

# Rubberstamping\*

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## ABSTRACT

Informal, “notice-and-comment,” rulemaking is the prototypical mechanism employed by U.S. regulators. However, agencies frequently claim themselves exempt from notice-and-comment, and courts typically agree. Hence, agencies face a strategic choice between rulemaking processes. To assess the implications, we study a series of models with possible exemption. In a baseline model with one group and a policy-agnostic agency, there is rubberstamping: the agency always successfully applies for an exemption. However, the group captures the agency, as its preferred rule is promulgated. When first competing groups are added and, then, the agency is assumed to have policy preferences, not only does notice-and-comment sometimes occur but there are conditions when a strong form of rubberstamping takes place by which the agency is exempt and implements its ideal policy. Our results are roughly consistent with empirical observations, provide a variety of testable observations, and offer insights into how the rulemaking structure impacts societal welfare.

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The enactment of the Administrative Procedure Act (APA) in 1946 constitutes a watershed moment in the development of the modern American bureaucracy, ushering in the modern era of administrative rulemaking. This “bill of rights for the hundreds of thousands of Americans whose affairs are controlled or regulated in one way or another by agencies of the Federal Government”<sup>1</sup> established a number of provisions for how agencies may establish regulations. The APA’s provision for informal, *notice-and-comment* rulemaking is especially noteworthy given its widespread implementation across classes of rules and agencies (formal rulemaking being rarely employed).

As is well-known, notice-and-comment involves three steps: initially, an agency conducts an analysis for a new rule and then issues its policy proposal (the notice); next, the public at large (in reality, including many special interests) may provide commentary; and, ultimately, the agency promulgates its final rule after taking the comments into account. Subsequently, societal interests may appeal the rule for review to the federal courts, in which case the court is supposed to consider the agency’s internal analysis, along with the public comment and the agency’s reaction.

Proponents of notice-and-comment in the legal tradition highlight its many benefits, including its inclusion for public deliberation (e.g. [Seidenfeld, 1992](#)), its provision of important technical information to the public (e.g. [Posner, 1997](#)), and its enhancement of agency accountability (e.g. [Strauss, 1996](#)). Social scientists, analyzing the consequences of the APA, maintain that notice-and-comment provides politicians with valuable time to allow for bargaining and helps ensure that long-term solutions correspond with their political preferences ([McCubbins, Noll and Weingast, 1987, 1989](#)).

Of course, even if one accepts the existence of these benefits uncritically, they are acknowledged as coming at the cost of governmental efficiency: as the Administrative Conference of the United States put it in its 1992 round of recommendations for the APA, “there can be costs to the agency in using notice-and-comment procedures, including the time and effort of agency personnel, the cost of Federal Register publication, and the additional delay in implementation that results from seeking public comments and responding to them. For significant procedural rule changes, the benefits seem likely to outweigh the

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<sup>1</sup>Floor speech by Senator Pat McCarran, Chairman of the Senate Judiciary Committee, March 12, 1946. Even those with less skin in the game agreed: administrative law pioneer Kenneth Culp Davis referred to informal rulemaking as “one of the greatest inventions of modern government” ([Davis, 1970](#)). By the end of the “era of rulemaking” of the 1970s, however, both [Scalia \(1981\)](#) and [McGarity \(1992\)](#) concurred that the “bloom [was] off the rose.”

costs; but this may not be the case for minor procedural amendments.”<sup>2</sup> Thus, while there may be other reasons to do so, such as realizing more favorable policy outcomes, agencies may have an incentive to engage in an end run around notice-and-comment, if it is feasible, to avoid its costs.

Indeed, this is frequently a possibility. While often overlooked, particularly by social scientists, the APA provides a number of exemptions to notice-and-comment rulemaking, both for particular kinds of rules (e.g. interpretative rules<sup>3</sup>) and for particular kinds of agencies (e.g., those providing national security). And while many of these rules are minor and non-controversial, it is widely acknowledged that this is not always the case. Indeed, according to a 2012 Government Accountability Office report,<sup>4</sup> 77% of major rules (and 61% of nonmajor rules) were promulgated under the “good cause” exemption to notice-and-comment.<sup>5</sup> If the APA is a Bill of Rights protecting citizens from the faceless bureaucracy, then abuse of its exemptions necessarily “dishonors our system of limited government” (Anthony, 1992, 1312).

The procedural benefits of exemptions may make them enticing to agencies, but the costs of being caught overstepping boundaries mean that agencies must exercise discretion in choosing when to invoke exemption—and when not to. Indeed, agencies may only allow notice-and-comment when administrators do *not* care about input. As Elliott (1992, 1492) argued,

“No administrator in Washington turns to full-scale notice-and-comment rulemaking when she is genuinely interested in obtaining input from interested parties. Notice-and-comment rulemaking is to public participation as Japanese Kabuki theater is to human passions—a highly stylized process for displaying in a formal way the essence of something which in real life takes place in other venues. To secure the genuine reality, rather than a formal show, of public participation, a variety of techniques is available....”

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<sup>2</sup>Recommendations of the Administrative Conference of the United States, 1 C.F.R. s305.92-1.

<sup>3</sup>Interpretative rules clarify existing rules and regulations rather than create new ones. See *Animal Legal Defense Fund v. Quigg* (1989) and *Paralyzed Veterans of America v. West* (1998). They may be thought of as how an agency interprets an existing statute, as in *First National Bank v. Sanders* (1991).

<sup>4</sup>“Federal Rulemaking: Agencies Could Take Additional Steps to Respond to Public Comments.” December 2012.

<sup>5</sup>These figures come from a random sample of final rules published during calendar years 2003–2010. The “good cause” exemption allows agencies to avoid notice-and-comment rulemaking if such would be “impracticable, unnecessary, or contrary to the public interest.” See 5 U.S.C. 533(b)(3)(B).

Not surprisingly, many in the legal community have called for clarifying when exemptions apply and reductions in their use; emblematic, the Administrative Conference issued recommendations in 1969, 1973, 1983, and 1992 for adjusting the scope of the set, while an unsatisfying body of case law has developed properly identifying the boundaries of that set.<sup>6</sup>

Hence, there remains considerable controversy surrounding the use—and abuse—of exemptions. For a recent example of their use that exemplifies their muddled nature, consider the Internal Revenue Service (IRS). The Treasury Department, of which the IRS is a constituent part, annually issues changes to the Internal Revenue Code, the nation’s primary domestic federal tax code. Despite acknowledging that the APA notice-and-comment provision applies to the department’s activities, Treasury “almost as often as not...does not follow the traditional APA-required pattern of issuing an NPRM [notice of proposed rulemaking], accepting and considering public comments, and only then publishing its final regulations” (Hickman, 2007, 1730). Treasury justifies its stance by invoking the interpretative rules exemption: “Interpretative rules are not subject to the provisions of 5 U.S.C.... Although most IRS/Treasury regulations are interpretative, and therefore not subject to these provisions of the APA, the IRS usually solicits public comments on all NPRMs.” Intriguingly, citizens almost never contest those NPRMs where Treasury *does* solicit public comments (Hickman, 2008).<sup>7</sup> While the public’s policy could well be one of *qui tacet consentire*, indicating broad support for whatever policies Treasury might come up with, the nature of tax codes makes this possibility improbable. Rather, the IRS may use exemptions to expedite change and/or realize outcomes more to its liking relative to notice-and-comment.

Of course, that agencies commonly seek and are granted exemptions, which were put in place for a reason, does not necessarily imply that this practice constitutes abuse, nor that it leads to bad policy. Even if agencies overstep their bounds, good policy might arise if agencies (1) are well-equipped to know which policy is best; and (2) do not introduce their own policy bias. Recent empirical evidence (Raso, 2015) suggests agency overuse of exemptions is motivated primarily by a low risk of punishment for doing so. In other words, agencies overuse exemptions when there is little disincentive to shirk, and they do so to preserve autonomy and to minimize costs. Thus, the Treasury example discussed above may

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<sup>6</sup>As William Hughes Mulligan, Judge of the U.S. Court of Appeals of the Second Circuit, puts it in his opinion on *Noel v. Chapman* (1975), exceptions are “enshrouded in considerable smog.”

<sup>7</sup>A few exceptions exist. See *Schwalbach v. Commissioner* (1998), *Griffin Industries Incorporated v. United States* (1992), and the others mentioned in Hickman’s footnote 7.

simply be a reflection of an opportunistic agency responding to relatively lax enforcement; [Hickman \(2007, 1807\)](#) herself qualifies that “[she does] not mean to suggest that Treasury...[is] intentionally manipulating the rules to accomplish nefarious ends. Even assuming the best of intentions, however, Treasury’s practices at least contradict the democratic impulses driving the APA and may lead to less effective guidance.”

Avoidance, however, does not always play out in a political vacuum. Consider the 1996 passage of the Small Business Regulatory Enforcement Fairness Act (SBREFA), which required, among other things, that two agencies—the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA)—execute additional inclusive panel processes beyond traditional informal rule-making. SBREFA, hammered out by a newly-elected Republican Congress, was established because “a vibrant and growing small business sector is critical to creating jobs in a dynamic economy” but “small businesses bear a disproportionate share of regulatory costs and burdens,”<sup>8</sup> and so it comes as little (political) surprise that two agencies frequently targeted by regulation critics would be subject to additional requirements.<sup>9</sup> The agencies’ public responses were supportive: EPA stated that the “SBREFA is consistent with EPA Administrator Carol Browner’s ongoing efforts to enhance stakeholder involvement, particularly by small entities, in the rulemaking process,”<sup>10</sup> while a senior OSHA economist noted that

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<sup>8</sup>Small Business Regulatory Enforcement Fairness Act of 1996, §202, Points (1) and (2). Highlighting the trade-off even further, Point (3) holds that “fundamental changes that are needed in the regulatory and enforcement culture of Federal agencies to make agencies more responsive to small business can be made without compromising the statutory missions of the agencies.”

<sup>9</sup>In reporting on the appointment of Joseph Dear as Assistant Secretary of Labor for Occupational Safety and Health in 1994, the *New York Times* observed that “[OSHA] is one of those government entities...that looms considerably larger in the ideological imaginations of its constituent interest groups than its teensy size would seem to warrant. It is, depending on one’s political proclivities, either failing its mandate to protect the health and safety of the nation’s workers or using its regulatory power to bludgeon employers and snuff out the spirit of capitalism. To say that OSHA was not favored in the Reagan-Bush years is to engage in understatement on a massive scale” (“Breathing New Life into OSHA,” January 23, 1994). Meanwhile, when Carol Browner was appointed EPA Director in 1992, the *Washington Post* wrote that “young, bright, hard-nosed and a self-proclaimed environmentalist, Browner has the mind and training of an attorney-legislator but the soul of an activist,” and that her appointment should be interpreted as a nod to “the ardent environmentalism of Vice President-elect Gore” (“Activist Ex-Aide to Gore Tapped to Direct EPA,” December 12, 1992).

<sup>10</sup>EPA 233-F-99-001: Fact Sheet, EPA Activities Related to the Regulatory Flexibility Act (RFA), as Amended by

“Since the passage of [the] SBREFA, OSHA has redoubled its efforts to enhance the involvement of this important group of [small business] stakeholders in the process and to identify cost-effective ways of protecting the safety and health of the millions of workers employed in small establishments.”<sup>11</sup>

Yet [Raso \(2015\)](#), employing a difference-in-difference strategy, finds that EPA and OSHA avoided rulemaking *more* than other agencies after the SBREFA. Three explanations for the two agencies’ responses come to mind: that they changed their policies by proposing fewer rules that would attract small business interests; that they avoided the new costs imposed by the SBREFA; and that they responded aggressively to demonstrate that they would not be bullied by congressional opposition. Regardless, the SBREFA targeting highlights the fact that rulemaking requirements, and agency response through avoidance, are both subject to political tensions that are not easily disentangled from procedural costs. This may even be for largely behavioral reasons. For example, in a seemingly analogous situation, [Lavertu, Lewis and Moynihan \(2013\)](#) found that “liberal” agencies at odds with the conservative George W. Bush administration were more likely to have additional compliance requirements imposed upon them, but also that they perceived and reported more effort than actually performed controlling for these higher hurdles.<sup>12</sup> It seems that impositions and exemptions reflect a balance of procedural costs and political preferences, and the nature of this balance introduces the possibility that not all uses—and abuses—of exemptions are harmless.

Given the potential for abuse, we might expect courts to oppose strenuously the exemption’s overuse. And, to some extent, courts have done so. Speaking a quarter century ago, the DC Circuit warned that good cause exceptions are to be “narrowly construed and reluctantly countenanced.”<sup>13</sup> More recently, the same circuit argued that the costliness of notice-and-comment alone is insufficient to eschew it: “good cause requires some showing of exigency beyond generic complexity of data collection and time constraints;”<sup>14</sup> as a result, “bald assertions that the agency does not believe comments would be useful

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the Small Business Regulatory Enforcement Fairness Act.

<sup>11</sup>Statement of Robert Burt, Senior Economist of the Occupational Safety and Health Administration, before the Subcommittee on Government Programs and Oversight and the Subcommittee on Paperwork and Regulatory Reform of the Committee on Small Business, U.S. House of Representatives, April 17, 1997.

<sup>12</sup>It is worth noting that both EPA and OSHA are classified as relatively liberal agencies using the [Clinton and Lewis \(2008\)](#) measure of agency ideology.

<sup>13</sup>*New Jersey v. EPA* (1980)

<sup>14</sup>*NRDC v. Evans* (2003)

cannot create good cause to forgo notice and comment procedures.”<sup>15</sup> Yet, the cases mentioned above, as well as the exemption’s widespread use, suggest that such tough talk has not stopped agencies’ frequent invocation of the exemption.

Strikingly, while the fundamental importance of APA exceptions has been discussed in some depth in the legal literature (e.g. [Hamilton, 1972](#); [Mashaw and Harfst, 1990](#)), it has not been widely considered by social scientists studying administrative behavior ([Raso, 2015](#)). Most notably, scholars have not systematically analyzed the decision whether to engage in, or to eschew, notice-and-comment. Such lack of attention seems mistaken, as our discussion above suggests that agencies face a strategic question, even when they are not well-protected by vague exceptions, that precedes informal rulemaking: Should they engage in notice-and-comment or attempt to sidestep it by claiming exempt status? This, in turn, raises several related questions: Can agencies using exemptions generate policy outcomes which they find more favorable, or do they have to accept notice-and-comment if they want a more preferred outcome? As a function of considering their strategic option to claim an exemption, do agencies allow interest groups to learn about the state of the world, and to what policy effect?

Our analysis answers these questions by theoretically investigating the relevant choice process. We do so by modeling rulemaking as a strategic game, integrating an initial choice of whether to use notice-and-comment or not. In doing so, we offer insights complementary to those in [Gailmard and Patty \(2014\)](#), which represents the first attempt to model the “textbook” notice-and-comment process (from agency to a public group to a court) and which is the model most similar to our own.<sup>16</sup> Gailmard and Patty note that notice-and-comment rulemaking creates a paper trail of evidence, which they seek to endogenize. Yet, our discussion suggests that, if we accept the legal canon on exemption, the paper trail that we observe with notice-and-comment rulemaking should be quite different than what we would observe if exemptions were not employed to prevent a trail in the first place.

To better understand the effects of exemptions on informal rulemaking, we develop a model that is as simple as possible and builds additional complexity incrementally. Our baseline model includes the same three players as in Gailmard and Patty: an agency, an interest group, and a court. However, while

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<sup>15</sup>*Action on Smoking and Health v. Civil Aeronautics Board* (1983).

<sup>16</sup>[Stephenson \(2006, 2008\)](#) provides similar models of interactions among a court and an agency, but does not incorporate interest groups, much less informal rulemaking. [Fox and Stephenson \(2011\)](#) model executive posturing similarly to our approach to exemption, but do not include public interests.

in the Gailmard and Patty model the agency's only decision is which rule to propose—after which the group may expend effort to learn about the rule and the court makes a decision based on the agency's and group's actions—in our model the agency can opt out of notice-and-comment. In doing so, the decision on the proposed rule goes directly to the court, so that the group does not make a decision about effort. If the court allows the exemption, the game immediately ends and the rule takes effect. If the court rejects the exemption, then notice-and-comment ensues. Given agencies that are averse to judicial rejection and that must pay costs to file for exemption and courts that are averse to incorrectly rejecting claims of exemption, we predictably find that a policy-neutral agency always proposes the interest group's preferred policy, which the interest group always allows to proceed without complaint and which the court always accepts. That is, the group captures the agency in classical fashion by always receiving its preferred policy outcome (Laffont and Tirole, 1991) while the agency avoids costly conflict.

One obvious problem with the baseline model is that the finding that interest groups always offer tacit consent does not comport with reality. Additionally, some basic, potentially relevant features of rulemaking are not captured. As such, we modify the model in two ways: by building in competing interest groups and then also assuming that the agency has policy preferences.

Including two groups with competing preferences captures the reality of myriad rulemakings. Indeed, the presence of competing interest groups with heterogeneous preferences has been used as a primary criterion for classifying notice-and-comment cases (Reiss, 2009).<sup>17</sup> We find that competing groups generally benefit society, which comports with previous results on advocacy (Dewatripont and Tirole, 1999). Indeed, the threat of opposition from either side compels the agency to behave in textbook fashion by always proposing the rule that it thinks will benefit society most. However, the agency's

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<sup>17</sup>For example, the National Highway Traffic Safety Administration's 2007 proposal to mandate seatbelts on school busses yielded over 100 comments from a variety of stakeholders, including school bus operators, manufacturers, school boards, and former NHTSA administrators. These comments ranged from short responses to long technical reports. Conversely, the 2007 Occupational Safety and Health Administration proposal to enhance sanitation requirements in shipyards yielded many responses, but they were all nearly identical and nearly all came from industry members and associations. Of course, given the arguments above, it should come as no surprise that some rules attract no attention at all: the 2008 Federal Aviation Administration rule regarding the rewiring and testing of the fuel valve of the Bell Helicopter Textron Canada helicopter—which made it to the notice-and-comment stage—yielded precisely zero comments.

*procedural* decision varies, with exemptions being appealed only when the court faces stiff costs for overturning exempt agencies.

When we then incorporate agency policy interests into the competing groups model, we find more nuanced results. In some circumstances, agencies can still use exemptions to avoid notice-and-comment; now, instead of behaving as if captured, the agency realizes its own policy preference. In other instances, the agency's behavior depends on its costs of being overruled on policy grounds. Whether this equilibrium improves societal welfare relative to the baseline is conditioned by the parameter space. Interestingly, societal welfare may suffer from agencies that are *too* competent: if politicized agencies are confident that they know what is best for society, they can engage in behavior that achieves outcomes good for them but potentially bad for society.

All told, our results highlight the importance of court and agency motivations in generating outcomes under informal rulemaking. If courts are more concerned with the costs of overruling exempt agencies than they are with policy outcomes—as they may be in the case of allowing agencies to work freely in response to some catastrophe—then agencies are able to avoid notice-and-comment rulemaking altogether. Neutral agencies can use this to push their best guess for society through, while biased agencies can use it to help them achieve independent policy goals. However, if courts are more concerned with policy outcomes, agencies are forced to take on notice-and-comment rulemaking, which in turn means that they only sometimes are able to work toward their preferred policy ends. Our characterization of informal rulemaking, then, is generally skeptical, though it remains possible that informal rulemaking is still preferable to alternative forms of bureaucratic implementation (Pierce Jr., 1979).

Our analysis proceeds in four parts. In the first section, we describe and analyze the baseline model. Next, we include competing interest groups, and then we incorporate an agency with policy preferences. We then discuss our results and conclude.

## 1 THE BASELINE CASE

The baseline model features three players: a Court (*C*), an Agency (*A*), and an interest Group (*G*). The case represents a baseline for two reasons: we model only a single interest group, and the Agency is policy-neutral.

## 1.1 Timing of the Game

These three actors engage in an extensive form Bayesian game; the uncertainty stems from what policy is best for Society. The timing of the game is as follows:

1. Nature draws the state of the world, which represents the best policy for Society. We denote this as Society's ideal point,  $\hat{x}_S \in \{q, 1\}$ , where both  $q$  and  $1$  are possible policies. We assume  $0 \leq q < 1$ .
2. The Agency receives a signal about the state of the world; call it  $s_A \in \{q, 1\}$ . The signal is imperfect, which we capture by fixing  $\Pr(s_A = z \mid \hat{x}_S = z) = p$  for  $z \in \{q, 1\}$ . As  $p$  increases, the Agency is more competent at learning the true state from its signal. We assume the Agency is reasonably competent, so

$$p \geq \bar{p} \equiv \max \left\{ \frac{1}{2}, \frac{k}{1+k-q} \right\},$$

where  $k$  will be defined shortly. We also assume the Agency is not perfectly competent, so  $p < 1$ . The Court and Group share a common prior that  $s_A = 1$  with probability  $\lambda$  and  $s_A = q$  with probability  $1 - \lambda$ .

3. After observing the signal  $s_A$ , the Agency chooses a policy to recommend; call it  $x \in \{q, 1\}$ . Both the Court and the Group observe  $x$  regardless of the other decisions made in the game, and it is the basis of their updating.<sup>18</sup>
4. After choosing a policy  $x$ , the Agency also decides whether to apply for an exemption from the notice-and-comment process or not,  $a \in \{0, 1\}$ , where  $a = 1$  indicates applying for exemption. Applying for exemption incurs a small cost,  $\nu > 0$ , for the Agency.
5. If an exemption is applied for ( $a = A$ ), then the Court determines whether to grant it. Call the decision  $y \in \{0, 1\}$ , where  $y = 1$  denotes granting exemption and  $y = 0$  denotes rejecting exemption. If  $a = A$  and  $y = 1$  (that is, the Agency applies for exemption and the Court grants

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<sup>18</sup>The reader may wonder if Courts are always so attuned to the policy landscape they rule over. [Fox and Vanberg \(2014\)](#) craft a model where judges are uncertain of the policy implications of their legal principles. Surprisingly, they find that judges often issue broad rulings precisely because of this ignorance.

it), then the game ends with the proposed rule  $x$  enacted. Denote the final policy outcome  $\pi$ , meaning  $\pi = x$  if  $a = A$  and  $y = 1$ .

6. If the exemption is not granted (or applied for), then we move on to the notice-and-comment portion of the game. First, the Group may expend resources to learn the state of the world; call this effort level  $e_G \in [0, 1]$ . After choosing the effort level, the Group learns the state of the world,  $s_G = \hat{x}_S$ , with probability  $e_G$ . Conversely, she receives the uninformative signal,  $s_G = \phi$ , with probability  $1 - e_G$ .
7. After receiving the signal, the Group sends a message to the Court. The message can be informative or not:  $m_G \in \{s_G, \psi\}$ , where  $\psi$  is the uninformative signal. If the Group does not learn the state of the world, it must send the uninformative signal:  $s_G = \phi \Rightarrow m_G = \psi$ .
8. Finally, the policy  $\pi$  is determined. The proposed policy  $x$  is implemented if the Group offers no argument for the contrary:  $m_G \in \{x, \psi\} \Rightarrow \pi = x$ . However, if the Group offers an argument to overturn  $x$  by sending  $m_G \notin \{x, \psi\}$ , then  $x$  is overturned and the correct policy is implemented. We capture this with the term  $\rho \in \{0, 1\}$ , with  $\rho = 1$  indicating that the policy is overturned.

## 1.2 Payoffs

We begin by describing the policy components of each players' payoff. While the Agency is agnostic to policy, both the Court and the Group have policy preferences. The Court wants what is best for Society, so its utility is given as

$$u_{\hat{x}_S}(\pi) = 1 - |\hat{x}_S - \pi|.$$

(Throughout, we use subscripts to denote the ideal point captured in a given utility function.) We assume without loss of generality that the Group prefers the policy at 1, so its utility is given by

$$u_1(\pi) = 1 - |1 - \pi|.$$

These policy preferences are only part of the final payoffs. For the policy-neutral Agency, the payoff is a function of whether or not its policy was overturned ( $\rho = 1$ ). If overturned, then the Agency pays

a cost  $k > 0$ . Therefore, the Agency's final payoff is

$$U_A = -\rho k - \nu a.$$

As for the Court, it not only desires to choose what is best for Society, but it also wants to grant exemptions to the Agency when it has good cause. This good cause exists with probability  $h \in (0, 1]$ . If the Agency does, in fact, have good cause but has its appeal for exemption rejected by the Court ( $y = 0$ ), then the Court pays an extra cost  $d > 0$ . Therefore, the Court's payoff is

$$U_C = u_{\hat{x}_s}(\pi) - (1 - y)hd.$$

(Note that the Court pays no explicit costs for denying applications filed by exempt Agencies.) Per the Group, recall that it prefers policies close to 1. Recall also that the Group can expend energy to learn the true state of the world; this incurs costs, so that

$$U_G = u_1(\pi) - \frac{c}{2}e_G^2,$$

where  $c > 0$  scales the costs.

### 1.3 Some Remarks on the Model

Before presenting our results, we discuss some of our model's features. We do so as some of our modeling choices relate back to our mechanism of interest, so they are relevant for our theoretical investigation as well as suggesting areas for future research.

***Asymmetric information on good cause.*** In our model, the Agency proceeds without worrying about whether it is truly exempt from notice-and-comment. Meanwhile, the Court has a simple belief, parameterized probabilistically as  $h$ , as to whether exemption applies. The Group does not observe attempts for exemption and does not care about the notice-and-comment procedure.<sup>19</sup> One might think that the act of appealing for exemption is itself a signal about whether there is good cause; likewise, the proposed rule might also provide some information. We have opted for the simpler model that does not

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<sup>19</sup>Previous incarnations of our model allowed the Group to observe  $a$  and, with appropriate restrictions imposed on the beliefs, the results were the same.

include this signaling apparatus because adequately capturing the signaling mechanism would introduce a great deal of complexity to our model. In the present version, types can costlessly mimic one another because the Agency does not care whether it is exempt. Alternatively, if it did care, we would have to add even more complications to the preferences. Yet, our earlier discussion suggests that whether the Court believes that exemption applies is a political matter, and that the Agency's utility function is impacted by enforcement rather than abstract notions of what ought to be exempt. Therefore, our utilities and subsequent informational structure provide the simplest realistic account of the mechanism at hand. That said, the exemption signal should be addressed more explicitly in future work, particularly in repeated interactions between Courts and Agencies.

**Transparency.** Given the discussion above, it is important to be explicit about how the Group and Court learn from the Agency's behavior, which means we must consider how transparency plays out in the model. Throughout, we assume that the Group and Court do not update their beliefs about the state of the world based on the Agency's *exemption* request. Instead, they update based only on the proposed *policy*, which is tantamount to assuming that the exemption request plays out unbeknownst to these players. As is common in games with informational structures like ours, the subsequent effects on off-the-path beliefs have important ramifications for the resulting equilibria. However, our assumption is relatively innocuous, as equilibria qualitatively different from those we consider are only supportable by non-intuitive off-the-path beliefs. We will note these cases explicitly as they arise.

**Neutrality as policy agnosticism.** We also note that our version of a "neutral" Agency, which has no policy preferences at all, is not the only way to model neutrality. Most obviously, a policy-neutral Agency could try to maximize Society's utility. Our neutral Agency is instead motivated by fear of being reversed. Our aim here is to maximize the similarity with previous work in the name of maintaining comparability of the results in terms of the Agency's decisions. This is of particular importance given our more explicit treatment of preferences. But our analysis also focuses on welfare, and the welfare results should be interpreted remembering that we model an "averse-neutral," rather than a "welfarist-neutral," Agency. To consider the question more optimistically, the welfare results that follow should be thought of as a baseline, and welfarist-neutral Agencies may, but certainly are not guaranteed, to be able to generate better outcomes for society.

**Exogeneity of agency competence.** Our Agency's competence, parameterized as  $p$ , is exogenous. That is, the Agency observes the true state of the world at the same rate regardless of the other features

of the model, including its exemption status. But, if the Agency is exempt from notice-and-comment rulemaking, then it could well be that it faces smaller incentives to find out the true state of the world, particularly if it has policy preferences. Suppose we amended the model so that the Agency can now pay a (small) cost for a more accurate signal about the state of the world and that this decision is observable. In the baseline case, the Agency will never pay for more information, as it already is captured and its policy agnosticism makes it indifferent over outcomes. If there are competing groups, then if the Court's costs for denying exempt Agencies are high enough, then the Agency can skirt having to buy more information by opting for exemption. However, if the Court's costs are very low, then the agnostic Agency will not buy additional information, as it again does not care about outcomes; however, the biased Agency will have incentive to work harder. This finding aligns with the extant idea that "neutral competence" is at odds with bureaucrats' incentives ([Gailmard and Patty, 2007](#)). More subtly, if the Court's costs are moderate, then the Agency can purchase additional information in the hopes of making exemption more likely, as the Court has incentive to allow for exemption if it feels comfortable that the new policy is best for Society. Given our assumption that the Court's aim is to maximize societal welfare, this mechanism provides a different motivation for bureaucratic expertise than, say, the legislative motivations explored in detail by [Gailmard and Patty \(2012\)](#). Politicization serves as a necessary, but not sufficient, condition for information acquisition, as institutional arrangements must also incentivize appropriate rewards from the Court.

***Passive groups.*** The Group above acts in response to the Agency's proposed rule. This is in keeping with the spirit of the notice-and-comment process, along with previous theoretical work. Of course, in the real world, interest groups conduct their business continuously, so they do not need to wait for proposals to rouse to action. In the results that follow, in the case of a single group it does not matter whether the Group can pre-commit to some effort level that both provides information to the Agency (potentially deterring or enabling it) and that allows hands to be tied. The Agency will proceed in exactly the same way—specifically, the Group will capture the Agency regardless of the timing of the game. This provides a strong and rather troubling theoretical innovation for classical theories of regulatory capture (see, for example, Section II of [Carpenter and Moss, 2013](#)). When we allow for competing Groups, the results are more mixed. In our model of competing Groups but a neutral Agency, pre-commitment serves as a strategic driver of *Group* behavior. As it stands, our model results in one, and only one, Group expending effort, as the Group whose preferred policy is proposed sees no reason to expend

effort. However, Agency behavior in this context will operate the same way: it will still propose what they think best for Society. These results comport well with existing empirical findings that suggest that issues with one dominant interest group lead to responsive policy but that lobbying on one side does *not* imply lobbying on the other (McKay and Yackee, 2007). Future work would do well to consider not just how professionalized interest groups behave with respect to agencies but, rather, how competition among interests affects regulatory outcomes.

**Static Group competence.** Just as Groups exert effort over time, so too do they accrue information over time, so they do not begin from a zero starting point as each rule is proposed. In the context of the model, this might mean that Groups can pre-commit not to effort for a given rule, but instead to reducing the marginal cost of learning about that rule,  $c$ . This is again important with competing Groups, where there exist many incentives to gain such expertise. For example, a Group would have incentive to gain expertise if the prior on  $s_A$  is such that it thinks its preferred policy is unlikely to be proposed. Regardless of the incentive, reducing  $c$  serves to increase Groups' effort levels, increasing the chances of the true state of the world being revealed. This, in turn, endogenously increases the probability of notice-and-comment rulemaking, as Courts become more likely to reject exemption claims. Again working backwards, if the Agency is sufficiently incompetent, then the proposed rule itself can be affected. What is more, if one Group invests in expertise, then the other Group has incentive to do so as well (in the name of balancing the Agency's incentives), inducing a spiral. As  $c$  is an important and decisive parameter in many of the results to come, we think this is an especially interesting avenue for future work.

**Perfect information of group preferences.** Particularly on technical matters or with interpretative rules, it may not be obvious what an interest group's preferences will be, but our model allows the Agency and the Court to know the Group's preferences perfectly. Our model and extensions allow us to address this easily. The extension with competing Groups is identical to a model with a single Group with private information about whether it prefers  $q$  or  $1$ . If the Agency's prior belief that a Group has a particular preference is strong enough and if the Court's cost for denying exempt Agencies is low enough, then our equilibria will go through unaffected. If the Court's cost is high, however, the Agency will be able to avoid the guesswork of assessing the Group's preferences and instead opt for exemption. Flatter priors on the Group's preferences lead to equilibria similar to our results for competing Groups.

**Information acquisition and shirking.** In our model, if the Group fails to learn the true state of the world, then it may not send an informative signal on to the Court. It is difficult to imagine such

behavior from real-world interest groups. Our modeling choice simplifies matters for the Court, whose policy behavior is relatively automatic. Admittedly, real world Courts do not have such easy decisions to make. That said, we treat the Court as policy-agnostic throughout the analysis, as our primary focus is not on how they make decisions but rather on how agency avoidance interacts with group behavior in notice-and-comment rulemaking. Again, we defer such complications stemming from the Court’s decision—from Group misrepresentation to Court preferences—for later work.

#### 1.4 Results

We study the game’s perfect Bayesian equilibria (henceforth “equilibria”). We will analyze the baseline case working backwards from the Group in the notice-and-comment subgame, as the Court’s policy decision flows automatically given the Agency’s, and possibly Group’s, decisions. Note that, in any equilibrium, the Group will never reveal its signal if it is contrary to its preferred policy, and it will always reveal its signal if it aligns with its preferred policy. If the Agency proposes  $x = 1$  (the Group’s preferred policy), then the Group will be happy to leave well enough alone, exert zero effort, and receive its first best outcome. Conversely, if the Agency proposes  $x = q$  (the Group’s least preferred policy), then there is some incentive for the Group to exert effort. Letting  $\mu \in (0, 1)$  denote the Group’s belief that the Agency received  $s_A = 1$ , observe that the expected utility for a given effort level is

$$EU_G(e_G) = \mu(e_G(p + (1 - p)q) + (1 - e_G)q) + (1 - \mu)(e_G(pq + (1 - p)) + (1 - e_G)q) - \frac{c}{2}e_G^2,$$

yielding an optimal effort level of  $e_G^* = \frac{(1-q)(1-\mu+p(2\mu-1))}{c} > 0$ . This, in turn, means that, if  $x = q$ , the Agency faces a strictly positive probability of being overturned.

Moving up to the Agency’s decision, observe that, regardless of the Court’s strategy on exemption decisions, the highest payoff for applying for exemption is  $-\nu$ . Conversely, if the Agency proposes  $x = 1$  and does not apply for exemption, it receives its first best payoff of zero. Finally, if the Agency proposes  $x = q$  and does not apply for exemption, then (as discussed above) it faces a strictly positive probability of being overturned, which yields a strictly negative expected utility. Thus we conclude:

**PROPOSITION 1:** *In any equilibrium, the Agency proposes  $x = 1$  and never files for an exemption. On the equilibrium path, the Group exerts zero effort; off the path, if  $x = 0$ , the Group exerts positive effort.*

The result obtains because the Group captures the Agency in the sense that it receives its preferred outcome, as the Agency fears its proposed policy possibly being overturned and responds by offering the Group’s favorite policy ( $x = 1$ ) to deter the Group from petitioning the Court. So, even though the Group never acts on the equilibrium path of play, its behavior is decisive in determining the final policy outcome. Importantly, this is because the Court cares not at all about how the outcome is achieved. In an explicit sense, exemption is no more or less costly than is notice-and-comment rulemaking, though the former introduces the possibility of making procedural mistakes regarding the Agency’s exemption. More subtly, exemption bears an implicit cost in that the Court forgoes the potential benefits of notice-and-comment rulemaking. An explicit cost, however, might turn the Agency toward notice-and-comment rulemaking, though this would not change the political outcome.

We complete our analysis of the baseline case by considering societal welfare. Since  $\pi = 1$  in any equilibrium, the analysis is straightforward. To facilitate comparison with later models, we assume for now that  $\lambda = \frac{1}{2}$ . Recall that  $\Pr(\hat{x}_S = 1) = \frac{1}{2}$ , so the three players choose the “correct” policy exactly half of the time. Letting  $\pi^*$  denote the equilibrium outcome, we have  $u_{\hat{x}_S}(\pi^*) = \frac{1+q}{2}$ . As  $q \downarrow 0$ , so that the two policies differ maximally, Society’s utility decreases toward a minimum of  $\frac{1}{2}$ ; as  $q \uparrow 1$ , so that the policies are arbitrarily similar, Society’s utility increases toward a maximum at unity.

In the next two sections, we will relax both of the baseline model’s driving assumptions—the single Group and the agnostic Agency—and compare the results to these austere findings.

## 2 NEUTRAL AGENCY & COMPETING INTEREST GROUPS

The Agency’s policy agnosticism, small positive costs for filing for exemption, and aversion to judicial reversal in the baseline case made it willing to give the lone Group its preferred policy. Now, we consider what happens when the policy-neutral Agency must arbitrate between two Groups with opposing preferences. The Agency’s and Court’s preferences remain unchanged.

The timing and actions for the Groups are the same as in the previous model. We assume that the two groups move simultaneously to exert effort, where Group 1 ( $G_1$ ) has an ideal point at  $\hat{x}_{G_1} = 1$  and

Group 2 ( $G_2$ ) has the ideal point  $\hat{x}_{G_2} = 0$ . The Groups' payoffs, then, are

$$U_{G_1} = u_1(\pi) - \frac{c}{2}e_{G_1}^2,$$

$$U_{G_2} = u_0(\pi) - \frac{c}{2}e_{G_2}^2.$$

We immediately see that competition between Groups changes Agency behavior sharply:

**PROPOSITION 2:** *In the game with a neutral Agency and competing groups, there exists a separating equilibrium in which the Agency chooses  $x = s_A$ . If  $d < \frac{(1-q)^2(1-p)^2}{ch} = d^\circ$ , then the Agency goes through notice and comment. One group exerts positive effort and the other exerts no effort. Otherwise, the Agency applies for an exemption, which the Court always grants.*

That is, the Agency always proposes what it thinks is best for Society—a large contrast from the Agency's behavior in Proposition 1, where  $x = 1$  in all cases. In this separating equilibrium, the only issues with off-path beliefs are if  $d$  is high and the Groups get an opportunity to move, or if  $d$  is low and the Court gets an opportunity to move. After observing the policy choice the players know for certainty the Agency's type, as it is separating in its signal. Thus, it is reasonable to assume that the Court and Groups do not further update after observing the policy choice. But, we should also note that pooling equilibria exist, though maintaining these require nonintuitive off-path beliefs. For example, assume that both types pool on the policy  $x = 1$ . If the other players observe a deviation to policy  $x' = q$ , they must believe that it is now more likely that the Agency received the signal  $s_A = 1$ . However, should a Group discover the true state of the world, the  $s_A = 1$  type believes that it is more likely to get its policy overturned than would the  $s_A = q$  type by deviating to  $x = q$ . As such, the  $s_A = q$  type would have more incentive to deviate from  $x = 1$ , but to maintain the pooling equilibrium the Groups must believe it is now more likely that the  $s_A = 1$  type deviated. Consequently, we focus here on the more natural separating equilibrium.

We have unearthed a condition under which the analyst observes notice-and-comment rulemaking with effort exerted by groups. A glance at  $d^\circ$  provides some simple comparative statics for when notice-and-comment with positive effort is more likely. Specifically, it is more likely as the policies in question become less similar; as the Agency becomes decreasingly competent; as the Court becomes less convinced that the Agency is exempt; and as effort becomes less costly. The first two of these are intuitive,

but the second two are more subtle. First, regarding the Court’s probabilistic understanding of good cause, suppose that the Court became more precisely aware of the Agency’s exemption status, so that  $h$  approached zero or one. As  $h \downarrow 0$  implies  $d^\circ \uparrow \infty$ , the Court always rejects appeals for exemptions when it knows the Agency is not exempt. Consequently, the Agency always goes through notice-and-comment. But since  $h \uparrow 1$  implies  $d^\circ \downarrow \frac{(1-q)^2(1-p)^2}{c}$ , it does not follow that the Court always grants exemption when it knows the Agency is exempt. That is, there exists  $d$  sufficiently small that, even if the Court knows that the Agency is exempt, exemption is rejected to reap the potential societal benefits of notice-and-comment. Second, if the cost for Groups to acquire information is low, then so too will the probability of overturning incorrect propositions be relatively high (more on this in a moment), which in turn means that the Court wants to hear what the Groups have to say. The Agency, which only wants to appeal for exemption when it will be granted, prefers not to attempt to sidestep in this case.

The equilibrium studied here has a “textbook” feel in that Agencies always propose what they think is best for Society. The use of the exemption is similar in that it is used in a way which seemingly benefits Society. If there is relatively little difference between the two policies, then engaging in the costly notice-and-comment process seems wasteful. Perhaps more importantly, if the Agency is relatively good at learning what is best for Society, then it is best to allow its proposals to go through without further hindrance. Indeed, as the Agency approaches perfect competence, Society’s best outcome is guaranteed. To see why, note that  $p \uparrow 1$  implies  $d^\circ \downarrow 0$ , and since  $d > 0$ , the Agency always files for exemption and the Court always grants it. And, since  $p$  is close to 1, the Agency almost always learns the true state of the world, which it always proposes.

Now that notice-and-comment occurs with some positive probability, our analysis of what the Groups do becomes more relevant. Recall that, in the baseline case, the single Group expended effort if the proposed policy was not her preferred one, which only occurred off the equilibrium path. Here we see a similar effort pattern that occurs on the equilibrium path: if  $x = 1$ , then Group 1 exerts no effort and Group 2 exerts positive effort, and the same in reverse if  $x = q$ . Letting  $i$  be the Group that exerts effort, we have  $e_i^* = \min \left\{ \frac{(1-p)(1-q)}{c}, 1 \right\}$ . Again, we glean some comparative results: the relevant Group’s effort level decreases with its marginal cost, policy convergence, and Agency competence. The reader will note that this induces a correlation between appeals for exemption and equilibrium effort levels, as the same conditions that make exemption more likely also reduce the Groups’ equilibrium effort levels. In particular, if the costs of factfinding are high, then exemption becomes more likely and effort goes

down. The same holds for when the policies are similar and when the Agency is competent.

We again turn our attention to societal welfare for the equilibrium, comparing this extended case to the baseline; for comparability, suppose again that  $\lambda = \frac{1}{2}$ . Recall that, in the baseline scenario, Society's expected utility was  $u_{\hat{x}_S}(\pi^*) = \frac{1+q}{2}$ . In the case of competing Groups, Society's utility is contingent on the value of  $d$ . To simplify the welfare analysis, suppose  $d$  is drawn from some continuous distribution  $F_d$ . Letting  $\tilde{e}_i^*$  be Group  $i$ 's effort level when its less preferred policy is proposed, welfare is given by

$$u_{\hat{x}_S}(\pi^*) = [1 - F_d(d^\circ)] [p + (1 - p)q] + F_d(d^\circ) \left[ p + \frac{1-p}{2} (\tilde{e}_1^* + \tilde{e}_2^* + q(2 - \tilde{e}_1^* - \tilde{e}_2^*)) \right].$$

Here the first term represents Society's utility when  $d$  is low enough that rubberstamping obtains, and the second term is Society's utility when  $d$  is high enough that notice-and-comment rulemaking occurs. Two intuitive facts are noteworthy from this result: first, Society strictly prefers competing Groups; and second, Society strictly prefers notice-and-comment rulemaking to rubberstamping. The intuition is simple. Since  $x = s_A$  regardless of whether the Agency files for an exemption or not, Society prefers to have the aggrieved Group overturn an incorrect Agency with some positive probability. Indeed, with low fact-finding costs (resulting in the aggrieved Group almost always expending effort), then Society achieves its first-best outcome. Either the Agency or the contesting Group must be correct about what is best. This welfare result is therefore a validity check for the notice-and-comment procedure.

More broadly, the above extension is an ideal case for notice-and-comment rulemaking. A neutral Agency always proposes what it thinks is best for Society, and Groups that disagree can engage in costly fact-finding to overrule the proposal. The competing Groups are key, as they force the Agency to propose what it thinks is best rather than to pool to avoid the wrath of a single Group. Society benefits because, although rubberstamping still obtains in a non-trivial subset of the parameter space, the resulting outcome is still better than with a single Group. Moreover, notice-and-comment sometimes occurs, and it yields an even better outcome than this improved rubberstamping procedure. Since notice-and-comment is more likely when Courts face low costs for rejecting appeals from exempt Agencies, we can also state that Society benefits from more active Courts.

Our analysis of notice-and-comment rulemaking with competing Groups and a neutral Agency gives reason for optimism about informal rulemaking and its exemptions. However, in the next section, we provide a harder, and potentially more realistic, test of notice-and-comment rulemaking: one where the

Agency cares about outcomes.

### 3 BIASED AGENCY & COMPETING INTEREST GROUPS

Finally, we modify the previous model by endowing the Agency with an ideal point. Without loss of generality, we assume that the Agency favors the policy change ( $\hat{x}_A = 1$ ), meaning that it agrees with Group 1, so that  $U_A = u_1(\pi) - \rho k - \nu a$ . We again impose the restriction on off-path beliefs that if the Agency separates in its actions so that  $\mu = 0$  or  $\mu = 1$ , then the Court and Groups do not update further from off-the-path actions. We also flatten the prior, so  $\lambda = \frac{1}{2}$ . Additionally, we assume that if the Agency pools on a policy choice, then deviating to the other policy results in the Court and Groups maintaining their prior, i.e.  $\mu = \lambda = \frac{1}{2}$ . This maintains the assumption from before that deviating from  $x = i$  to  $x = j$  does not make the Court and Groups believe that it is *less* likely that the Agency's signal was  $s_A = j$ . These assumptions ease the technical analysis. Without them, the qualitative structure of the equilibrium remains essentially unchanged, but new complexities are introduced and the functional forms of the cutpoints become intractable.

This richer environment yields a more subtle set of results:

PROPOSITION 3: Assume  $\lambda = \frac{1}{2}$ . There exists a perfect Bayesian equilibrium characterized as follows: If  $d \geq \frac{(1-q)^2}{4hc} = d'$ , then the Agency pools on  $x = 1$ , applies for an exemption, and it is granted. If  $d < \bar{d}$ , the Agency goes through notice and comment. In this case: if  $k \geq \frac{1}{2p-1}[\frac{c}{1-p} + q - 1] = \bar{k}$ , then the Agency separates based on its signal. If  $k \leq \underline{k} = \frac{2c+q-1}{2p-1}$ , then the Agency pools on  $x = 1$ . If  $k \in (\underline{k}, \bar{k})$ , then the Agency chooses  $x = 1$  if  $s_A = 1$  and if  $s_A = q$  it mixes over  $x = 1$  and  $x = q$ , where the probability of  $x = 1$  is

$$\alpha^* \equiv \frac{(2p-1)(q-1)}{c(k-q) + p(q-1) + q(c - (1-p)(1-q)) + (1-p)(1-q)(pq + (1-k)(1-p))} - 1.$$

The first part of the proposition details a far stronger brand of rubberstamping than that detailed earlier. Not only does the Agency always obtain an exemption, but *it does so while enacting its preferred policy without opposition*. This beneficial state of affairs requires a stricter requirement on the costliness of rejecting exempt Agencies, since  $d' > d^\circ$ . In other words, the Court grants exemptions more often when the Agency is unbiased, as the Court trusts the Agency to propose what is best for Society, it gives

the Agency more freedom.

As with a neutral Agency, the Groups' effort patterns are predictable: if  $x = 1$ , then only Group 2 exerts effort and, if  $x = q$ , then only Group 1 exerts effort. This result is identical to that in the case of the neutral Agency. However, it is no longer the case that the Groups expend the same amount of effort conditional on expending effort in the first place—in particular, the two Groups would expend different effort levels in the semi-separating case. This is because of the Agency's potential for bluffing. Simply put, if the Agency proposes  $x = 1$ , then Group 2—the aggrieved Group—knows that there is some chance that the Agency really received  $s_A = q$ , which affects their updated beliefs upon observing the proposal. This, in turn, makes the equilibrium effort levels diverge.

Taking comparative statics on  $d'$  provides conditions under which the Agency is more likely to achieve its preferred policy without opposition. It is clear that rubberstamping becomes more likely as the policies grow more similar, as the Court believes the Agency is exempt, and as the Groups' marginal costs increase. These are all in line with the analysis of an unbiased Agency with competing Groups. But more interestingly, the likelihood of rubberstamping is *not* a function of the Agency's competence. Since the Agency pools on  $x = 1$  regardless of its signal, neither the Court nor the Groups concern themselves with the probability that the Agency has learned the true state of the world.

Analogous to our earlier analysis, the rubberstamping result obtains out of the Court's reflex-like response: if the costs of rejecting an exempt Agency's claim are too high, then rubberstamping holds. This is shown in the right-half of Figure 1, which graphically illustrates our equilibrium outcomes.

However, now that we have a biased Agency, the strategic environment when rubberstamping does *not* obtain is richer, as is evidenced by the rest of Proposition 3. Indeed, depending on the Agency's costs of being overturned, which now represent a weight between her policy preferences and her procedural preferences, we have three possible outcomes. First, and most intuitively, if the Agency faces stiff procedural costs, that is, if  $k \geq \bar{k}$ , then it separates depending on its signal about the state of the world, just as it did in the case of a neutral Agency. This is shown by the upper-left part of Figure 1. With competing Groups, there remains the possibility of Group 2 engaging in factfinding that can prove the Agency wrong. This possibility deters the Agency from attempting to enact its preferred policy and forces it to do what it thinks is best for Society. Since it believes that its proposal is more likely to be the correct one than not, the Agency does not have much to fear in terms of the threat of being overruled.

Conversely, if the Agency does not mind being overturned very much relative to her policy preferences—

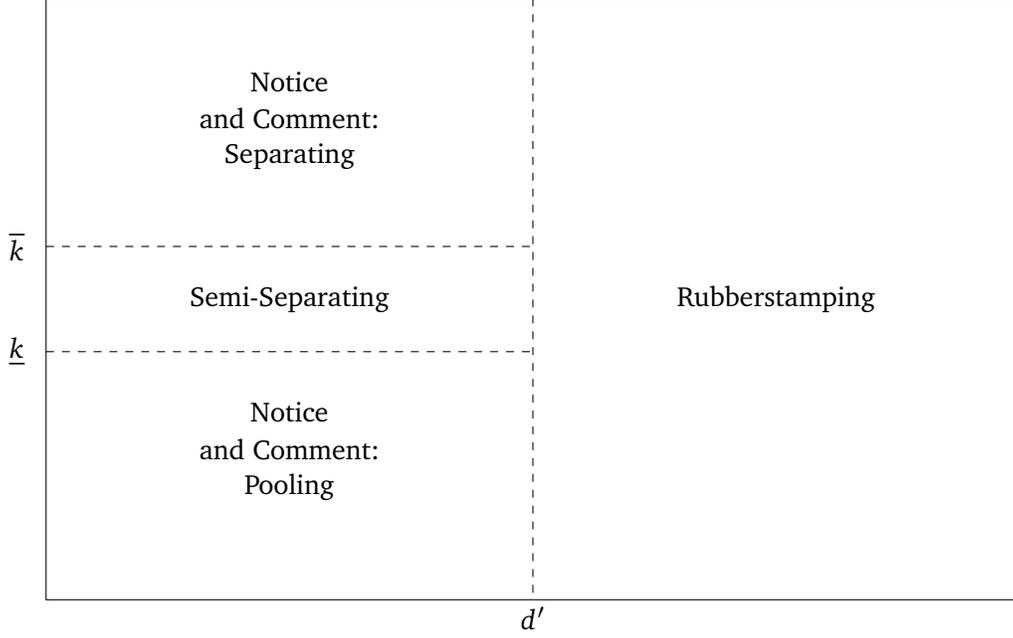


Figure 1: Equilibrium for the case with a biased Agency and competing Groups.

that is, if  $k \leq \underline{k}$ —then it attempts to push its preferred policy through.<sup>20</sup> This is a pooling equilibrium (as is shown in the bottom left of Figure 1), as the Agency always proposes its preferred policy, regardless of the signal. Here the Agency’s low procedural costs for being overturned allow it to be somewhat cavalier regarding the notice-and-comment procedure. Though Group 2 may still find that the true state of the world is  $\hat{x}_S = q$  instead of  $\hat{x}_S = 1$ , it is worth taking the risk.

Finally, moderate costs force the Agency to behave in a more nuanced way. If  $k \in (\underline{k}, \bar{k})$ , the Agency faces real tradeoffs. As expected, if it receives  $s_A = 1$ , it proposes  $x = 1$ . However, if it receives  $s_A = q$ , it can still try to obtain  $x = 1$ . In other words, the Agency can bluff as, since its costs for being overturned are intermediate, the resulting equilibrium is semi-separating (as represented by the middle left section in Figure 1). With higher costs, it always proposes what it thinks is best for Society, whereas with lower costs, it always tries to get its preferred policy through. This bluff is a function of several inputs. Most intuitively, if the Groups must pay high costs to acquire information (thus decreasing equilibrium effort for aggrieved Groups), then the Agency bluffs more aggressively. Formally,

$$\frac{\partial \alpha^*}{\partial c} = \frac{k(2p-1)(1-q)}{[c(k-q) + p(q-1) + q(c - (1-p)(1-q)) + (1-p)(1-q)(pq + (1-k)(1-p))]^2},$$

<sup>20</sup>It is easy to verify that  $\bar{k} \geq \underline{k}$ .

which is always positive. So, on issues where fact-finding is costly—say, for technical matters—the Agency is more likely to try to enact its preferred policy even when it is not best for Society, as it is less likely to be proven wrong.

These results provide an even more nuanced set of results relating the frequency of notice-and-comment rulemaking and the amount of effort Groups exert. When the costs of fact-finding are high, the relevant Group exerts relatively little effort. Meanwhile, increased costs make the pleasant separating equilibrium less likely to obtain. Instead, both pooling and semi-separating equilibria dominate on such issues. What is more, the semi-separating region features more aggressive bluffing on the Agency's part. So, on technical matters with high  $c$  terms, we learn that two phenomena are more likely when effort is low: first, that notice-and-comment rulemaking is less likely altogether, and second, that notice-and-comment rulemaking is more likely to include proposals that align with the Agency's political goals.

Just as with the  $d$  cutpoint, it is useful to consider the comparative statics generated from these cutpoints on the Agency's procedural costs. Unsurprisingly, both cutpoints  $\underline{k}$  and  $\bar{k}$  increase as the two considered policies grow more similar. In other words, if policies are not too different, then the separating equilibrium where the Agency proposes what it thinks is best for Society is contingent. Also, Agency competence plays a role even though it is not directly related to many of the dynamics. If the Agency is sufficiently competent or the Groups' marginal costs are sufficiently low, then more competence empowers the Agency to try the semi-separating or pooling options (which it prefers from a policy standpoint). These results suggest that the effects of Agency competence are themselves contingent on structural factors like the difference between the policies and the Groups' marginal costs of fact-finding.

As before, we complete our analysis by studying the equilibrium's welfare properties. As the expression of Society's utility in this case is cumbersome (interested readers may verify this in the Appendix) we keep the analysis informal. Here we cannot make the strong claims like those obtained for the previous two models. In the rubberstamping case, Society obtains a benefit equal to that from the baseline model, as the result is again always  $\pi^* = 1$ . In the case where the Agency pools on  $x = 1$  but notice-and-comment is allowed to proceed, Group 2 sometimes learns the true state of the world, which increases Society's welfare. And, in the case where high procedural costs compel the Agency to propose the policy it believes to be best for Society, there remains the safety net of the aggrieved Group, who sometimes finds that the Agency is in error.

We cannot say anything definite, however, because of the semi-separating case, where the Agency's

behavior ensures that  $\pi = 1$  more often than Society would prefer. Since  $q < 1$  (so that the two policy alternatives are different from one another) and  $p < 1$  (so that the Agency isn't perfectly competent), the parameter space that yields the semi-separating behavior has strictly positive measure. Indeed, observe that

$$\bar{k} - \underline{k} = \frac{c}{1-p},$$

implying that the potentially suboptimal outcome is more likely as the costs of fact finding—and Agency competence—increase. Note that

$$\begin{aligned} \frac{\partial \bar{k}}{\partial p} &= \frac{2 \left(1 - \frac{c}{1-p} - q\right)}{(2p-1)^2} + \frac{c}{(2p-1)(p-1)^2}, \\ \frac{\partial \underline{k}}{\partial p} &= \frac{2(1-2c-q)}{(2p-1)^2}. \end{aligned}$$

For  $c$  sufficiently large, the top expression is positive and the bottom expression is negative, so both of the area's frontiers expand as the Agency becomes more competent. Given that this result is endogenous and arises only in the case of a biased agency, it is a kind of re-derivation of the classic problem of delegation (e.g. [Epstein and O'Halloran, 1999](#)) in a very different political circumstance than that ordinarily described. Indeed, the chance for skilled, biased agencies to circumvent notice-and-comment rulemaking at Society's potential detriment is one reason many have called for adjustment to this rulemaking procedure.

## 4 DISCUSSION & CONCLUSION

Understanding the structure and impacts of the rulemaking process has been a continuous subject of interest to social scientists, legal scholars, and policy analysts. To date, most attention has focused on notice-and-comment per se. However, our analysis demonstrates that ignoring an agency's ability to employ the exemption option strategically will obfuscate inferences about how rulemaking should impact outcomes and social welfare.

As we show, in a very simple form of theoretical analysis (our baseline model), we would not even expect to see notice-and-comment, but merely rubberstamping consistent with traditional notions of

group capture that go back at least as far as [Huntington \(1952\)](#) and which have modest social welfare implications (in that half the time we realize the right result).<sup>21</sup> However, while this structure might correspond with some real world situations, it is likely not generally applicable. When we construct more realistic models, with first competing groups—along the lines of virtually all major actions in the contemporary regulatory world—and agencies with their own policy preferences—which would seem to hold for a considerable variety of bureaucratic organizations—we find notice-and-comment occurring, organizations not simply dominating, and various factors influencing when exemption is successfully used, what kind of policy outcomes occur, and how social welfare is impacted.

For example, with only competing groups (and an agnostic agency, which may be seen as best characterizing bureaucracies that attract those without strong intrinsic policy motivations), the Court's cost of rejecting exemptions and beliefs about whether a proposal is legitimately exempt, differences in policy choices, agency competence, and costs of group efforts all are relevant in sensible ways. Furthermore, as in the real world, when exemptions are requested they should rarely be rejected by judges. We also witness a dynamic, similar to that found in the lobbying literature (e.g. [Austen-Smith and Wright, 1994](#); [Solovej and Collins, 2009](#)), where groups that would otherwise lose out are more likely to engage in efforts to change outcomes. Social welfare also improves *vis-à-vis* the baseline case, and notice-and-comment generally is preferable to its exemption by an agency with judicial acquiescence.

Interestingly, when we build in agency preferences, we get what seems, *prima facie*, a very strong result: The agency can quietly rubberstamp its own policy preference by using the exemption process if the court has a sufficiently high cost of rejection. However, there are limits to the likelihood of this happening, again in sensible ways, with respect to whether the court believes a proposal is legitimately exempt, agency bias (although, strikingly, competence is irrelevant), differences in policy choices, and costs of group efforts. There is also a more subtle, but generally intuitive, dance that the agency plays in trying to push its own policy through in light of group opposition, which is itself a function of organizational costs of acting, assessment of alternative policies, and differences in the policies involved. We also continue to see the rulemaking analogue of counteractive lobbying, by which the group which would otherwise be unhappy with the outcome is more apt to push back. From a social welfare perspective, we find that agencies may, indeed, be able to use the exemption option to reduce societal well-being in

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<sup>21</sup>Of course, in traditional discussions of capture, it is implicitly thought that social welfare is virtually never maximized for any given policy choice.

favor of achieving their preferred policy outcomes.

In short, from a theoretical point of view, our analysis indicates that, under a reasonable set of assumptions, agencies might be able to use the exemption process for more than mere cost minimization of rulemaking but, rather, to achieve policy outcomes that may reduce social welfare via rubberstamping. It also demonstrates that if exemptions can be limited to rules that are truly interpretative (as compared to even cases where policy differences between proposals are small), then notice-and-comment will otherwise produce better results and the cost-saving advantages of the exemption will be realized. In the same spirit, our analysis shows that a world where agencies would face stiff costs for inappropriately using the exemption and courts would incur a modest price for overturning an exemption request would produce a socially better set of outcomes.

Our results also suggest that not all avoidance, nor all informal rulemaking, is the same. With competing groups, our unbiased agency avoids informal rulemaking to preclude the possibility of being proven wrong downstream. Still, it always proposes what it thinks is best for society, and informal rulemaking serves as a second chance to learn the true state of the world by an incentivized interest group. Conversely, our biased agency avoids informal rulemaking to ensure that its preferred policy is enacted. Unless it pays high procedural costs for being overturned, it can still attempt to push its policy through even with informal rulemaking. Without considering the proposed rule and the exemption decision simultaneously, the analyst runs the risk of conflating policy-neutral and policy-laden avoidance. This again harkens back to our motivating discussion: it could well be that Treasury's avoidance when advancing new tax interpretations is indeed qualitatively different from the EPA's and OSHA's avoidance in the face of stiffer guidelines with antagonistic oversight. We should expect, then, to see different avoidance patterns across levels of agency politicization, which remains a lively area of measurement and research ([Clinton and Lewis, 2008](#)).

In the most general sense, our theoretical investigation highlights how those interested in rulemaking should consider the entire process, with special emphasis on the incentives facing the key players. In this vein, a logical extension of our analysis would be to build in judicial preferences in a manner analogous to how we did so for agencies.

Finally, our results have important empirical implications, both regarding when exemptions will be used and approved and, given an agency opts for notice-and-comment over an exemption request, what factors condition what we should observe (e.g., whether and which groups will oppose a proposed rule).

Also, our findings indicate that we might witness very different patterns if we are to look at relatively less politicized agencies versus those that seemingly push their own political agendas, as the former would conform more closely to our model with neutral agencies and the latter to our model where agencies are pursuing policy preferences.

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## A APPENDIX

We begin with two useful lemmata that apply to each of the models we consider. We invoke these freely when the analyses below arrive at Group behavior.

LEMMA 1: *It is always a best response for a Group to conceal its signal if the signal goes against its preferred policy and to reveal the signal if it supports its preferred policy.*

PROOF: If Group 1 gets the signal  $s_{G_1} = 1$ , revealing this gives the Group its highest possible policy. If  $x = 1$ , its payoff is the same as before and, if  $x = q$ , this increases its payoff, so it is optimal to reveal the signal. If Group 1 gets the signal  $s_{G_1} = q$ , revealing it gives the Group its lowest possible policy payoff. If  $x = 1$ , the Group's payoff decreases and, if  $x = q$ , its payoff remains the same, so not revealing the signal is always optimal. The proof for Group 2 is similar.  $\square$

LEMMA 2: *Let  $\mu$  be the Groups' updated beliefs that the Agency received the signal  $s_A = 1$  after observing the Agency's actions. Let  $e_{G_i}^*(x)$  be Group  $i$ 's optimal effort in the notice-and-comment phase if policy  $x$  is proposed. In any equilibrium, given belief  $\mu$ , each group exerts the following effort given a policy:*

$$\begin{aligned} e_{G_1}^*(x = 1) &= 0, \\ e_{G_1}^*(x = q) &= \frac{(1 - q)(1 - \mu + p(2\mu - 1))}{c}, \\ e_{G_2}^*(x = 1) &= \frac{(1 - q)((1 - p)\mu + (1 - \mu)p)}{c}, \\ e_{G_2}^*(x = q) &= 0. \end{aligned}$$

PROOF: Consider Group 1's problem following  $x = 1$ . If the Group discovers information opposing the policy, then it does not reveal its signal and so its action does not influence the final outcome. If it discovers information supporting the policy, it reveals its signal and the same policy remains in place; however, the policy would have remained in place anyway. As such, regardless of its signal, it does not influence the final outcome, so exerting effort is costly but does not otherwise change its expected utility. Thus,  $e_{G_1}^*(x = 1) = 0$ . A similar argument shows that if  $x = q$  then it is optimal for Group 2 to exert no effort.

If  $x = q$ , Group 1's expected utility of exerting effort is given by

$$\mu(e_{G_1}(p + (1-p)q) + (1 - e_{G_1})q) + (1 - \mu)(e_{G_1}(pq + (1-p)) + (1 - e_{G_1})q) - \frac{c}{2}e_{G_1}^2,$$

and maximization yields a unique optimal effort  $e_{G_1}^*(x = q) = \frac{(1-q)(1-\mu+p(2\mu-1))}{c}$ .

Likewise, if  $x = 1$ , then Group 2's expected utility for exerting effort is

$$\mu(e_{G_2}((1-p)(1-q))) + (1 - \mu)(e_{G_2}(p(1-q))) - \frac{c}{2}e_{G_2}^2,$$

and maximizing with respect to  $e_{G_2}$  yields  $e_{G_2}^*(x = 1) = \frac{(1-q)((1-p)\mu+(1-\mu)p)}{c}$ . □

### A.1 Proof of Proposition 2

According to the proposition the Agency separates and chooses its policy so that  $x^* = s_A$ . If  $d \geq d^\circ$  it applies for an exemption. Otherwise, it goes through notice-and-comment.

As the Agency separates following its signal and  $x = q$ . we have that  $\mu = 0$ . Using Lemma 2 and substituting in  $\mu = 0$ , we have  $e_{G_1}^*(x = q) = \frac{(1-q)(1-p)}{c} > 0$ . Additionally, if  $x = 1$ , we have that  $\mu = 1$ , and  $e_{G_2}^*(x = 1) = \frac{(1-q)(1-p)}{c}$ .

If the Agency petitions the Court for an exemption from the notice-and-comment process, then the Court's expected utilities of granting the exemption, or not, after observing choice  $x = i \in \{q, 1\}$  are

$$EU_C(y = 1|x = i) = p + (1-p)q,$$

$$EU_C(y = 0|x = i) = e_{G_j}^*(x) + (1 - e_{G_j}^*(x))(p + (1-p)q) - hd,$$

where  $j$  represents the Group that least prefers policy  $i$ .

Comparing terms we see that the Court will grant an exemption if:

$$d \geq \frac{(1-p)^2(1-q)^2}{hc},$$

as required.

Finally, we must show that the Agency's strategy is optimal. The Agency's strategy depends on its signal  $s_A$ . To complete the proof, we check that the Agency does not want to deviate for each relevant

area of the parameter space.

1.  $d \geq d^\circ$ .

In this case the Court grants the exemption, and so

$$EU_A(x = 1, a = E | s_A = 1) = -\nu,$$

$$EU_A(x = q, a = E | s_A = q) = -\nu.$$

As  $\frac{1}{2} \leq p < 1$  and one Group always exerts positive effort, if the Agency does not apply for the exemption this always leads to a positive probability of incurring the cost  $k$ . Thus, for  $\nu$  sufficiently small playing the given strategy gives the Agency its highest payoff following each signal. Therefore, the Agency does not have a profitable deviation.

2.  $d < d^\circ$ .

Here the Court does not grant an exemption and the Agency's expected payoff from choosing  $(x, E)$  and having its exemption application denied is the same as not apply for an exemption at all,  $(x, N)$ , minus the additional small cost  $\nu$ . Thus, if the Agency knows its request will be denied it strictly prefers to not apply. To finish the proof, we only need to show that, for each signal, the Agency does not want to deviate and choose a different policy. We check deviations for the Agency after it gets the signal,  $s_A = i$ .

$$EU(x = 1, a = N | s_A = i) = -e_{G_j}^*(i) \times (1 - p)k,$$

$$EU(x = q, a = N | s_A = i) = -e_{G_i}^*(j) \times pk.$$

Therefore, the Agency will not want to deviate from choosing  $(x, a) = (1, N)$  if

$$\begin{aligned} \frac{-(1-p)^2(1-q)k}{c} &\geq \frac{-p(1-p)(1-q)k}{c} \\ &\Leftrightarrow p \geq 1-p. \end{aligned}$$

This condition always holds, as we've assumed  $p \geq \frac{1}{2}$ .

We conclude that the strategies and beliefs as specified constitute an equilibrium.

## A.2 Proof of Proposition 3

Lemmata 1 and 2 characterize the actions of the Groups. If the Agency petitions the Court for an exemption from the notice-and-comment process the Agency pools on  $x = 1$ . The Court's expected utilities of granting the exemption (or not) after observing  $x = 1$  are

$$\begin{aligned} EU_C(y = 1|x = 1) &= \frac{1}{2}(p + (1 - p)q) + (1 - \frac{1}{2})(pq + 1 - p), \\ EU_C(y = 0|x = 1) &= e_{G_2}^*(x = 1) + (1 - e_{G_2}^*(x = 1))EU_C(y = 1|x = 1) - hd. \end{aligned}$$

Using Lemma 2 and substituting  $\mu = \frac{1}{2}$ —as the Agency is pooling—we can compare the above expected utilities and show that the Court grants the exemption if

$$d \geq \frac{(1 - q)^2}{4hc}. \quad (1)$$

There cannot exist an equilibrium in which the Agency separates and is granted an exemption following either policy choice. To see this, assume one exists. But following the signal  $s_A = q$  the Agency can profitably deviate to  $x = 1$ , be granted an exemption, and get its preferred policy.

There also does not exist an equilibrium featuring exemption, with reasonable off-path beliefs, in which the Agency pools on  $q$ . This is because  $\lambda = 1/2$  and so the Court's standard for allowing the exemption following  $x = q$  is equivalent to its standard following  $x = 1$ . Thus, as long as the Court's beliefs following a deviation to  $x = 1$  do not lead it to believe that the Agency is less likely to have received the signal  $s_A = 1$ , which we've assumed as  $\mu = \lambda$ , then the Agency could deviate to its preferred policy and be granted an exemption.

Finally, we must show that the Agency's strategy is optimal. The Agency's strategy depends on its signal  $s_A$ . There are four alternatives.

1.  $d \geq d'$ . For either signal the Agency chooses  $x = 1$ . Since  $d \geq d'$ , the Court will grant an exemption if the Agency applies for one. Therefore, we have that  $EU_A(x = 1, a = E|s_A) = 1 - v$ . As this is the Agency's highest possible policy payoff, if it deviates it can do no better in terms of policy payoffs. Additionally, deviating results in a positive probability of incurring the cost  $k$ , as

such, for sufficiently small but strictly positive  $\nu$ , that the Agency cannot do better by deviating.

2.  $d < d'$  and  $k \geq \bar{k}$ . Since  $d < d'$  the Court will reject any application for an exemption, regardless of the Agency's policy choice. So we have that  $EU_A(x, E|s_A) = EU_A(x, N|s_A) - \nu < EU_A(x, N|s_A)$  for  $x \in \{q, 1\}$ . Therefore, we need to check that: (a) if  $s_A = 1$ , then the Agency does not want to deviate from  $(1, N)$  to  $(q, N)$ ; and (b) if  $s_A = q$ , then the Agency does not want to deviate from  $(q, N)$  to  $(1, N)$ .

For (a), the Agency's expected utilities for  $(1, N)$  and  $(q, N)$  are given by

$$\begin{aligned} EU_A(1, N|s_A = 1) &= e_{G_2}^*(1)(p + (1-p)(q-k)) + (1 - e_{G_2}^*(1)), \\ EU_A(q, N|s_A = 1) &= e_{G_1}^*(q)(p(1-k) + (1-p)(q)) + (1 - e_{G_1}^*(q))q. \end{aligned}$$

For the Agency to not want to deviate, it must be that

$$EU_A(1, N|s_A = 1) \geq EU_A(q, N|s_A = 1). \quad (2)$$

Using Lemma 2 and the assumptions about beliefs have that  $e_{G_1}^*(q) = e_{G_2}^*(1) = e^*$ . Thus, Condition (2) will hold if:

$$e^*(p - p(1-k) + (1-p)(q-k) - (1-p)q) + (1 - e^*)(1-q) \geq 0.$$

Simplifying yields

$$(2p-1)e^*k + (1-e^*)(1-q) \geq 0.$$

As  $p \geq \frac{1}{2}$  and  $e^* \in [0, 1]$ , Condition (2) holds, as required.

For (b), the Agency's expected utilities for  $(1, N)$  and  $(q, N)$  are given by

$$\begin{aligned} EU_A(1, N) &= e_{G_2}^*(1)(p(q-k) + (1-p)) + (1 - e_{G_2}^*(1)), \\ EU_A(q, N) &= e_{G_1}^*(q)(pq + (1-p)(1-k)) + (1 - e_{G_1}^*(q))q. \end{aligned}$$

For the Agency to not want to deviate, it must be that

$$EU_A(1, N | s_A = q) \leq EU_A(q, N | s_A = q). \quad (3)$$

Again using Lemma 2 and beliefs we have that  $e_{G_1}^*(q) = e_{G_2}^*(1) = e^*$ . Thus, Condition (3) holds if:

$$e^*(p(q - k) - pq + (1 - p) - (1 - p)(1 - k)) + (1 - e^*)(1 - q) \leq 0.$$

Substituting for  $e^*$  and simplifying yields

$$k \geq \frac{1}{2p - 1} \left[ \frac{c}{1 - p} - (1 - q) \right] = \bar{k}.$$

Since  $k \geq \bar{k}$  in this case, Condition (3) holds, as required.

3.  $d < \bar{d}$  and  $k < \underline{k}$ . Since  $d < \bar{d}$ , the Court will reject any application for an exemption, regardless of the Agency's policy choice. So we have that  $EU_A(x, E) = EU_A(x, N)$  for  $x \in \{q, 1\}$ . Therefore, we must check that, for any  $s_A \in \{1, q\}$ , the Agency chooses  $x = 1$ . We consider each signal in turn.

If  $s_A = 1$ , the Agency's expected utilities are

$$EU_A(1, N | s_A = 1) = e_{G_2}^*(1)(p + (1 - p)(q - k)) + (1 - e_{G_2}^*(1)),$$

$$EU_A(q, N | s_A = 1) = e_{G_1}^*(q)(p(1 - k) + (1 - p)(q)) + (1 - e_{G_1}^*(q))q.$$

For the Agency to not want to deviate, it must be that

$$EU_A(1, N | s_A = 1) \geq EU_A(q, N | s_A = 1). \quad (4)$$

Again we have that  $e_{G_2}^*(1) = e^*$ . Thus, Condition (4) holds if:

$$e^*(p - p(1 - k) + (1 - p)(q - k) - (1 - p)q) + (1 - e^*)(1 - q) \geq 0.$$

Simplifying,

$$(2p - 1)e^*k + (1 - e^*)(1 - q) \geq 0.$$

As  $p \geq \frac{1}{2}$  and  $e^* \in [0, 1]$ , Condition (4) holds, as required.

If  $s_A = q$ , the Agency's expected utilities are

$$\begin{aligned} EU_A(1, N | s_A = q) &= e_{G_2}^*(1)(p(q - k) + (1 - p)) + (1 - e_{G_2}^*(1)), \\ EU_A(q, N | s_A = q) &= e_{G_1}^*(q)(pq + (1 - p)(1 - k)) + (1 - e_{G_1}^*(q))q. \end{aligned}$$

For the Agency to not want to deviate, it must be that

$$EU_A(1, N | s_A = q) \leq EU_A(q, N | s_A = q). \quad (5)$$

Again  $e_{G_1}^*(q) = e_{G_2}^*(1) = e^*$ . Thus, Condition (5) holds if:

$$e^*(p(q - k) - pq + (1 - p) - (1 - p)(1 - k)) + (1 - e^*)(1 - q) \leq 0$$

Substituting for  $e^*$  and simplifying,

$$k \leq \frac{2c + q - 1}{2p - 1} = \underline{k}.$$

As  $k < \underline{k}$  in this case, we have that Condition (5) holds, so the Agency will not deviate from  $x = 1$  and  $a = N$ , as required.

4.  $d < d'$  and  $k \in (\underline{k}, \bar{k})$ . In this case, after  $s_A = 1$  the Agency chooses  $x = 1$  and after  $s_A = q$  the Agency chooses  $x = 1$  with probability  $\alpha^*$  and  $x = q$  with probability  $1 - \alpha^*$ . Examining the

Groups' optimal effort, we have:

$$\begin{aligned}
e_{G_1}^*(1) &= 0, \\
e_{G_1}^*(q) &= \frac{(1-p)(1-q)}{c}, \\
e_{G_2}^*(1) &= \frac{(1 - \frac{p+\alpha^*(1-p)}{1+\alpha^*})(1-q)}{c}, \\
e_{G_2}^*(q) &= 0.
\end{aligned}$$

To define  $\alpha^*$ , we first define two other quantities:

$$\begin{aligned}
\delta &\equiv \frac{(1-p)(1-q)}{c}(pq + (1-p)(1-k)) + \left(1 - \frac{(1-p)(1-q)}{c}\right)q, \\
B &\equiv \frac{c}{1-q}(\delta + k - q).
\end{aligned}$$

From here we can define  $\alpha^*$  as

$$\alpha^* \equiv \frac{1-B-p}{B-p}.$$

which reduces to

$$\frac{(2p-1)(q-1)}{c(k-q) + p(q-1) + q(c - (1-p)(1-q)) + (1-p)(1-q)(pq + (1-k)(1-p))} - 1.$$

First, we show that if  $s_A = q$ , then the Agency is willing to mix and play  $(1, N)$  with probability  $\alpha^*$  and  $(q, N)$  with probability  $1 - \alpha^*$ . Again, the relevant expected utilities are

$$\begin{aligned}
EU_A(1, N|s_A = q) &= e_{G_2}^*(1)(p(q-k) + (1-p)) + (1 - e_{G_2}^*(1)), \\
EU_A(q, N|s_A = q) &= e_{G_1}^*(q)(pq + (1-p)(1-k)) + (1 - e_{G_1}^*(q))q.
\end{aligned}$$

For the Agency to mix, it must be that

$$EU_A(q, N|s_A = q) = EU_A(1, N|s_A = q), \tag{6}$$

which, using our notation, can be rewritten as

$$\delta = EU_A(1, N | s_A = q).$$

Substituting and eliminating terms yields

$$e_{G_2}^*(1) = \delta + k - q.$$

Substituting for  $e_{G_2}^*(1, N)$  and rearranging yields

$$1 - \frac{c}{1-q}(\delta + k - q) = \frac{p + \alpha^*(1-p)}{1 + \alpha^*}.$$

Taking advantage of our notation, we can rewrite the above equality as

$$1 - B = \frac{p + \alpha^*(1-p)}{1 + \alpha^*}.$$

Rearranging again gives us that Condition (6) holds if and only if

$$\alpha^* = \frac{1 - B - p}{B - p},$$

which holds by definition. Therefore, given the behavior of the Groups, the Agency is indifferent between choosing  $(1, N)$  and  $(q, N)$ . As such, it can mix with any probability and we choose that probability to be  $\alpha^*$  (this then induces the necessary effort level from the second Group, which avoids mixing due to its continuous strategy set).

Next, we show that if  $s_A = 1$ , then the Agency prefers to choose  $x = 1$  to  $x = q$ . Its expected utilities are

$$EU_A(1, N | s_A = 1) = e_{G_2}^*(1)(p + (1-p)(q-k)) + (1 - e_{G_2}^*(1)),$$

$$EU_A(q, N | s_A = 1) = e_{G_1}^*(q)(p(1-k) + (1-p)(q)) + (1 - e_{G_1}^*(q))q.$$

For the Agency to not want to deviate, it must be that

$$EU_A(1, N|s_A = 1) \geq EU_A(q, N|s_A = 1). \quad (7)$$

Note that  $EU_A(1, N|s_A = 1)$  is a convex combination of  $p(1) + (1-p)(q-k)$  and 1, while  $EU_A(q, N|s_A = 1)$  is a convex combination of  $p(1-k) + (1-p)q$  and  $q$ . Clearly, 1 is greater than or equal to both potential payoffs in  $EU_A(q, N|s_A = 1)$ . Therefore, a sufficient condition for Condition (7) to hold is that  $p + (1-p)(q-k) \geq p(1-k) + (1-p)q$  and  $p + (1-p)(q-k) \geq q$ . The first inequality reduces to  $p \geq \frac{1}{2}$ , which holds by assumption of  $p \geq \bar{p}$ . The second inequality reduces to  $p \geq \frac{k}{1+k-q}$ , which again holds by assumption of  $p \geq \bar{p}$ . Therefore, following  $s_A = 1$ , the Agency does not want to deviate from its given strategy.

Since, given the above beliefs, no player wants to deviate from their strategy, we have an equilibrium.

For the welfare analysis, let  $F_d$  be the distribution of  $d$ ,  $\tilde{e}_i^*$  be Group  $i$ 's effort level when its less preferred policy is proposed, and  $F_k$  be the distribution of  $k$ . Then, Society's utility is given by

$$\begin{aligned} u_{\hat{x}_s}(\pi^*) = & [1 - F_d(d')] \left[ \frac{1+q}{2} \right] \\ & + F_d(d') \left[ F_k(\underline{k}) \left( \frac{1 + \tilde{e}_2^* + (1 - \tilde{e}_2^*)q}{2} \right) \right. \\ & + \left[ F_k(\bar{k}) - F_k(\underline{k}) \right] \Theta \\ & \left. + \left[ 1 - F_k(\bar{k}) \right] \left[ p + \frac{1-p}{2} (\tilde{e}_1^* + \tilde{e}_2^* + q(2 - \tilde{e}_1^* - \tilde{e}_2^*)) \right] \right], \end{aligned}$$

where

$$\Theta = \left[ \frac{p(1 + \alpha^*(\tilde{e}_2^* + (1 - \tilde{e}_2^*)q) + (1 - \alpha^*)) + (1-p)(\alpha^* + (1 - \alpha^*)(\tilde{e}_1^* + (1 - \tilde{e}_1^*)q) + \tilde{e}_2^* + (1 - \tilde{e}_2^*)q)}{2} \right].$$