c) \rho_1, \\
  1 & \text{if } (1-pe_G^*(0, \rho_0)) \rho_0 + pe_G^*(0, \rho_0) > (1-pe_G^*(1, \rho_1)) \rho_1.
\] (5)

The following are the ex ante equilibrium social welfares flowing from each of the three (non-trivial) incentive compatible judicial review doctrines:

\[ W(\rho_0 = 0, \rho_1 = 1|x_\phi = 0) = 1 - p + \frac{kp^3}{ck}, \] (6)
\[ W(\rho_0 = 1, \rho_1 = 0|x_\phi = 1) = p, \]
\[ W(\rho_0 = 1, \rho_1 = 1|x_\phi = 1) = \frac{p^2\beta}{c} + \left(1 - \frac{p^2\beta}{c}\right) \frac{k(c-p^2\beta)}{ck}. \]

First, considering the use of deferential treatment to obtain the anti-Group policy, \( x_\phi = 0 \) \((\rho_0 = 0, \rho_1 = 1)\) with the use of a deferential treatment to obtain the pro-Group policy, \( x_\phi = 1 \) \((\rho_0 = 1, \rho_1 = 0)\), eliciting \( x_\phi = 0 \) is optimal only if

\[ 1 - p + \frac{kp^3}{ck} > p. \] (7)

The term “expected” is key, as when \( C \) is interested in interim social welfare it will never reverse \( A \)’s decision.

\[ \text{29} \]
Given our assumptions, inequality (7) is satisfied for sufficiently small \( p \) and not satisfied for sufficiently large values of \( p \).\(^{30}\) Substantively (and intuitively), social welfare is maximized by deferential treatment of the anti-Group policy only if the Group’s interests are not sufficiently well-aligned with those of society at large.

Similarly, comparing the use of deferential treatment to obtain \( x_\phi = 0 \) with the use of a skeptical review strategy to obtain \( x_\phi = 1 \) (\( \rho_0 = \rho_1 = 1 \)), deferential elicitation of the anti-Group policy is optimal only if the following inequality holds:

\[
1 - p + \frac{k p^3}{c \kappa} > \frac{p^2 \beta}{c} + \left( \frac{c - p^2 \beta}{c} \right)^2 \frac{k}{\kappa}.
\]

This inequality holds for
- sufficiently small values of \( \frac{k}{\kappa} \),
- sufficiently small values of \( p \),
- sufficiently small values of \( \beta \), and
- sufficiently large values of \( c \).

Deference to pro-Group policies is socially preferred to skeptical treatment of such policies if

\[
p > \frac{p^2 \beta}{c} + \left( \frac{c - p^2 \beta}{c} \right)^2 \frac{k}{\kappa}.
\]

This inequality holds for sufficiently small values of \( p \)—the unilateral effects of the other parameters are strongly dependent on \( p \) in the sense that none of these parameters can on their own (i.e., independent of the value of \( p \)) determine the optimality of judicial deference to a pro-Group policy promulgated with a thin record. Putting these three comparisons together, we can summarize the effects of the various parameters as follows.

**Proposition 4** Deference to, and elicitation of, the anti-Group policy is socially optimal only if
- the Agency is not particularly reversal-averse (\( \frac{k}{\kappa} \) sufficiently small),
- the interests of the Group diverge sufficiently from Society’s (\( p \) sufficiently small),
- the Group’s bias for its favored policy is not too great (\( \beta \) sufficiently small), and
- the Group’s marginal costs of information grows quickly (\( c \) sufficiently large).

\(^{30}\)To see this, evaluation of (7) at \( p = 0 \) and \( p = 1 \) straightforward, it is simple to confirm that the first partial derivative of the left hand side of (7) is strictly negative for \( p \in [0, 1] \), and that of the right hand side is positive, given Assumptions 1 and 4.
Furthermore, skeptical treatment of pro-Group policies is optimal only if the interests of the Group diverge sufficiently from Society’s (again, only if $p$ is sufficiently small).

One of the main conclusions to be drawn from Proposition 4 is that deference to pro-Group policies ($\rho_1 = 0$) is optimal whenever $p$ is large enough and $\beta$ is sufficiently large to require (or, in the case of $\beta$, allow) judicial review to motivate the Group to collect information. This is an extreme version of court-induced agency capture: under this mechanism, equilibrium play involves the Agency always defers to the Group in the absence of hard information to the contrary, the Court always sanctions this stance, and no information is collected by either the Agency or the Group.\footnote{As above with deferential elicitation of $x_\phi = 0$, there are multiple payoff equivalent review strategies that elicit $x_\phi = 1$ and involve $\rho_1 = 0$. This extreme version is most clear to consider.}

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