Strategic Avoidance and Rulemaking Procedures

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Abstract

Informal, "notice-and-comment," rulemaking is the prototypical mechanism employed by U.S. regulators. However, agencies frequently claim their actions exempt from the process, and courts typically agree. Agencies thus face an important strategic choice between informal rulemaking and avoidance, a decision with potential implications not fully assessed by social scientists. To examine this choice's implications, we specify a theoretical model of rulemaking with possible exemption, empirically analyze agency choices regarding avoidance, and assess welfare implications. Theoretically, a well-meaning court's costs of demanding notice-and-comment and an agency's costs and policy bias are relevant to whether we observe avoidance being used, even when it allows the agency to implement a policy at society's expense when legally inappropriate. Empirically, our model's predictions are borne out, particularly assuming agencies view notice-and-comment as a costly process. As for social welfare, while the exemption option's existence and successful equilibrium use by agencies may substantially impact welfare, there are countervailing forces that condition whether or not we are better-off with the avoidance option available. Considering notice-and-comment while ignoring avoidance can lead to incomplete and incorrect understandings of how agencies, judges, and organizations interact and impact policy and welfare.

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1 INTRODUCTION

The Administrative Procedure Act's (APA) 1946 enactment constituted a watershed moment in the American bureaucracy's development, ushering in the administrative rulemaking era. 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"[1] established a number of stipulations for agency establishment of 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 (in reality, including many special interests) may provide commentary; and, ultimately, the agency promulgates its final rule after accounting for the comments. Subsequently, societal interests (typically those active in the comment process) may appeal the rule to the federal courts, which consider the agency's internal analysis, along with the public comments and the agency's reaction.

Proponents in the legal tradition highlight notice-and-comment's benefits, including those stemming from its public deliberation provisions (e.g., Seidenfeld, 1992), delivery of important technical information to the public (e.g., Posner, 1997), and enhancement of agency accountability (e.g., Strauss, 1996). Social scientists analyzing the APA's consequences maintain that notice-and-comment provides politicians with valuable time to allow for bargaining and to help ensure long-term solutions corresponding to their political preferences (McCubbins, Noll and Weingast, 1987, 1989).

Of course, even if these benefits are uncritically accepted they are acknowledged to come at the price of governmental efficiency. As the Administrative Conference of the United States put it in its 1992 round of APA recommendations, agency costs from notice-and-comment could include "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."[2] Almost all would agree that, at least in some instances, these costs are substantial, e.g., the process sometimes drags on for years and even across presidential administrations.

Given the costs, and despite the potential benefits, agencies may be incentivized to en-

[1]Floor speech by Senator Pat McCarran, Chairman of the Senate Judiciary Committee, March 12, 1946. Many scholars agreed, e.g., administrative law pioneer Kenneth Culp Davis called informal rulemaking 'one of the greatest inventions of modern government" (Davis, 1970). However, by the end of the "era of rulemaking" in the 1970s, both Scalia (1981) and McGarity (1992) concurred that the "bloom [was] off the rose."

[2]Recommendations of the Administrative Conference of the United States, 1 C.F.R. s305.92-1.

gage in an end run around notice-and-comment if it is feasible. Indeed, such avoidance is possible. Although often overlooked, particularly by social scientists (but see Raso (2015)), the APA provides exemptions to notice-and-comment, both for specific kinds of rules (notably, interpretative rules)[3] and for particular agency types (e.g., those providing national security, for whom quick and immediate action may be paramount).

While such avoidances would seem noncontroversial if always involving minor procedural issues and instances where urgent action's need is undisputed, it is widely acknowledged that other rules are encompassed. Indeed, a 2012 Government Accountability Office report[4] found that 35% of major rules and 44% of nonmajor rules avoided notice-and-comment regulation, with 77% of major rules and 61% of nonmajor rules involving avoidance claiming a "good cause" exemption.[5] To critics viewing the APA as a Bill of Rights protecting citizens from the faceless bureaucracy, such seeming exemption abuse "dishonors our system of limited government" (Anthony, 1992, 1312). Some, such as Elliott (1992, 1492), even argued that agencies only allow notice-and-comment when administrators do *not* care about input:

> 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 . . .

The Internal Revenue Service (IRS) provides an example of what critics claiming exemption abuse have in mind. The Treasury Department, of which the IRS is a constituent part, regularly issues changes to the Internal Revenue Code. Despite acknowledging that the APA's notice-and-comment provision applies to the Department's activities, Treasury eschews it roughly half the time by claiming the rules in question are interpretative (Hickman, 2007). Intriguingly, when Treasury does solicit public comments citizens almost *never* contest Notices of Proposed Rulemakings (NPRMs) (Hickman, 2008).[6] While the public's

[3]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). We can think of such rules as how an agency interprets an existing statute, as in *First National Bank v. Sanders* (1991).

[4]"Federal Rulemaking: Agencies Could Take Additional Steps to Respond to Public Comments." December 2012.

[5]These figures come from a random sample of final rules published from 2003–2010. The "good cause" exemption allows agencies to avoid notice-and-comment if its use would be "impracticable, unnecessary, or contrary to the public interest." See 5 U.S.C. 533(b)(3)(B).

[6]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.

response could reflect *qui tacet consentire*, indicating broad support for whatever policies Treasury comes up with, this seems improbable. Rather, the IRS may use exemptions to expedite change and/or realize outcomes more to its liking relative to notice-and-comment and choose informal rulemaking selectively.

Nor do agencies avoid notice-and-comment only when politicians are inattentive. Consider agency reactions to the 1996 Small Business Regulatory Enforcement Fairness Act (SBREFA). The SBREFA was enacted by a newly-elected Republican Congress to assist small businesses, on the grounds that their share of regulatory costs and burdens is disproportionate.[7] It required, among other things, that the Environmental Protection Agency (EPA) and the Occupational Safety and Health Administration (OSHA), two agencies targeted by regulation's critics and small businesses' advocates during the Clinton era, engage in additional inclusive panel processes beyond traditional informal rulemaking.[8] While the agencies' public responses were supportive,[9] Raso (2015), employing a difference-in-difference strategy, finds evidence to the contrary. Rather, the EPA and OSHA avoided rulemaking *more* than other agencies post-SBREFA. Although we can not specifically pinpoint what caused this change — the agencies may have proposed fewer rules that would attract small business interests, used exemptions to avoid the new costs imposed by the SBREF, or responded aggressively to demonstrate that they would not be bullied by congressional opposition — the SBREFA targeting highlights that rulemaking requirements, and agency responses through avoidance, are subject to political tensions that are not easily disentangled from procedural costs.[10] It seems that, in dealing with the SBREFA's impositions, the agencies accounted for

[7]See Small Business Regulatory Enforcement Fairness Act of 1996, §202, especially Points (1) - (3).

[8]Illustrative to what business and the Republican Congress were responding, when Carol Browner was designated EPA Administrator in late 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). Analogously, upon Joseph Dear's appointment as Assistant Secretary of Labor for Occupational Safety and Health in 1994, the *New York Times* saw it as an attempt to reinvigorate an agency that had been harnessed under Republican presidential administrations: "[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).

[9]According to Fact Sheet *EPA 233-F-99-001*, the "SBREFA is consistent with EPA Adminstrator Carol Browner's ongoing efforts to enhance stakeholder involvement, particularly by small entities, in the rulemaking process," while OSHA Senior Economist Robert Burt stated in 1997 congressional testimony that "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."

[10]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

procedural costs and political preferences in selecting when to avoid notice-and-comment.

Of course, that agencies commonly avoid notice-and-comment neither necessarily implies abuse of the option nor bad policy results. Even agencies overstepping their bounds might produce socially good policy if they (1) are well-equipped to know which policy is best; (2) do not introduce their own policy biases to the detriment of societal interests; and (3) use exemptions when the information produced via notice-and-comment would not be worth the corresponding costs. However, as implied, that such an optimistic reality exists is doubtful.

Certainly, many in the legal community have found exemptions troubling and have called for clarifying when they apply and reducing their employment (for a recent example, see Golinghorst (2018)). Emblematic, the Administrative Conference issued recommendations in 1969, 1973, 1983, and 1992 to such effect. However, no legislative act has been forthcoming and case law has not clearly identified exemption boundaries.[11] While occasionally talking tough,[12] judges have proven unwilling to step in and systematically stop agencies' frequent invocations of notice-and-comment exemption. Indeed, the Supreme Court expanded the power of agencies to avoid by ruling that agencies do not have to engage in notice-and-comment rulemaking when amending or reversing interpretive rules (see *Perez v. Mortgage Bankers Ass'n* (2015)).

Reinforcing this view that exemptions are problematic, Raso's (2015) empirical work suggests overuse is motivated primarily by low risk of judicial punishment. Agencies overemploy exemptions when there is little disincentive to shirk, and they do so to preserve autonomy and to minimize costs. Thus, our Treasury example may reflect an opportunistic agency responding to 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."

Also, strikingly, while legal scholars have discussed the fundamental importance of APA exceptions in some depth (e.g., Hamilton, 1972; Mashaw and Harfst, 1990), social scientists

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. Of course, the EPA and OSHA are relatively liberal agencies, e.g., using the Clinton and Lewis (2008) measure of agency ideology.

[11] In the words of William Hughes Mulligan, Second Circuit Appeals Court judge, exceptions are "enshrouded in considerable smog" (see *Noel v. Chapman* (1975)).

[12] A quarter century ago, the DC Circuit stated that good cause exceptions are to be "narrowly construed and reluctantly countenanced" *(New Jersey v. EPA* (1980)). In later years, it ruled that "bald assertions that the agency does not believe comments would be useful cannot create good cause to forgo notice and comment procedures" *(Action on Smoking and Health v. Civil Aeronautics Board* (1983)) and that notice-and-comment's costliness alone is insufficient to eschew it, as "good cause requires some showing of exigency beyond generic complexity of data collection and time constraints" *(NRDC v. Evans* (2003)). Yet, per the aforementioned GAO report, agencies were citing good cause for approximately one-quarter of all rules.

studying administrative behavior have not widely considered them (Raso, 2015). Most notably, the decision whether to engage in, or to eschew, notice-and-comment has not been systematically analyzed. Such inattention seems mistaken, as our discussion suggests that agencies face a strategic question, even when they are poorly protected by vague exceptions, that precedes informal rulemaking: Should they engage in notice-and-comment or attempt to sidestep it by engaging in avoidance by claiming exempt status?

Our analysis answers this question theoretically by specifying a regulatory avoidance model and empirically by investigating the exemption choice process. Theoretically, we model rulemaking as a strategic game, integrating an initial choice whether to use notice-and-comment. We produce insights complementary to those in Gailmard and Patty (2017), 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 ours.[13] Gailmard and Patty note that notice-and-comment rulemaking creates a paper trail of evidence, which they endogenize. Yet, our discussion suggests that, if we accept the legal canon on exemption, the paper trail that we observe with notice-and-comment should be different than what we would witness if exemptions could not be employed to prevent a trail in the first place.

Our avoidance model utilizes a simple specification with four players: an agency, two competing interest groups, and a court. The agency decides both which rule to propose and whether to avoid notice-and-comment. If it makes policy through avoidance, the court reviews the available evidence and may reject the agency's finding that the situation meets the requirements for avoidance, and the agency must alter its rule. Otherwise, if the court upholds the exemption the game ends and the rule takes effect. Should the agency enter into notice-and-comment, the groups may expend effort to learn about and comment on the proposed rule. After groups comment, the court reviews the evidence and, as in the previous case, upholds or overturns the agency's proposed rule.

The theory underscores the exemption option's importance for the observed behaviors of courts and agencies, and the policies they jointly implement. Additionally, it highlights the salience of the costs of notice-and-comment — often talked about in the relevant literature with great frustration — to courts and agencies, conditioned by the expected effort levels of groups on one or another side of the policy divide if notice-and-comment proceeds, in determining what we observe. For example, when the court is mostly concerned with delay's costs, it may approve policies generated through agency avoidance even if it believes that

[13]Stephenson (2006, 2008) provides similar models of interactions among a court and an agency, but excludes interest groups, much less informal rulemaking. Fox and Stephenson (2011) model executive posturing under judicial review, but do not include public interests. Alternatively, Libgober (2020) models a world where an agency makes a strategic proposal and groups comment endogenously, but there is neither a court nor an ability to avoid group comments altogether.

the policy is poorer than the alternative; the agency, in turn, uses avoidance to realize its preferred policies. By contrast, when the court places greater importance on the actual policy outcome, e.g., if the potential rules that can be adopted differ significantly, then outcomes depend on the agency's notice-and-comment costs relative to its policy motivations. Intuitively, if the agency has high notice-and-comment costs then it always claims exemption, even though this requires implementing its least preferred policy. At the spectrum's other end, with low costs the agency always proposes its preferred policy and engages in notice-and-comment. Most interesting is when the agency has moderate costs. Here, the agency uses notice-and-comment when its information is favorable towards its preferred policy, but when it lacks favorable information it often avoids and implements its least preferred policy. Thus, the model suggests that exemptions can allow the agency to credibly choose policy based on its information. In this moderate cost case, notice-and-comment's usage resembles Elliot's earlier characterization, in that the agency only turns to the process when expecting group comments confirming its proposed rule.

Analyzing comparative statics from our model generates empirical implications about the the relationship between agency characteristics and the frequency of agency avoidance. First, agencies with strong policy biases employ notice-and-comment more than moderate agencies. Second, if agencies generally have low notice-and-comment costs we expect more skilled agencies to avoid more frequently but if agencies typically have high costs (consistent with how many observers view the rulemaking process) we expect such skilled agencies to use the process more often, i.e., there is an indeterminate relationship depending on our assumption about the distribution of agency costs. Third, with respect to groups, comments on proposed rules should mostly come from one side of the issue and the number of group comments should be dampened by expert agencies and agency costs for notice-and-comment. Related to these comparative statics, our theory indicates that empirical investigations of rulemaking failing to integrate exemption and its ramifications, such as the possibility that groups may be influential without issuing comments given the agency decides to proceed with notice-and-comment, are likely misspecified.

After establishing a theoretical framework for understanding the use of exemptions, we empirically investigate our predictions about agency characteristics and avoidance of notice-and-comment. We estimate a model of exemption use and find support for our theoretical predictions. Agencies that are more ideologically extreme use notice-and-comment more often. Consistent with agencies assigning substantial costs to engaging in notice-and-comment, less skilled agencies exhibit stronger tendencies to avoid notice-and-comment.

Our results have important social welfare implications but provide no unambiguous policy recommendation about whether having an exemption available is generally good or not.

Welfare depends both on court costs and, in instances where these costs are not too high, agency bias in favor of one policy alternative over another. A socially-regarding court would sometimes want to give the agency an exemption option and in other instances rule it out ex ante. There are conditions where the avoidance option's existence will yield better results than if notice-and-comment is mandatory, as avoidance circumvents costs that many involved with the process lament. In other circumstances, despite the costs, forcing the agency to use notice-and-comment to learn potentially more about the state of the world is better.

Our analysis proceeds in four parts. We initially describe and analyze our model, with specific focus on its empirical implications. We then estimate our empirical model of notice-and-comment avoidance. Before concluding, we discuss our findings and analyze key social welfare implications.

2 A THEORY OF REGULATORY AVOIDANCE

Our model features an agency (A), court (C), and two interest groups (G_0 and G_1), interacting in an extensive form Bayesian game with uncertainty over a policy decision. The agency sets policy but its choice is subject to judicial review. It decides whether to claim an exemption or to engage in notice-and-comment rulemaking. In the latter case groups have the opportunity to provide new information. The agency and groups have preferences for one policy over the other, with the two groups on opposite sides of the divide, while the court wants what is societally best.

2.1 Timing of the Game

The game proceeds as follows:

1. Nature draws the state of the world, which represents the best policy for society. We denote this state as $\omega \in \{0, 1\}$, where both 0 and 1 are possible policies. With probability $q \in (0, 1/2]$ the state is 1 and with probability $1-q$ the state is 0, i.e., policy 0 is ex ante more likely best for society. The state ω is *unobserved* by the players.

2. The agency receives a *private* signal about the state of the world, $s_A \in \{0, 1\}$, which is correct with probability p. As p increases, the agency is more competent at learning the true state from its signal. We assume $p \in (1-q, 1)$. Thus, the agency is reasonably but not perfectly competent, with a signal accurate enough to overcome its prior.

3. After observing signal s_A, the agency recommends a policy, $x \in \{0, 1\}$, that is observed by both the court and the groups.

4. The agency decides whether to avoid the notice-and-comment process or not.[14] Denote this choice $a \in \{0, 1\}$, where $a = 1$ indicates avoidance and $a = 0$ indicates notice-and-comment.

5. If the agency circumvents notice-and-comment, $a = 1$, then the court reviews the agency's decisions and decides whether to uphold the policy or overturn it.[15] If the court upholds the exemption, then the game ends with the proposed rule x enacted. Otherwise, x is overturned and the alternate policy is enacted. Let $\pi \in \{0, 1\}$ denote the final policy outcome.

6. If the agency does not declare an exemption, then the game enters notice-and-comment. Each group simultaneously expends resources to try and learn the state of the world. That is, group i exerts unobservable effort $e_i \in [0, 1]$, $i \in \{0, 1\}$. After choosing e_i, group i observes a *private* signal $s_i \in \{\omega, \phi\}$, where $s_i = \omega$ indicates that group G_i learns the state of the world, while $s_i = \phi$ indicates that G_i obtains no new information. With probability e_i group i observes $s_i = \omega$ and with probability $1 - e_i$ the signal is uninformative. The group next chooses whether to comment on proposed policy x. Commenting reveals its signal to the agency.[16]

7. Finally, after observing the comments by the groups, the court decides to uphold or overturn the agency's policy choice. If the court upholds the policy then the proposed policy x is implemented, $\pi = x$. If the court overturns the policy, then the alternative policy is adopted, $\pi \neq x$.[17]

2.2 Payoffs

Having laid out the stages of our game, we now describe the components of each player's payoff. There are both policy and non-policy elements for each player.

As for policy, the agency has preferences over the final outcome. In particular, it is biased in favor of policy 1 and gets policy payoff $b > 0$ if policy 1 is implemented and payoff 0 for

[14] In the U.S. context an agency could also enter into negotiated rulemaking, which was developed in the 1970s as a means of getting around informal rulemaking's lengthy, costly, processes. However, experience with this alternative has been disappointing and its use has never become popularized and is extremely rare (Blake and Bull, 2017)

[15] In reality courts only review agency exemptions if the agency is sued. Our results are robust to assuming that judicial review of agency exemptions is endogenous to a group's decision to contest in the courts when the agency's claims that exemption is justified.

[16] Thus, group comments are modeled as "hard" or "verifiable" information. This form of information transmission is consistent with earlier models of notice-and-comment, e.g., Gailmard and Patty (2017) and Libgober (2020).

[17] Alternatively, we could assume that the agency revises the policy choice and avoids getting overturned by the court.

policy 0. Thus, b measures the extent of the agency's bias. If $b = 0$, then the agency is moderate, as it is indifferent between the two policies. Increasing b heightens the extremity of the agency's preference in favor of policy 1 over policy 0. The court desires what is best for society; its policy payoff is 1 if the final policy matches the state of the world and 0 if it does not. Groups want their preferred policy, and each gets a payoff of 1 if the final policy matches its preferred policy, and gets a payoff of 0 otherwise. We assume that group G_0 prefers policy 0 and group G_1 prefers policy 1. Including 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).[18]

Turning to non-policy components of the final payoffs, the agency's payoff is impacted by whether it endures delay costs either because it goes through notice-and-comment or because it avoids notice-and-comment but the court rejects its policy on grounds of failing to qualify for exemption. The costliness and frustration of delay is part of the textbook discussion of informal rulemaking (Kerwin and Furlong, 1992, 2018). Whatever the reason for delay, the agency incurs a cost $\delta_A > 0$.[19] Therefore, the agency's final payoff is

$$b\pi - a\rho_A\delta_A.$$

As for the court, besides desiring the best policy for society, it considers the consequences of delaying a new policy's enactment on social welfare. Thus, if the agency goes through notice-and-comment or there is delay because the agency must revise its policy following an exemption, then the court pays an extra cost $\delta_C > 0$. The court's payoff is therefore

$$(1 - |\pi - \omega|) - \mathbb{I}_y\rho_A\delta_C.$$

With respect to groups, effort costs come into play. Group G_0, which prefers policy 0, incurs

[18]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 OSHA proposal to enhance sanitation requirements in shipyards yielded many responses, but all were nearly identical and nearly all came from industry members and associations. Of course, given the arguments above, it should be unsurprising that some rules attract no attention at all, e.g., a 2008 Federal Aviation Administration rule regarding the rewiring and testing of the fuel valve of the Bell Helicopter Textron Canada helicopter produced zero comments.

[19]Our results hold if the cost for getting overturned after avoidance and the costs of notice-and-comment are different parameters. As each captures a similar idea of delay and extra effort on the agency's part, to reduce notation we simply use δ_A.

effort costs such that its final payoff is

$$(1-\pi)-\frac{1}{2}e_0^2,$$

while group G_1's utility is given by $\pi - \frac{1}{2}e_1^2$.

2.3 Equilibrium Behavior

As our regulatory avoidance model features incomplete information and agency signaling, our equilibrium concept is perfect Bayesian equilibrium (henceforth "equilibria"). Players must maximize their expected utility at each stage of the game and update their beliefs according to Bayes rule whenever possible. Additionally, we allow the groups to condition their strategy on a public randomization device when multiple pure strategy commenting equilibria exist.[20] We do this to ensure continuity of the agency's strategy for part of the parameter space.

Let $\mu_A(s_A)$ be the agency's updated belief (using Bayes rule) that $\omega = 1$ after observing signal s_A. Define $\mu_G(x, a)$ as the groups' (and the court's) belief that $\omega = 1$ after observing policy proposal x and exemption decision a. Finally, when the court is deciding to uphold the agency's policy choice, let μ_i represent an arbitrary belief that $\omega = 1$ for player $i \in \{C, G_1, G_0\}$. In equilibrium, this depends on the agency's strategy and, given notice-and-comment, the groups' behaviors.

To commence our examination of equilibrium behavior, Lemma 1 analyzes the court's decision to uphold the agency's policy choice. This decision hinges on the court's belief that the agency's choice matches the state and whether the agency avoided notice-and-comment. All proofs are available in the Appendix.

Lemma 1. *Judicial review of agency actions.*

1. *Assume the agency uses notice-and-comment. When $x = 1$, the court upholds the policy if $\mu_C \geq 1/2$. When $x = 0$, the court upholds the policy if $\mu_C \leq 1/2$.*

2. *Assume the agency avoids notice-and-comment. When $x = 1$, the court upholds the policy if $\mu_C \geq \frac{1-\delta_C}{2}$ and overturns it otherwise. When $x = 0$, the court upholds the policy if $\mu_C < \frac{1+\delta_C}{2}$. For $x \in \{0, 1\}$, if $\mu_C = 1/2$ then the court is indifferent and may uphold or strike down the policy with any probability.*

[20] Public randomization devices are commonly used in repeated games, e.g., Harris, Reny and Robson (1995).

When the agency employs notice-and-comment, the court upholds the policy when it believes that the agency's choice is more likely to be correct than the alternative, as the court wants to match the state. However, if the agency avoids notice-and-comment then the court upholds the agency's choice for some beliefs that are less than 1/2, as the court is averse to creating further costs and delays by overturning the agency. As we will show, this aversion sometimes allows the agency to implement a policy that is unlikely to be optimal for the court.

Lemma 2 details the equilibrium effort and commenting strategies of the groups. Group i's optimal effort depends on its belief $\mu_G(x,a)$ and, in one case, on the outcome of a randomization device. Throughout we suppress this dependence and denote optimal effort as e_i^*.

Lemma 2. *Group effort.*

1. *Assume $\mu_G(x,a) > 1/2$. Group G_1 exerts effort $e_1^* = 0$ and G_0 exerts effort $e_0^* = 1 - \mu_G(x,a)$.*
2. *Assume $\mu_G(x,a) < 1/2$. Group G_1 exerts effort $e_1^* = \mu_G(x,a)$ and G_0 exerts effort $e_0^* = 0$.*
3. *Assume $\mu_G(x,a) = 1/2$. With probability $P(\delta_A, b, p, q)$ Group G_1 exerts effort $e_1^* = \mu_G(x,a)$ and G_0 exerts effort $e_0^* = 0$. With probability $1 - P(\cdot)$ Group G_1 exerts effort $e_1^* = 0$ and G_0 exerts effort $e_0^* = 1 - \mu_G(x,a)$.*
4. *Whenever a group obtains a favorable signal it reveals its information.*

If, absent new information, the court would uphold a group's preferred policy, then the group expends no effort and does not comment as there is no benefit to doing so. Conversely, if changing an outcome from unfavorable to favorable is possible, the group will expend positive and this effort depends on the group's belief that the state matches its preferred policy. When $\mu_G(x,a) = 1/2$ there exists an equilibrium where G_1 is active and G_0 passive and an equilibrium with G_1 passive and G_0 active. In this case, we make use of a randomization device with weight $P(\cdot)$ to select an equilibrium. See Appendix for details and the definition of $P(\cdot)$.

Finally, we turn to the agency's decision. For characterizing its behavior it is convenient to define $\overline{\delta}_A$, $\underline{\delta}_A$, and δ_A^* as follows:

$$\begin{aligned}
\overline{\delta}_A &= b[2\mu(1) - \mu(1)^2], \\
\underline{\delta}_A &= b[\mu(1) + \mu(0) - \mu(0)\mu(1)], \\
\delta_A^* &= b[q\mu(0)].
\end{aligned}$$

This allows us to analyze the agency's policymaking decisions in terms of the agency's costs as well as the court's delay costs.

Proposition 1. *Agency policymaking.*

1. *Assume* $\delta_C \leq 1 - 2q$.

   (a) *If* $\delta_A > \overline{\delta}_A$ *then the agency chooses* $x = 0$ *and avoids notice-and-comment following either signal.*

   (b) *If* $\delta_A \in [\underline{\delta}_A, \overline{\delta}_A]$*: When* $s_A = 1$ *the agency chooses* $x = 1$ *and goes through notice-and-comment. When* $s_A = 0$ *the agency chooses* $x = 0$ *and avoids notice-and-comment.*

   (c) *If* $\delta_A \in [\delta_A^*, \underline{\delta}_A]$*: When* $s_A = 1$ *the agency chooses* $x = 1$ *and goes through notice-and-comment. When* $s_A = 0$ *with probability* $\sigma(\delta_A)$ *the agency chooses* $x = 1$ *and goes through notice-and-comment, with probability* $1 - \sigma(\delta_A)$ *it chooses* $x = 0$ *and avoids notice-and-comment.*[21]

   (d) *If* $\delta_A < \delta_A^*$ *then the agency chooses* $x = 1$ *and enters notice-and-comment following either signal.*

2. *Assume* $\delta_C > 1 - 2q$*. The agency chooses* $x = 1$ *and avoids notice-and-comment following either signal.*

As shown in Figure 1, which depicts equilibrium rulemaking for combinations of agency and courts costs, the agency takes advantage of exemptions when the court faces high delay costs. In this case, exemptions have the downside, discussed by previous scholars, of allowing a biased agency to avoid comments and to always implement its preferred policy.

Rulemaking is more nuanced with more moderate court costs, as agency costs are now crucial. There are conditions where the agency always uses notice-and-comment, where it conditionally employs notice-and-comment, and where it always uses exemption. We now outline the intuition behind these different cases.

First, an agency facing high costs is incentivized to avoid notice-and-comment and still not get overturned by the court. Consequently, after either signal it claims exemption and, by selecting its least preferred policy, is upheld by the court. Put differently, the agency *panders* to the court by choosing the latter's ex ante preferred policy (given our assumption that policy 0 is more likely to fit the state of the world) to avoid the costs of getting

[21] See the Appendix for the definition of $\sigma(\delta_A)$.

overturned.[22]

Second, with moderate to high agency costs, the agency's action depends on its information, with the agency only using notice-and-comment when confident that the outcome will support its preferred policy. When the agency has favorable information it goes through notice-and-comment. When $s_A = 1$ the agency is reasonably certain that notice-and-comment will not produce contradictory information, so it will incur cost δ_A to have a probability of getting its preferred policy enacted. Conversely, when $s_A = 0$ the agency is dissuaded from notice-and-comment, as it knows there is a high probability that a group will bring forth contradictory information and the agency's policy will be overturned. Hence, it avoids notice-and-comment and chooses $x = 0$. As in the case when agency costs are highest, although this is the agency's least preferred policy, doing so circumvents incurring extra costs. Hence, exemptions provide the agency the opportunity to credible signal its information to the court and groups.

Third, if an agency's costs are low to moderate then it continues to always push for its preferred policy when it has favorable information. When the agency has unfavorable information it now mixes between attempting to implement its preferred policy through notice-and-comment or avoiding by choosing the policy it does not prefer. As agency costs of delay increase it becomes less willing to go through notice-and-comment and, thus, avoids more often following the unfavorable signal, until δ_A hits $\underline{\delta}_A$, at which point the agency fully separates. Therefore, higher agency costs of delay result in more informative policymaking by the agency in this region.

Finally, if the agency's costs for notice-and-comment are low then the agency always attempts to push its preferred policy through using notice-and-comment. Again, when $s_A = 1$ the agency is confident no contradictory information will be uncovered. When $s_A = 0$, because costs are low the agency will risk a high probability of getting overturned to have a chance of getting its preferred policy.

[22] Although our analysis focuses on the strategically interesting case where the agency only uses exemptions when it proposes its least preferred policy, there are many conditions under which the agency can employ exemptions to obtain its preferred policy. As discussed, when social costs of delay are high the agency can always avoid notice-and-comment and have its preferred policy upheld. Additionally, while we assume that $q < 1/2$, if instead the agency's preferred policy is likely correct, $q > 1/2$, then the agency can always avoid and get its preferred policy. Finally, we have assumed the court is unbiased. If the court is biased toward the agency then it would be easier for the agency to avoid and implement its preferred policy, even if this policy is unlikely to be optimal and social costs of delay are small. Extending the model to incorporate biased courts may be a fruitful avenue for future research.

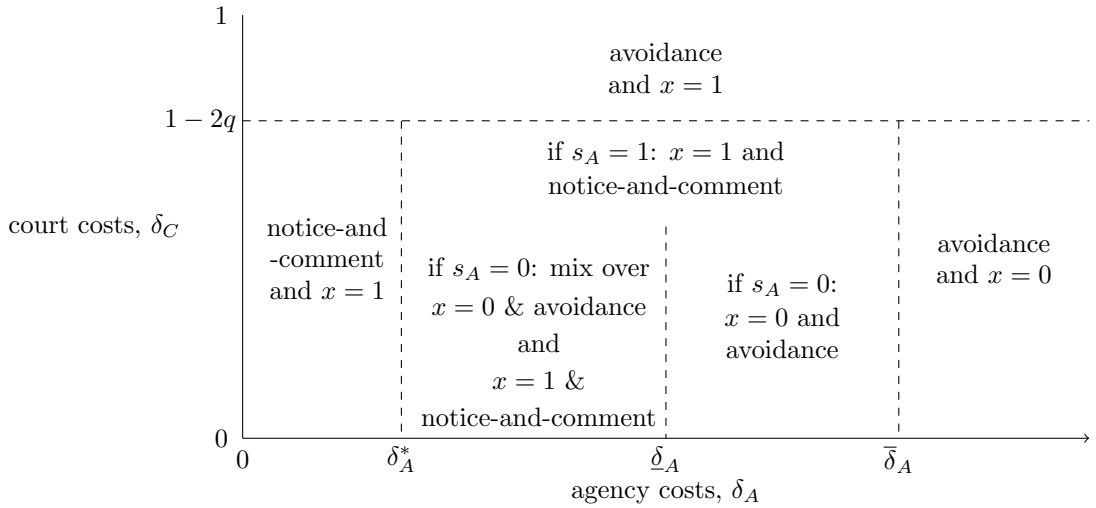


Figure 1: Agency's equilibrium use of notice-and-comment and avoidance options.

3 EMPIRICAL IMPLICATIONS

We now lay out our model's empirical implications. We first focus on agency ideology and skill, and then turn to when a group should inject itself into the rulemaking process. Predictions that can be, or have been, examined empirically are produced about ideology, skill, and group effort. Additionally, our findings about group commenting lead to inferences about what specifications of organizational influence on rulemaking should look like.

Assume that agency costs, δ_A, are drawn uniformly over $[0, 1]$, where F denotes the uniform distribution and assume $b < 1$. The probability of observing notice-and-comment is then given by:

$$\Phi(b, p) = \Big[pq + (1-p)(1-q)\Big] F(\overline{\delta}_A) + \Big[1 - pq - (1-p)(1-q)\Big]\Big[(F(\underline{\delta}_A) - F(\delta_A^*))\sigma(\delta_A) + F(\delta_A^*)\Big].$$

We can now state the relationship between the agency's ideological bias and its employment of notice-and-comment rulemaking.

Proposition 2. *Agency bias.*

Increasing the agency's bias increases the probability of notice-and-comment, $\frac{\partial \Phi(b,p)}{\partial b} > 0$.

Proposition 2 indicates that more ideologically biased agencies will use notice-and-comment more often. A more biased agency has a greater willingness than its more moderate counterpart to incur notice-and-comment's costs to increase the probability of implementing its preferred policy. Returning to Figure 1, an increase in b grows both the regions in which

the agency always uses notice-and-comment and in which it uses notice-and-comment when $s_A = 1$, while shrinking the region in which an exemption is always claimed.[23]

Besides an agency's bias, its skill — captured by its signal's informativeness — affects notice-and-comment's probability. Unlike agency bias, increasing the agency's skill has more cross-cutting effects on the probability of notice-and-comment. However, as our next two propositions show, we can obtain clear predictions by considering how costly the agency views notice-and-comment. While many descriptions would suggest that agencies view the process as quite costly, we will be able to empirically investigate if either implication holds.[24]

First, we examine the relatively low cost case. Given this assumption, raising p, the informativeness of the agency's signal or skill, reduces the probability of notice-and-comment.

Proposition 3. *Agency skill with lower costs.*

If δ_A is drawn from a uniform distribution over $[0, \tilde{\delta}_A]$, with $\tilde{\delta}_A \in (\delta_A^*, \underline{\delta}_A)$ sufficiently small, then increasing the agency's skill decreases the probability of notice-and-comment, $\frac{\partial \Phi(b,p)}{\partial p} < 0$.

Increasing p decreases δ_A^*, which shrinks the set of costs for which the agency always goes through notice-and-comment. Furthermore, higher skill makes the agency less likely to observe the favorable signal and enter notice-and-comment because its preferred policy is ex ante less likely to be socially optimal. Finally, in the range $[\delta_A^*, \tilde{\delta}_A]$, higher skill makes the agency more likely to avoid following the unfavorable signal, as the opposing group, conditional on a successful investigation, has a higher chance of finding opposing information.

However, to reiterate, these results are sensitive to the costs associated with notice-and-comment. If δ_A is drawn from a support with a greater lower bound or, more broadly, if agencies are expected to have high costs for engaging in notice-and-comment, then our prediction is reversed.

Proposition 4. *Agency skill with higher costs.*

If δ_A is drawn from a uniform distribution over $[\hat{\delta}, 1]$, with $\hat{\delta} \in (\underline{\delta}, \overline{\delta})$ sufficiently large, then increasing p increases the probability of notice-and-comment, $\frac{\partial \Phi(b,p)}{\partial p} > 0$.

[23] Here we take a more moderate agency to be one that is closer to being indifferent between the two policy choices. Instead, a moderate agency could be one that is trying to choose the policy that matches the state of the world, i.e., it wants to maximize social welfare. Such an agency makes ideal use of rulemaking procedures. It proposes policies based on its information, uses notice-and-comment when it genuinely wants input from groups, and only avoids when notice-and-comment would be too costly. In the Appendix, we show that if the agency in our baseline model is sufficiently biased then it goes through notice-and-comment more often than a welfare maximizing agency, and Proposition 2 still holds.

[24] While there is little dispute that the notice-and-comment process is lengthy, there is discussion of whether the process became increasingly ossifying over time (Pierce Jr. (2012); Yackee and Yackee (2012*a*,*b*)).

Increasing skill increases $\overline{\delta}_A$. This effect increases the probability that an agency with favorable information goes through notice-and-comment, while decreasing the probability that the agency's costs fall in the range where it never uses notice-and-comment. If the support of δ_A does not include lower costs of notice-and-comment then, unlike the case in Proposition 3, there is no countervailing effect from decreasing $\underline{\delta}_A$. Overall, this implies that higher skilled agencies use notice-and-comment more frequently when they expect high delay costs.

Finally, our model yields insights into behavior by interested parties that may comment on proposed agency rules. This, as mentioned, not only provides predictions regarding group behavior but furnishes insights about what specifications about influence over rulemaking might look like.

Proposition 5. *Group behavior.*

1. *During notice-and-comment rulemaking only one group makes comments.*

2. *If the agency views notice-and-comment as costly then increasing the agency's skill weakly decreases the probability that a group comments on a proposed rule. If the agency does not view notice-and-comment as very costly then increasing the agency's skill weakly increases the probability that a group comments on a proposed rule.*

First, the model implies that most comments on a rule should only come from one side. This is due to the group whose preference the agency's policy proposal reflects is less motivated to act.

Second, increasing the agency's skill decreases the probability that the active group comments, when the agency views the process as very costly. When the agency views notice-and-comment as costly the opposing group is active. Here, greater skill reduces the likelihood of the group's comment having an influence and, hence, the probability of a comment. However, the opposite conclusion holds when the agency views notice-and-comment as not very costly. In this case, the friendly group is active. Thus, improving the accuracy of the agency's signal motivates the friendly group to work harder to find supporting information for the agency.

The equilibrium analysis also suggests empirical work estimating the influence of group comments based only on observed comments is problematic. Groups may be influential in situations where the agency panders to it even when offers no comments, i.e., models of group influence via rulemaking activity will be misspecified without integrating conditions where a group existence without acting makes it influential given the option of commenting.

4 EMPIRICAL EVIDENCE

We specified our avoidance theory with the explicit idea of taking it to data. We should note that existing research findings correspond to the first two empirical predictions in Proposition 5. McKay and Yackee (2007) supports part 1's prediction that comments on rules should be one-sided. Moore (2018) finds that higher skilled agencies should receive fewer comments. Together with part 2 of Proposition 5 this suggests that agencies view notice-and-comment as fairly costly. Furthermore, agencies viewing the process as costly will be consistent with our empirical results. We now complement these analyses by assessing both whether Proposition 2's predictions about agency bias or whether either of the contrasting predictions about agency skill and costs in Propositions 3 and 4 (as compared to null findings) are realized.

The core of our data on rulemaking and its avoidance to investigate Propositions 2-4 is from O'Connell (2008), who created a comprehensive database from the *Unified Agenda of Federal Regulatory and Deregulatory Actions*. Executive Order 12866 tasks agencies with semi-annual submissions regarding pending and anticipated rulemaking. Importantly, this includes whether or not agencies employ notice-and-comment rulemaking, allowing us to examine agency avoidance choices. Our dependent variable is dichotomous, scored 0 when the proposed rule employs notice-and-comment and 1 if it involves avoidance.[25]

While O'Connell's data spans 1983–2008 and includes 256 agencies, our analysis begins in 1993 and covers 97 agencies so that, as we detail, we can incorporate measures of agency bias and skill.[26] For descriptive purposes, Figure 2 distinguishes between rule types in O'Connell's data for the agencies in our sample for the entire 1983–2008 time period, and Figure 3 displays the proportion of rules featuring avoidance by agency. Figure 2 shows that the distribution of rule type was relatively constant over time, while Figure 3 demonstrates that the vast majority of agencies employ notice-and-comment rulemaking in some circumstances and not in others, providing foundation for our enterprise.

Given that Propositions 2, 3, and 4 suggest that NPRM behavior should be substantially impacted by agencies' biases — which we will assume are a function of their underlying ideologies — and skill levels, measuring these two typically difficult to quantify features is key. Happily, as foreshadowed, recent efforts allow us to capture these features. Specifically, we employ measures developed by Richardson, Clinton and Lewis (2018, henceforth RCL), who survey over 1,500 federal executives and use a measurement model to transform these skill/ideology perceptions into agency-specific measures. While using the RCL measures

[25]A rule going through notice-and-comment at any point in the process is coded as 1, e.g., even if courts make the agency do so.

[26]Specifically, beginning in 1993 allows utilization of agency skill and ideology data generated by Richardson, Clinton and Lewis (2018).

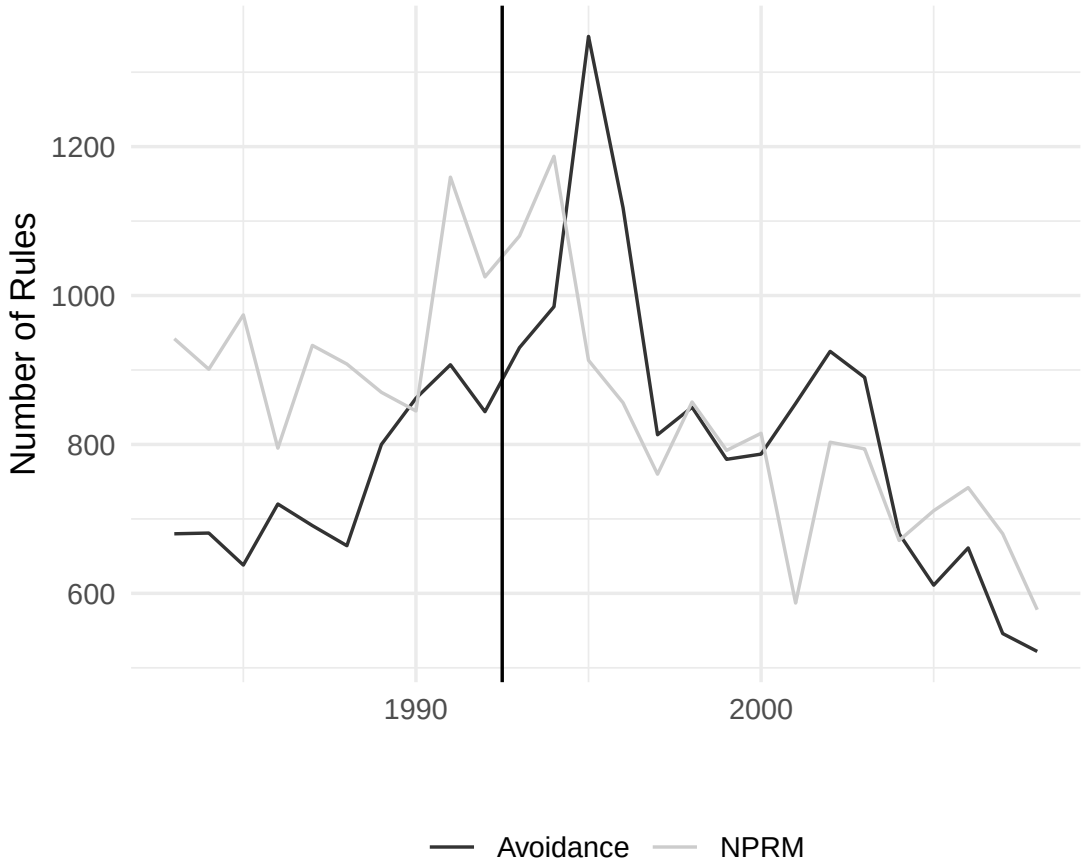


Figure 2: Notice-and-comment versus avoidance choices by regulation publication date. Data compiled by O'Connell (2008); vertical line indicates beginning of our empirical analysis.

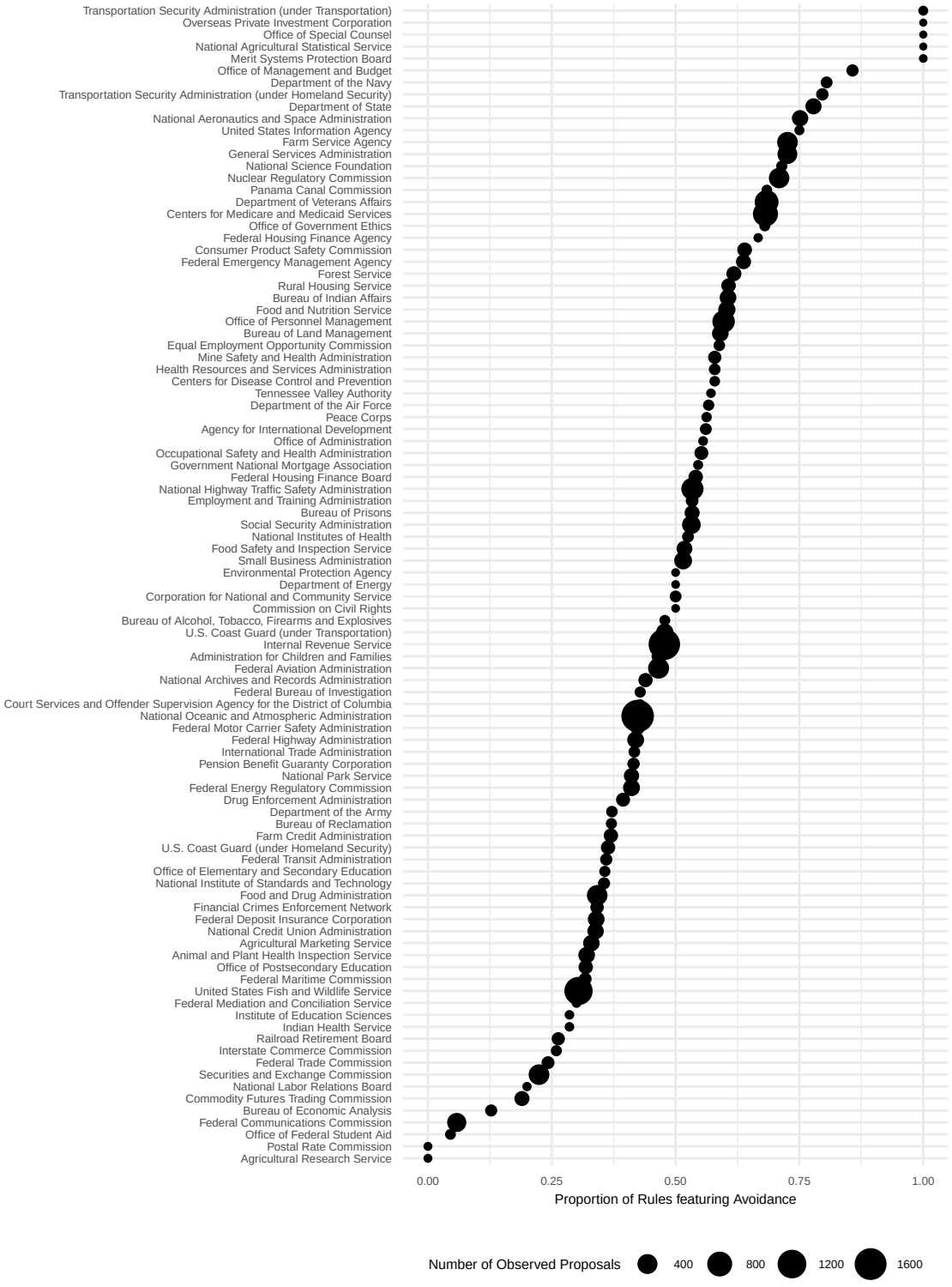


Figure 3: Avoidance by agency.

limits our agencies (although virtually all major agencies are included) and time span, we nonetheless have 15,729 proposed rules to study.[27]

Ideology	Insignificant	Significant	Overall
Liberal	0.493	0.420	0.475
Moderate	0.523	0.392	0.485
Conservative	0.515	0.396	0.500
Total	0.510	0.403	0.487

Table 1: Ideology and avoidance. Agencies are classified as "liberal" if their RCL ideology estimate falls in the lower third of the distribution; "conservative" if their RCL ideology estimate falls in the upper third; and moderate otherwise.

Skill	Insignificant	Significant	Overall
Unskilled	0.591	0.474	0.562
Moderate	0.480	0.364	0.453
Skilled	0.454	0.342	0.435
Total	0.510	0.403	0.487

Table 2: Skill and avoidance. Agencies are classified as "unskilled" if their RCL ideology estimate falls in the lower third of the distribution; "skilled" if their RCL ideology estimate falls in the upper third; and moderate otherwise.

Before estimating our empirical model, we first examine the relationships between bias, skill level, and avoidance as conditioned by rule significance (since it is far less likely that avoidance would be legally justified for significant regulation, while costs and delay should also be higher). Table 1 shows the relationship between ideology/bias, rule significance, and avoidance.[28] For presentational purposes, we trichotomize agencies between liberal, moderate, and conservative, depending on whether they are in the bottom, middle, or upper third of the RCL score distribution. Overall, there appears to be a relationship between both rule significance and agency ideology for agency choice (we will examine if these relationships fit our theory when we estimate our empirical model). In the rightmost column, we see that conservative agencies avoid the most, followed by moderate, and then by liberal agencies. Once partitioned by rule importance, however, the biased agencies avoid more for significant

[27]Given these measures, agency skill and bias are assumed constant over time. RCL specifically phrased their questions to encourage respondents to emphasize "long term, stable leanings", where in particular respondents were asked to think "across Democratic and Republican administrations" (305).

[28]In O'Connell's original data, rules were identified as "economically significant," "other significant," "substantive but nonsignificant," "routine and frequent," or "other administrative." Here we distinguish significant from insignificant rules by whether they are listed under the first two categories or not.

rules and less for insignificant ones. Table 2 repeats the same analysis interacting perceived skill and significance and indicates that unskilled agencies avoid NPRM more than their moderate and skilled counterparts.

We now turn to a full-blown model to get a clearer sense of the relationship between skill, ideological bias, and avoidance. Rather than trichotomize bias, we use the ideology score's absolute value. Also, as in the tables above, we include a dummy variable scored 1 if a rule is significant and 0 otherwise. Furthermore, we include some straightforward dichotomous control variables indicating whether (1) the agency is independent; (2) the agency operates at the federal level; (3) the agency operates at the state level;[29] and (4) Bill Clinton or George W. Bush was the president. We estimate our model as a logistic regression and cluster our standard errors by agency. Finally, we subset our data to include only agencies with at least ten proposed rules.

Variable	Coeff.	S.E.	S.E., clustered	p-value	p-value, clustered
Politicization	0.198	0.035	0.234	<0.001	0.397
Skill	0.245	0.022	0.139	<0.001	0.078
Significant	0.455	0.041	0.146	<0.001	0.002
Independent	0.549	0.044	0.337	<0.001	0.103
Federal Level	0.152	0.055	0.141	0.005	0.281
State Level	0.162	0.058	0.169	0.005	0.337
Clinton	0.034	0.033	0.127	0.305	0.789
(Intercept)	−0.266	0.038	0.214	<0.001	0.214

Table 3: Logistic regression results predicting notice-and-comment. Total observations: 15,729. Total number of agencies: 54. Results averaged across 25 imputations.

Table 3 presents the logit estimates, displaying results consistent with our theory: Per Proposition 2, more biased agencies engage in avoidance less often, instead opting for notice-and-comment. [The effect is statistically significant with the naïve standard errors, but fails to maintain its significance with the more appropriate clustered errors.] To reiterate, our model indicates such choices should be made because biased agencies do not mind paying the (administrative) costs of notice-and-comment given the potential (political) benefits of having their preferred policy shown to be best.

In discerning between Propositions 3 and 4, on the relationship between skill and avoidance, evidence supports the latter: more skilled agencies avoid less. This indicates that, on average, agencies find that the costs of regulatory delay are high and that low skilled agencies try more than high skilled counterparts to use avoidance as a means of not incurring such

[29]Agencies operate at levels other than state or federal (e.g., municipal or tribal), so there is no fear of perfect collinearity.

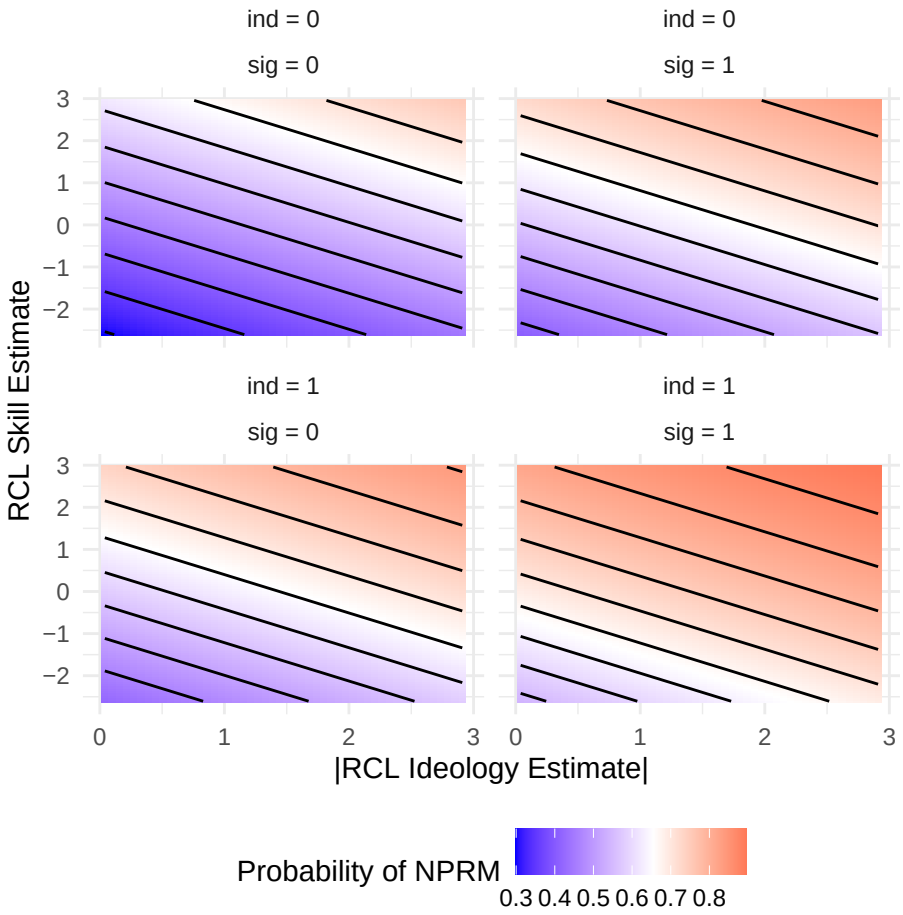
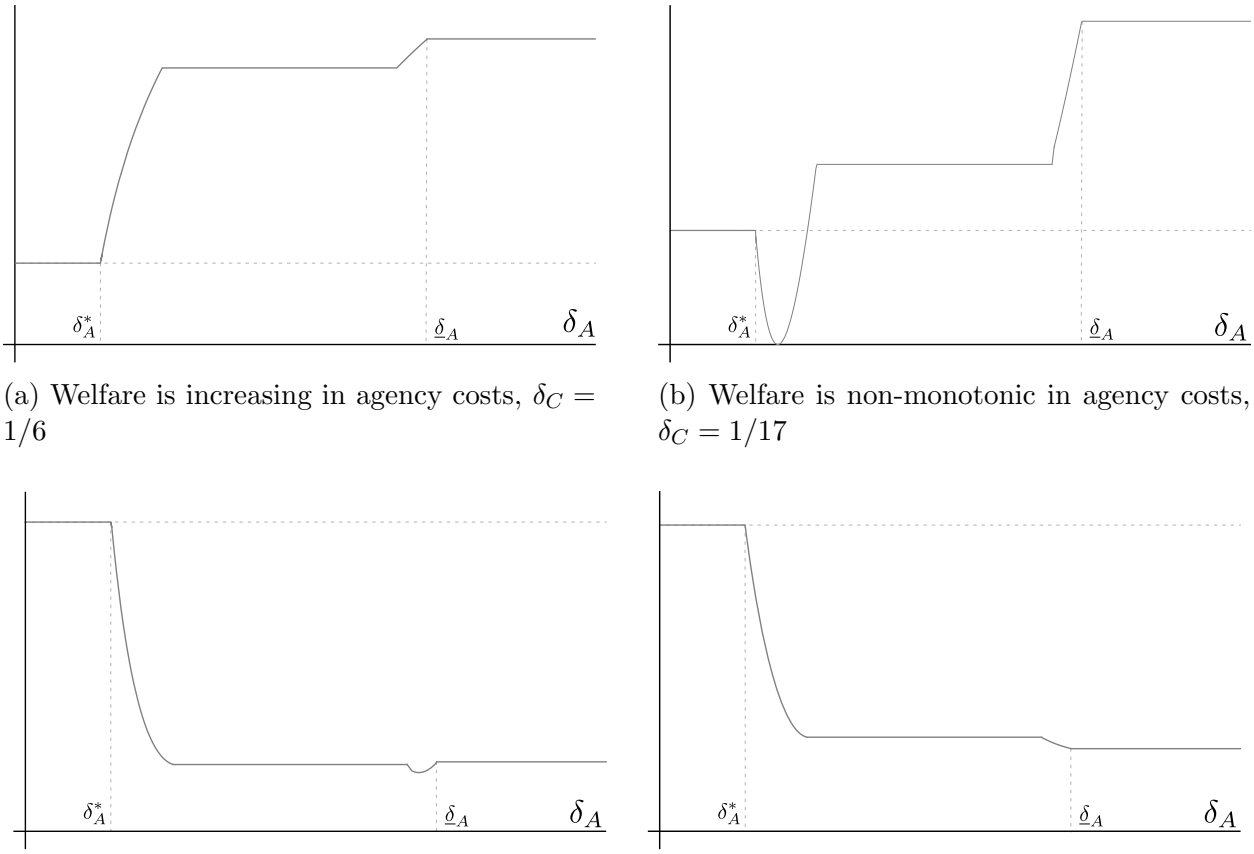


Figure 4: Predicted probability of NPRM rulemaking as a function of agency skill and politicization, partitioned by agency independence and significance of the rule. Results averaged over 25 imputations.

costs.

As one would expect from the theory, agencies avoid less on significant matters, as these have both higher costs of being caught in poor behavior and higher potential gains for being proven "right" by the NPRM procedure. This is our strongest and most resilient result, and we believe that more work should be done to unpack the circumstances under which these factors outweigh the benefits of successful avoidance.

As a final visualization of our empirical analysis, Figure 4 provides a heatmap of predicted probabilities of NPRM rulemaking as a function of agency politicization, skill, independence, and rule significance. Generally speaking, independent agencies employ NPRM more often, and (as discussed above) agencies use NPRM more when the matter is significant. To get a sense of the size of the ideology effect, one can trace a horizontal line within any of the four displayed squares, which shows that shifting from entirely apolitical to maximally politicized



(a) Welfare is increasing in agency costs, $\delta_C = 1/6$

(b) Welfare is non-monotonic in agency costs, $\delta_C = 1/17$

(c) Welfare is non-monotonic in agency costs, $\delta_C = 1/30$.

(d) Welfare is decreasing in agency costs, $\delta_C = 1/50$.

Figure 5: Social welfare as a function of agency costs for notice-and-comment for $\delta_A \in [0, \overline{\delta}_A]$. We set $p = 5/8$, $q = 2/5$, and $b = 1/2$. We consider the case where $\delta_C < 1 - 2q$ and let δ_C vary across pictures. The horizontal dashed line denotes social welfare if the agency is never allowed to claim an exemption.

increases the predicted probability of NPRM by over ten percentage points. The effect of skill is even larger: tracing a vertical line from the bottom to the top of any square increases the predicted probability of NPRM by nearly thirty percentage points.

5 WELFARE IMPLICATIONS

Our theoretical and empirical analyses of the avoidance option have substantial ramifications for understanding the rulemaking process. Overall, when our theoretical analysis produces clear empirical implications, existing findings and our empirical analysis are supportive. Where our model's expectations are indeterminate, data are consistent with notice-and-comment proving costly to agencies which, to reiterate, corresponds to standard depictions of rulemaking.

Additionally, as our theoretical analysis enriches our understanding of the costs and benefits of allowing agency exemptions from notice-and-comment and corresponds to the empirical world, it contains lessons for social design. While some of these implications are straightforward, overall our findings suggest that notice-and-comment rulemaking has nuanced effects on social welfare and, therefore, it is difficult to make a recommendation on the best social design without conditions attached.

Consistent with our analysis, we assume that the state of the world indicates the best policy for social welfare. As a preliminary to distinguishing whether we are better making avoidance an option than always requiring notice-and-comment, we delineate how given levels of societal costs of delay from notice-and-comment, δ_C, condition how agency costs, δ_A, alter social welfare.

Lemma 3. *Welfare, societal costs, and agency costs.*

1. *Assume $\delta_C \geq 1 - 2q$. Welfare is not changing in δ_A.*
2. *Assume $\delta_C < 1 - 2q$.*
   (a) *If $\delta_A \in [0, \overline{\delta}_A]$ then welfare is continuous in δ_A. Welfare may be increasing, decreasing, or non-monotonic over this interval.*
   (b) *If $\delta_A > \overline{\delta}_A$ then welfare is not changing in δ_A.*
   (c) *When δ_C is low social welfare is maximized by $\delta_A < \delta_A^*$. When δ_C is moderate social welfare is maximized by $\delta_A \in [\underline{\delta}_A, \overline{\delta}_A]$. When δ_C is high social welfare is maximized by $\delta_A > \overline{\delta}_C$.*

As shown, a key factor is whether societal delay costs are above or below the cut-point associated with $\delta_C \geq 1 - 2q$. When above the agency always avoids and can implement its preferred policy. Welfare is pinned down by the prior q and the cost δ_C.

Below the cut-point, when $\delta_C < 1-2q$, welfare changes depending on agency costs. Higher agency costs may be beneficial or detrimental to social welfare. Increasing agency costs increases the informativeness of agency policmayking. However, somewhat unintuitively, more informative agency policy choices are not always better, as when the opposing group is active it responds by exerting less effort to comment. Additionally, the probability the agency avoids increases with its costs of delay. On the one hand, this is beneficial as society is less likely to incur the costs of delay. On the other, it is detrimental as the groups are less often able to provide new information.

Given these countervailing forces, the effect of δ_A on welfare depends on other model parameters. To see this, Figure 5 provides numerical examples demonstrating that varying

social costs can result in welfare increasing, decreasing, or being non-monotonic in agency costs for $\delta_A \in [0, \overline{\delta}_A]$. Examining each example shows varied relationships and impacts on welfare and differences in comparison to a world without the avoidance option.

First, Figure 5a shows the case where δ_C is high relative to the other cases we examine. Here welfare is increasing in agency costs. As such, it is extremely beneficial to avoid notice-and-comment which, as seen by the contrast with the dashed horizon line, tips the scale in favor of having higher agency costs.

Second, Figure 5b, a case where social costs are somewhat lower, is similar to Figure 5a except that welfare is now non-monotonic in δ_A. While social welfare is maximized by high δ_A, as δ_C is still moderately high, increasing δ_A is not always beneficial. With moderately low agency costs, increasing δ_A results in only slightly more informative agency policymaking, but groups become much less likely to comment. However, eventually the agency's policy choices become informative enough that, together with saving on delay costs, the loss of group effort is outweighed and social welfare again begins increasing in δ_A.

Third, the pattern with moderately low social costs, shown in Figure 5c, is very different than those just discussed. Now welfare is maximized by low δ_A but is not always decreasing. There is a region of moderately high agency costs for which increasing δ_A increases welfare. Here the gains from more informative agency policymaking are sufficiently high that welfare begins increasing. However, these gains are insufficiently strong to raise welfare above that with low δ_A.

Fourth, Figure 5d shows a world of very low social costs. The parameters in this example are such that increased group participation is more important than informative agency policy choices. Furthermore avoiding delay costs is not an important component of social welfare when δ_C is this low. As such, welfare is always weakly decreasing in δ_A.

Finally, in the highest agency cost range, when $\delta_A > \overline{\delta}_A$ (not depicted in Figure 5), the agency's strategy is to always choose $x = 0$ and avoid notice-and-comment. This produces a discontinuity in welfare at $\delta_A = \overline{\delta}_A$, as the agency switches from a fully pooling to a fully separating strategy. If societal delay costs are high then welfare jumps up, otherwise, with low costs, welfare drops down. Such jumps can create an additional non-monotonicity of welfare as a function of δ_A.

Hence, countervailing strategic forces complicate the overall relationship between δ_A and welfare. In different instances, high, moderate, and low agency costs of delay can be welfare–enhancing. As noted in Lemma 3, social welfare is maximized when the value of agency costs correspond to that of societal costs. High δ_A maximizes social welfare when δ_C is high; moderate δ_A maximizes welfare when δ_C is moderate; and low δ_A maximizes welfare when δ_C is low. This relationship is potentially promising. If agency and social delay costs

are correlated, e.g., if both are high in emergency situations and both are low for routine matters, then exemptions may be performing relatively well. This might suggest that the avoidance option is potentially socially desirable.

However, since exemptions have costs and benefits, this requires further analysis. It may be that removing the agency's option to take an exemption improves social welfare. As Lemma 3 characterizes social welfare with exemptions, we are now able to compare the world represented by our model to one without an exemption option

Per our discussion of Lemma 3, in our model allowing exemptions has potential social welfare benefits by avoiding socially costly delays and producing more informed policymaking by incentivizing a biased agency to separate based on its signal. But the actual avoidance choice involves costs given that groups are unable to participate, leading to less informed policy outcomes. Conversely, if exemptions are not an option the agency always proposes $x = 0$ and it is upheld unless Group 1 provides evidence to the contrary.

Proposition 6 addresses this question of when agencies should be given the authority to claim exemptions.

Proposition 6. *Welfare and avoidance.*

1. *Exemptions should be allowed when the societal costs of notice-and-comment are high,* $\delta_C \geq 1 - 2q + q^2$.

2. *Exemptions should be removed when the societal costs of notice-and-comment are moderate,* $\delta_C \in [1 - 2q, 1 - 2q + q^2)$.

3. *The benefits of exemptions depend on the environment when the societal costs of notice-and-comment are low,* $\delta_C < 1 - 2q$. *There exists* $\overline{\delta}_C(b, p, q, \delta_A) \in [0, 1 - 2q]$ *such that if* $\delta_C < \overline{\delta}_C(\cdot)$ *then exemptions should be allowed, otherwise, they should be removed.*

   (a) *If* p *is sufficiently high then exemptions should always be allowed when* $\delta_A \in [0, \overline{\delta}_A]$, *i.e.,* $\overline{\delta}_C(\cdot) = 1 - 2q$.

   (b) *If* q *is sufficiently high then there exists* p *sufficiently low such that exemptions should always be removed when* $\delta_A \in [0, \overline{\delta}_A]$, *i.e.,* $\overline{\delta}_C(\cdot) = 0$.

Analogous to the discussion of how societal costs condition how agency costs impact welfare, the results for avoidance and welfare are nuanced and, again, are conditioned by the social costs of delay. Here, three ranges of societal delay costs are key.

Intuitively, with very high delay costs, $\delta_C \geq 1 - 2q + q^2$, the court is best off allowing allowing exemptions as a choice. This is true even though, in this case, the agency uses exemptions to obtain its preferred policies whether appropriate or not.

Conversely, with moderately high delay costs, $\delta_C \in (1-2q, 1-2q+q^2)$, exemptions should be forbidden. Delay's costs are low enough that they are always worth incurring. Forcing the agency to obtain potentially informative comments is better than allowing the agency to force through its preferred policy with an exemption.

When societal delay costs are moderate to low things are more complicated. Recall that when such costs fall below $\delta_C < 1-2q$, the agency is unable to always get its preferred policy through exemptions and policymaking is more involved. With moderate social costs, $\delta_C \in (\overline{\delta}_C, 1-2q)$, exemptions should be removed. But when these social costs are low, $\delta_C \in (0, \overline{\delta}_C)$, then exemptions should be allowed.

The cut-point $\overline{\delta}_C$ depends on the characteristics of the other parameters and can take the boundary values 0 and $1-2q$. Figure 5 summarizes these welfare findings, highlighting whether or not exemptions are beneficial generally depend on the characteristics of the agency and the policymaking environment. The dashed line denotes welfare under no exemptions, while the solid lines give welfare with exemptions. Exemptions improve welfare whenever the solid line is above the dashed line and vice versa.

From a social design perspective, our welfare results lead to one clear recommendation and one more cautious observation. Overall, there is no one-size-fits-all policy prescription, and the conditions under which it is best to allow exemptions should be tailored to the characteristics of the agency and type of rule.

Our one unconditional inference is that it is always better to allow exemptions for highly skilled agencies and to forbid them for their low skilled counterparts when there is high uncertainty about the correct course of action. High skilled agencies maximize the informational benefits of allowing the option of choosing whether to go through notice-and-comment. With low skilled agencies and high uncertainty, by Proposition 5 the active group exerts a sufficiently high level of effort to make the informational cost of allowing avoidance too high.

But this recommendation is tempered by the recognition that, in general, whether exemptions should be allowed or not may be non-monotonic in societal costs. By Proposition 6, if p is sufficiently large, then exemptions should be allowed when $\delta_C > 1-2q+q^2$ and when $\delta_C < 1-2q$; however, they should be removed for $\delta_C \in [1-2q, 1-2q+q^2]$.

6 CONCLUSIONS

Understanding the structure and impacts of the rulemaking process has been a subject of interest to social scientists, legal scholars, and policy analysts. Rulemaking has been particularly relevant topic given a gridlocked world where moving policy statutorily has proven extraordinarily difficult and attention has increasingly focused on how agencies can

adjust policies directly. To date, most consideration has been given to notice-and-comment per se even though past work has acknowledged that agencies have promulgated many rules, including very important ones, via an end run around the process. With a few exceptions, social scientists have left the implications of the exemption option unexamined.

Our analysis of avoidance choices fills this considerable gap. Broadly, we demonstrate that ignoring an agency's ability to employ the exemption option strategically will obfuscate inferences about what determines agency outputs, what role the courts might play, and what impacts groups might have. Additionally, having an avoidance alternative has substantial social welfare ramifications, with there being instances where the exemption is best removed and others where it is ideally retained.

Moreover, our theoretical analysis shows that not all notice-and-comment corresponds to rulemaking being "Kabuki theater," as suggested by Elliott (1992). Rather, in a non-trivial subset of the parameter space, agencies receive messages contrary to their political aspirations, but intermediate agency and court costs incentivize mixing over avoidance and NPRM. In other words, agencies sometimes enter notice-and-comment understanding that they can be ruled against, but may also utilize notice-and-comment understanding that they can inexpensively solidify their political interests. Our ability to discriminate between these incentives is a strength of our analysis, and hopefully other scholars will help sharpen the boundaries between Kabuki and non-Kabuki NPRM.

More specifically, our theoretical analysis finds that characteristics such as a well-meaning court's costs of demanding notice-and-comment and an agency's costs and policy bias are relevant. These features structure whether we observe avoidance not only being attempted even if legally inappropriate but being used in situations where the agency is positioned either to implement a policy that it prefers at society's expense or to choose its least favorite alternative to pander to the court while sidestepping notice-and-comment's costs. Our model also shows that empirical estimates of group influence not integrating organizational strategic behavior along with avoidance are likely misspecified.

Empirically, we find considerable support for our model's predictions about agency avoidance. Some predictions are borne out by existing research, others by our own analysis. With indeterminate predictions, our model best corresponds to a world where agencies view notice-and-comment as costly — an assumption consistent with much discussion of the process (e.g., that emphasizing the attractiveness of the exemption when the need to move quickly for national security concerns is examined).

Finally, we show that whether avoidance is allowed or not can substantially impact social welfare. Court costs, which are conditioned by the likelihood that the state of the world is contrary to what an agency prefers, and the extent of an agency's bias will determine whether

a socially-regarding judge should just remove exemptions or allow avoidance as a possibility. Above a threshold of court costs bias is irrelevant, with exemptions sometimes being socially better and other times worse; below that threshold, which is partially determined by the likelihood that the state of the world corresponds to the group's preferred choice is sufficiently high, bias is key for whether exemptions should be removed (low bias) or allowed (high bias).

There are a variety of ways on which we can build on the analysis here. Broadly, continued back-and-forth between theoretical and empirical work should prove fruitful for improving our understanding of rulemaking and our ability to make policy recommendations for how to organize the bureaucracy.

For example, our theoretical and empirical models consider notice-and-comment and avoidance conditional on rulemaking occurring. Moving forward it would be productive to integrate selection into rulemaking. Theoretically, this would entail adjusting our model so that the agency either engages in rulemaking, incurring a cost to observe a signal about the state before playing per our model, or does nothing and retains the status quo, getting a payoff between 0 and 1. With selection, we would no longer see the agency engage in any rulemaking when agency costs are very high and court costs are low. Additionally, the agency's bias will alter its incentive to propose a rule. Empirically, this would involve integrating a selection equation with the main specification.

Also, future empirical analysis can benefit considerably by advances in estimating latent agency attributes. While scholars have made great progress in recent years, more disaggregated measures that pin down where we are in the parameter space are an obvious need.

Thus, our analysis has shown that exemptions are unequivocally important for rulemaking and what we observe with notice-and-comment. Models of influence need to take such options into account. And there are conditions where the avoidance alternative's existence is better for society, allowing quick action and eschewing notice-and-comments' costs, while there are others where it imposes a price on society. Nor do agency exemptions always mean that the bureaucrat is selecting her preferred policy, as sometimes she does and other times she settles on the alternative to avoid conflict.

A PROOFS

A.1 Equilibrium Behavior

Off the path of play assume that the other players believe that the action came from the $s_A = 0$ agency type.

Proof of Lemma 1. Assume that the agency avoided notice-and-comment. If $x = 1$ then the court's expected utility for upholding the policy is μ_C, while its expected utility for overturning the policy is $1 - \mu_C - \delta_C$. Thus, it upholds the policy if $\mu_C \geq \frac{1-\delta_C}{2}$. On the other hand, if $x = 0$ then upholding the policy yields $1 - \mu_C$, while overturning it yields expected utility $\mu_C - \delta_C$. In this case, the court upholds the policy if $\mu_C \leq \frac{1+\delta_C}{2}$. If the agency avoided notice-and-comment then the cost δ_A is sunk and similar comparisons yield that the court upholds $x = 1$ if $\mu_C \geq 1/2$ and upholds $x = 0$ if $\mu_C \leq 1/2$.

Proof of Lemma 2. First, assume that after the group proposes policy x the other players have belief $\mu_C = \mu_G < 1/2$. In this case, if neither group comments with new information then the judge's belief μ_C decreases and so the final policy will be $\pi = 0$. This is because, given the groups' conjectured equilibrium strategies, the judge expects G_1 to expend effort and comment if it learns that the state is $\omega = 1$. Thus, G_0 has no incentive either to expend effort or comment. On the other hand, if G_1 learns that $\omega = 1$ it will comment, as this results in $\pi = 1$. Given this, G_1's expected utility for expending effort is

$$e\mu_G - \frac{1}{2}e_1^2.$$

As this is strictly concave in effort, differentiating and solving the resulting first-order condition yields optimal effort $e_1^* = \mu_G > 0$.

Similarly, if, following proposed policy x, $\mu_G > 1/2$ then group G_1 expends no effort and does not comment, while G_0 expends effort $e_0^* = 1 - \mu_G > 0$, and comments if $\omega = 0$.

At $\mu_C = 1/2$ the judge upholds the proposed policy x. Thus, if $x = 1$ then G_0 expends effort as described above and G_1 does nothing, while this is reversed if $x = 0$.

Proof of Proposition 1. First, consider $\delta_C > 1 - 2q$. In this case, if the agency pools on avoidance and $x = 1$ then the court's expected utility for upholding is q, while its expected utility for overturning is $1 - q - \delta_C$. Thus, if $\delta_C \geq 1 - 2q$ then the court upholds. As this is the agency's highest possible payoff neither type wants to deviate from the pooling strategy.

Moving forward, assume $\delta_C \leq 1 - 2q$.

Recall that

$$\begin{aligned}\overline{\delta}_A &= b[2\mu(1) - \mu(1)^2] \\ \underline{\delta}_A &= b[\mu(1) + \mu(0) - \mu(0)\mu(1)] \\ \delta_A^* &= b[q\mu(0)],\end{aligned}$$

where $\mu(1)$ is the agency's updated belief that $\omega = 1$ after observing $s_A = 1$ and $\mu(0)$ is the agency's updated belief that $\omega = 1$ after observing $s_A = 0$. Specifically,

$$\begin{aligned}\mu(1) &= \frac{pq}{pq + (1-p)(1-q)} \\ \mu(0) &= \frac{(1-p)q}{(1-p)q + p(1-q)}.\end{aligned}$$

We break the remainder of the proof into several parts.

Case 1: $\delta_A > \overline{\delta}_A$

Assume $\delta_A > \overline{\delta}_A$. We want to show that there exists an equilibrium in which both types of the agency pool on $x = 0$ and avoid notice-and-comment.[30]

For the $s_A = 1$ type playing this strategy yields a payoff of 0. It does not choose $x = 1$ and avoidance, as the court will believe that the deviation came from the $s_A = 0$ type and overturn the policy, yielding $-\delta_A$. The same comparison shows that the $s_A = 0$ type will not deviate to $x = 0$. Going through notice-and-comment, the $s_A = 1$ type's highest possible expected utility occurs if the other players believe the deviation came from the $s_A = 1$ type. This yields expected utility $-\delta_A + b[1 - (1 - \mu(1))^2]$, but this is strictly less than 0 by the assumption that $\delta_A > \overline{\delta}_A$. As the $s_A = 0$ type's expected utility for notice-and-comment is strictly less than the expected utility to the $s_A = 1$ type, neither will deviate to notice-and-comment.

Case 2: $\delta_A \in [\underline{\delta}_A, \overline{\delta}_A]$

We now show that the conjectured strategies form a fully separating equilibrium for $\delta_A \in [\underline{\delta}_A, \overline{\delta}_A]$. In this case, if the court observes $x = 1$ and notice-and-comment then, because the

[30]Note that a semi-separating equilibrium does not exist for $\delta_A > \overline{\delta}_A$. This is because $\overline{\delta}_A$ is already defined using the best possible payoff to the agency for choosing notice-and-comment, yet the agency still does not want to deviate for $\delta_A > \overline{\delta}_A$. Furthermore, given the agency is engaging in avoidance, the different agency types do not have differing costs for choosing $x = 1$ or $x = 0$. Thus, there can be no separation with mixing across notice-and-comment or across policies for $\delta_A > \overline{\delta}_A$.

agency is supposed to play a separating strategy, absent new information it believes that $s_A = 1$. Thus, $\mu_C > 1/2$.

As such, the expected utility to the $s_A = 1$ type for not deviating from its equilibrium strategy is

$$-\delta_A + b[1 - (1 - \mu(1))(1 - \mu(1))].$$

Deviating to $x = 0$ and going through notice-and-comment yields expected utility

$$-\delta_A + b[\mu(1)\mu(0)].$$

Comparing, the condition for the agency to not deviate is:

$$\begin{aligned} &1 - (1 - \mu(1))^2 \geq \mu(1)\mu(0) \\ &\Leftrightarrow 2\mu(1) - \mu(1)^2 \geq \mu(1)\mu(0) \\ &\Leftrightarrow 2 \geq \mu(1) + \mu(0), \end{aligned}$$

where the last line holds as $\mu(1)$ and $\mu(0)$ are probabilities and strictly less than 1. Next, consider an agency deviation to avoid notice-and-comment. If it chooses $x = 0$ its payoff is 0 because the court believes it is the $s_A = 0$ type and upholds. On the other hand, choosing $x = 1$ is off the path of play. This yields expected utility $-\delta_A$ because the court believes the deviation came from the $s_A = 0$ type and, thus, it overturns the policy. Therefore, if the $s_A = 1$ type deviates to avoid notice-and-comment it would choose $x = 0$. Comparing this with its equilibrium payoff, we get that the agency will not deviate if and only if:

$$\begin{aligned} &- \delta_A + b[1 - (1 - \mu(1))^2] \geq 0 \\ &\Leftrightarrow b[2\mu(1) - \mu(1)^2] \geq \delta_A. \end{aligned}$$

The last line holds by assumption that $\delta_A \leq \overline{\delta}_A$; thus, the $s_A = 1$ type agency lacks a profitable deviation.

Now consider if the agency's signal is $s_A = 0$. Choosing $x = 0$ and avoiding notice-and-comment yields a payoff of 0. This is strictly better than avoiding notice-and-comment and choosing $x = 1$, as the court will overturn this decision yielding a payoff of $-\delta_A$. If the agency instead chooses $x = 1$ and goes through notice-and-comment its expected utility is $-\delta_A + b[1 - (1 - \mu(1))(1 - \mu(0))]$. Comparing, we get that the agency will choose $x = 0$ and

to avoid when:

$$\begin{aligned} 0 &\geq -\delta_A + b[1 - (1 - \mu(1))(1 - \mu(0))] \\ \Leftrightarrow \delta_A &\geq b[\mu(0) + \mu(1) - \mu(1)\mu(0)], \end{aligned}$$

which holds by assumption that $\delta_A \geq \underline{\delta}_A$. Finally, we need that the agency also does not want to choose $x = 0$ and go through notice-and-comment. In this case, doing so yields expected utility $-\delta_A + b[\mu(0)\mu(0)]$. Thus, the agency will not switch and go through notice-and-comment if and only if:

$$\begin{aligned} 0 &\geq -\delta_A + b[\mu(0)\mu(0)] \\ \delta_A &\geq b[\mu(0)^2]. \end{aligned}$$

Note that:

$$\begin{aligned} &\mu(0) < 1 \\ &\Leftrightarrow \mu(0)(\mu(0) + \mu(1)) < \mu(0) + \mu(1) \\ &\Leftrightarrow \mu(0)^2 < \mu(0) + \mu(1) - \mu(1)\mu(0) \\ &\Leftrightarrow b[\mu(0)^2] < \underline{\delta}_A. \end{aligned}$$

Thus, by assumption that $\underline{\delta}_A \leq \delta_A$, we have that the agency will not deviate to $x = 0$ and go through notice-and-comment.

Case 3: $\delta_A \in (\delta_A^*, \underline{\delta}_A)$

Next, assume $\delta_A \in (\delta_A^*, \underline{\delta}_A)$. Note, in such a semi-separating equilibrium after observing $x = 1$ and notice-and-comment the groups and court update their belief to

$$\mu_C(\sigma) = \frac{[p + (1-p)\sigma]q}{[p + (1-p)\sigma]q + [(1-p) + p\sigma](1-q)}.$$

Before defining $\sigma(\delta_A)$, we define three variables. First, let σ_1^* be the solution to

$$\mu_C(\sigma) = \frac{\frac{\delta_A}{b} - \mu(0)}{1 - \mu(0)}.$$

Second, define σ_2^* as the solution to

$$\mu_C(\sigma) = \frac{1}{2}.$$

Finally, let σ_3^* solve

$$\mu_C(\sigma) = \frac{\delta_A}{b\mu(0)}.$$

Now we define $\sigma(\delta_A)$ as follows:

$$\sigma(\delta_A) = \begin{cases} \sigma_1^* & \text{if } \delta_A \in [\frac{b}{2}(1+\mu(0)), \underline{\delta}_A) \\ \sigma_2^* & \text{if } \delta_A \in (\frac{b}{2}\mu(0), \frac{b}{2}[1+\mu(0)]) \\ \sigma_3^* & \text{if } \delta_A \in (\delta_A^*, \frac{b}{2}\mu(0)). \end{cases}$$

As indicated by our definition of $\sigma(\delta_A)$, we will proceed by partitioning the parameter space into three cases.

1. $\delta_A \in [\frac{b}{2}(1+\mu(0)), \underline{\delta}_A)$. From the definition of $\sigma(\delta)$ in this part of the parameter space we have $\sigma(\delta) = \sigma_1^*$. First, we show that $\mu_C(\sigma_1^*) > 1/2$.

$$\begin{aligned} &\mu_C(\sigma_1^*) > 1/2 && (1)\\ &\Leftrightarrow \frac{\frac{\delta_A}{b} - \mu(0)}{1-\mu(0)} > 1/2 && (2)\\ &\Leftrightarrow \frac{\delta_A}{b} - \mu(0) > \frac{1}{2}(1-\mu(0)) && (3)\\ &\Leftrightarrow \delta_A > b\frac{1}{2}[1+\mu(0)]. && (4) \end{aligned}$$

   Equation (1) is the condition we want to hold. Inequality (2) follows from the definition of σ_1^*. Line (3) rearranges (2) and equation (4) rearranges (3). Finally, (4) holds by assumption.

   Thus, if the $s_A = 0$ type mixes with probability σ_1^* then, in equilibrium, G_0 is the active group, optimally expends effort $1 - \mu_C(\sigma_1^*)$, and the court will uphold $x = 1$ absent contrary information. For the $s_A = 0$ type to mix between notice-and-comment with $x = 1$ and avoidance with $x = 0$, it must be indifferent between these two actions. This requires

$$0 = -\delta_A + b[1 - (1-\mu_C(\sigma_1^*))(1-\mu(0))].$$

Rearranging, we get that this holds if and only if:

$$\mu_C(\sigma_1^*) = \frac{\frac{\delta_A}{b} - \mu(0)}{1 - \mu(0)},$$

which follows from the definition of σ_1^*. As $0 > -\delta_A$ the $s_A = 0$ type will not deviate off the path to $x = 1$ and avoidance. If it chooses notice-and-comment and $x = 0$ this is also off the path of play, as such $\mu_C = \mu(0)$, group G_1 is active, and the agency's expected utility is $-\delta_A + b\mu(0)\mu(0)$. For it to not deviate requires:

$$-\delta_A + b\mu(0)\mu(0) \leq 0 \tag{5}$$

$$\Leftrightarrow b\mu(0)^2 \leq \delta_A, \tag{6}$$

where inequality (6) holds as $\mu(0) < q < 1/2$ and, by assumption, we have $b\frac{1}{2}(1 + \mu(0)) \leq \delta_A$.

Finally, for the $s_A = 1$ type its expected utility for not deviating is $-\delta_A + b[1 - (1 - \mu_C(\sigma_1^*))(1 - \mu(1))] > -\delta_A + b[1 - (1 - \mu_C(\sigma_1^*))(1 - \mu(0))] = 0 > -\delta_A$. Thus, it will not deviate to avoidance. Furthermore, deviating to $x = 0$ and notice-and-comment yields expected utility $-\delta_A + b\mu(0)\mu(1)$. As the $s_A = 1$ type's equilibrium payoff is strictly greater than 0, a sufficient condition for the agency to not deviate is:

$$-\delta_A + b\mu(0)\mu(1) \leq 0 \tag{7}$$

$$\Leftrightarrow b\mu(0)\mu(1) \leq \delta_A. \tag{8}$$

Because $\mu(0) < 1/2$ and $\mu(1) < 1$, inequality (21) holds by assumption that $\delta_A \geq b\frac{1}{2}(1 + \mu(0))$. Therefore, the $s_A = 1$ is responding optimally as well.

2. $\delta_A \in (\frac{b}{2}\mu(0), \frac{b}{2}[1 + \mu(0)])$.

At $\mu_G = 1/2$ there exists an equilibrium in which G_1 expends effort $1/2$ (and G_0 effort 0) and the court overturns $x = 1$ unless it sees information to the contrary. However, there is also an equilibrium in which G_0 expends effort $1/2$ (and G_1 effort 0) and the court upholds $x = 1$ unless G_0 provides alternative information. In order to support a semi-separating equilibrium that moves continuously through the parameter space we must introduce a public randomization device to coordinate equilibrium. In particular, for $\delta_A \in (\frac{b}{2}\mu(0), \frac{b}{2}[1 + \mu(0)])$, following $x = 1$ and notice-and-comment the groups and court play the equilibrium in which G_1 is active with probability $P(\delta_A, b, p, q)$ and play the equilibrium in which G_0 is active with probability $1 - P(\cdot)$, where $P(\cdot)$ is defined

as:

$$P(\cdot) = 1 + \mu(0) - 2\frac{\delta_A}{b}.$$

Note that $P(\cdot) \geq 0$, as $\delta_A < \frac{b}{2}[1 + \mu(0)]$, and $P(\cdot) \leq 1$, as $\delta_A > \frac{b}{2}\mu(0)$.

For the type $s_A = 0$ agency to be willing to mix with probability $\sigma(\delta_A)$ it must be indifferent between avoidance with $x = 0$ and notice-and-comment with $x = 1$, which requires that:

$$0 = -\delta_A + P(\delta_A)b\frac{1}{2}\mu(0) + (1 - P(\cdot))b\frac{1}{2}(1 + \mu(0)). \tag{9}$$

Rearranging, we get that equation (9) is satisfied if:

$$P(\cdot) = -2\frac{\delta_A}{b} + 1 + \mu(0), \tag{10}$$

which holds by the specification of $P(\delta_A)$. Thus, for all $\delta_A \in (\frac{b}{2}\mu(0), \frac{b}{2}[1 + \mu(0)])$ the agency is indifferent between notice-and-comment with $x = 1$ and avoidance with $x = 0$.

As $0 > -\delta_A$, the $s_A = 0$ type will not deviate off the path to $x = 1$ and avoidance. If it chooses notice-and-comment and $x = 0$ this is also off the path of play, as such $\mu_C = \mu(0)$, G_1 is active, and the agency's expected utility is $-\delta_A + b\mu(0)\mu(0)$. For it to not deviate requires.

$$-\delta_A + b\mu(0)\mu(0) \leq 0 \tag{11}$$

$$\Leftrightarrow b\mu(0)^2 \leq \delta_A, \tag{12}$$

where inequality (12) holds as $\mu(0) < q < 1/2$ and by assumption we have $b\mu(0)q \leq \delta_A$.

Finally, for the $s_A = 1$ type its expected utility for not deviating is $-\delta_A + P(\delta_A)b[\frac{1}{2}\mu(1)] + (1 - P(\delta_A))\frac{b}{2}[1 + \mu(1)] > -\delta_A + P(\delta_A)b\frac{1}{2}\mu(0) + (1 - P(\delta))b\frac{1}{2}(1 + \mu(0)) = 0 > -\delta_A$. Thus, it will not deviate to avoidance. Furthermore, deviating to $x = 0$ and notice-and-comment yields expected utility $-\delta_A + b\mu(0)\mu(1)$. As the $s_A = 1$ type's equilibrium payoff is strictly greater than 0, a sufficient condition for the agency to not deviate is

$$-\delta_A + b\mu(0)\mu(1) \leq 0 \tag{13}$$

$$\Leftrightarrow b\mu(0)\mu(1) \leq \delta_A. \tag{14}$$

Because $\mu(0) < 1/2$ and $\mu(1) < 1$, inequality (21) holds by assumption that $\delta_A \geq b\frac{1}{2}(1+\mu(0))$. Therefore, the $s_A = 1$ is responding optimally as well.

3. $\delta_A \in (bq\mu(0), \frac{b}{2}\mu(0))$. From the definition of $\sigma(\delta)$ in this part of the parameter space we have $\sigma(\delta) = \sigma_3^*$. First, we show that that $\mu_C(\sigma_3^*) < 1/2$.

$$\mu_C(\sigma_1^*) < 1/2 \tag{15}$$
$$\Leftrightarrow \frac{\delta_A}{b\mu(0)} < 1/2 \tag{16}$$
$$\Leftrightarrow \delta_A < \frac{1}{2}b\mu(0). \tag{17}$$

Equation (15) is the condition we want to hold. Inequality (16) follows from the definition of σ_3^*. Line (17) rearranges (16), and inequality (17) holds by assumption.

Thus, if the $s_A = 0$ type mixes with probability σ_3^* then, in equilibrium, G_1 is the active group, optimally expends effort $\mu_C(\sigma_1^*)$, and the court will overturn $x = 1$ absent contrary information. For the $s_A = 0$ type to mix between notice-and-comment with $x = 1$ and avoidance with $x = 0$ it must be indifferent between these two actions. This requires:

$$0 = -\delta_A + b[\mu_C(\sigma_3^*)\mu(0)].$$

Rearranging, we get that this holds if:

$$\mu_C(\sigma_3^*) = \frac{\delta_A}{b\mu(0)},$$

which follows from the definition of σ_3^*. As $0 > -\delta_A$, the $s_A = 0$ type will not deviate off the path to $x = 1$ and avoidance. If it chooses notice-and-comment and $x = 0$ this is also off the path of play, as such $\mu_C = \mu(0)$, group G_1 is active, and the agency's expected utility is $-\delta_A + b\mu(0)\mu(0)$. For it to not deviate requires:

$$-\delta_A + b\mu(0)\mu(0) \leq 0 \tag{18}$$
$$\Leftrightarrow b\mu(0)^2 \leq \delta_A, \tag{19}$$

where inequality (19) holds as $\mu(0) < q < 1/2$ and, by assumption, we have $b\mu(0)q \leq \delta_A$.

Finally, for the $s_A = 1$ type its expected utility for not deviating is $-\delta_A + b[\mu_C(\sigma_3^*)\mu(1)] > -\delta_A + b[\mu_C(\sigma_3^*)\mu(0)] = 0 > -\delta_A$. Thus, it will not deviate to avoidance. Furthermore,

deviating to $x = 0$ and notice-and-comment yields expected utility $-\delta_A + b\mu(0)\mu(1)$. As the $s_A = 1$ type's equilibrium payoff is strictly greater than 0, a sufficient condition for the agency to not deviate is:

$$-\delta_A + b\mu(0)\mu(1) \leq 0 \tag{20}$$

$$\Leftrightarrow b\mu(0)\mu(1) \leq \delta_A. \tag{21}$$

Because $\mu(0) < 1/2$ and $\mu(1) < 1$, inequality (21) holds by assumption that $\delta_A \geq b\frac{1}{2}(1 + \mu(0))$. Therefore, the $s_A = 1$ is responding optimally as well.

Case 4: $\delta \leq \delta_A^*$

Finally, assume $\delta \leq \delta_A^*$. We want to show that there exists an equilibrium in which both types of the agency pool on $x = 1$ and go through notice-and-comment. For the $s_A = 0$ type not deviating yields expected utility $-\delta_A + b[q\mu(0)]$. If the agency deviates to $x = 0$ and goes through notice-and-comment this is off the path of play. As the other players believe that it came from the $s_A = 0$ type this yields expected utility $-\delta_A + b[\mu(0)\mu(0)] < -\delta_A + b[q\mu(0)]$, by $\mu(0) < q$. If the agency deviates to avoid notice-and-comment we assume that the court believes the deviation came from the $s_A = 0$ type. Thus, not deviating is optimal if:

$$0 \leq -\delta_A + b[q\mu(0)]$$
$$\Leftrightarrow \delta_A \leq b[q\mu(0)],$$

where the last inequality holds by assumption that $\delta_A \leq \delta^*$. As the $s_A = 1$ type obtains strictly higher utility for its equilibrium action, it clearly will also not deviate to avoidance. Thus, the last thing that needs checking is that the $s_A = 1$ type does not want to deviate to $x = 0$ and notice-and-comment. Not deviating yields expected utility $-\delta + b[q\mu(1)]$ while deviating yields $-\delta_A + b[\mu(0)\mu(1)]$. As $q > \mu(0)$ the $s_A = 1$ type does not have an incentive to deviate from $x = 1$ and notice-and-comment.

A.2 Empirical Implications & Welfare

Proof of Proposition 2. Assuming δ_A is drawn uniformly from $[0, 1]$ and, using the definition of $\sigma(\delta_A)$ from above, the probability of observing notice-and-comment can be

written as:

$$\Phi(b,p) = Pr(s_A = 1)\overline{\delta}_A$$
$$+ Pr(s_A = 0)\Big((\underline{\delta}_A - \frac{b(1+\mu(0))}{2})\sigma_1^* + (\frac{b(1+\mu(0))}{2} - \frac{b\mu(0)}{2})\sigma_2^* + (\frac{b\mu(0)}{2} - bq\mu(0))\sigma_3^* + \delta_A^*\Big).$$

Differentiating with respect to b and consolidating terms yields:

$$\frac{\partial \Phi}{\partial b} = P(s=1)(2\mu(1) - \mu(1)^2) + P(s_A = 0)\Big((1-\mu(0))(\mu(1) - 1/2)\sigma_1^*$$
$$+ b(1-\mu(0))(\mu(1)-1/2)\frac{\partial \sigma_1^*}{\partial b} + \frac{\sigma_2^*}{2} + \mu(0)(1/2 - q)\sigma_3^* + b\mu(0)(1/2-q)\frac{\partial \sigma_3^*}{\partial b}\Big).$$

As $\mu(1) > 1/2 > q > \mu(0)$, the only terms that are not clearly positive are $\frac{\partial \sigma_1^*}{\partial b}$ and $\frac{\partial \sigma_3^*}{\partial b}$. Thus, a sufficient condition for $\frac{\partial \Phi}{\partial b} > 0$ is that $\frac{\partial \sigma_1^*}{\partial b}, \frac{\partial \sigma_3^*}{\partial b} > 0$.

Note, $\frac{\partial \mu_C(\sigma)}{\partial \sigma} < 0$. First, recall that σ_1^* solves $\mu_C(\sigma) = \frac{\frac{\delta_A}{b} - \mu(0)}{1-\mu(0)}$. Applying the implicit function theorem we get:

$$\frac{\partial \sigma_1^*}{\partial b} = -\frac{\frac{\delta_A}{(1-\mu(0))b^2}}{\partial \mu_C(\sigma_1^*)/\partial \sigma_1^*} > 0.$$

Second, we have that σ_3^* solves $\mu_C(\sigma) = \frac{\delta_A}{b\mu(0)}$. By the implicit function theorem, we have:

$$\frac{\partial \sigma_3^*}{\partial b} = -\frac{\frac{\delta_A}{\mu(0)b^2}}{\partial \mu_C(\sigma_1^*)/\partial \sigma_1^*} > 0,$$

and, therefore, $\frac{\partial \Phi(b,p)}{\partial b} > 0$.

Proof of Proposition 3. We now analyze how the probability of notice-and-comment changes as a function of agency skill, p, when costs of delay are expected to be low. Assume δ_A is drawn from the uniform distribution over $[0, \tilde{\delta}]$, where $\tilde{\delta} \in (\delta_A^*, \frac{b}{2}\mu(0))$. In this case, the probability of notice-and-comment is:

$$\Phi(b,p) = F(\delta_A^*) + \Big[F(\tilde{\delta}) - F(\delta_A^*)\Big]\Big[Pr(s_A = 1) + Pr(s_A = 0)\sigma_3^*\Big].$$

Differentiating Φ with respect to p yields

$$\begin{aligned}
\frac{\partial \Phi}{\partial p} &= f(\delta_A^*)\frac{\partial \delta_A^*}{\partial p} - f(\delta_A^*)\frac{\partial \delta_A^*}{\partial p}\Big[Pr(s_A=1) + Pr(s_A=0)\sigma_3^*\Big] \\
&+ \Big(F(\tilde{\delta}) - F(\delta_A^*)\Big)\Big(\frac{\partial P(s_A=1)}{\partial p} + Pr(s_A=0)\frac{\partial \sigma_3^*}{\partial p} + \frac{\partial Pr(s_A=0)}{\partial p}\sigma_3^*\Big) \\
&= f(\delta_A^*)\frac{\partial \delta_A^*}{\partial p}\Big[1 - Pr(s_A=1) - Pr(s_A=0)\sigma_3^*\Big] \\
&+ \Big(F(\tilde{\delta}) - F(\delta_A^*)\Big)\Big(\frac{\partial P(s_A=1)}{\partial p}(1-\sigma_3^*) + \frac{\partial \sigma_3^*}{\partial p}Pr(s_A=0)\Big).
\end{aligned}$$

A sufficient condition for the derivative to be negative is that $\frac{\partial \delta_A^*}{\partial p} < 0$, $\frac{\partial Pr(s_A=1)}{\partial p} < 0$, and $\frac{\partial \sigma_3^*}{\partial p} < 0$. First, we have:

$$\frac{\partial \delta_A^*}{\partial p} = bq\frac{\partial \mu(0)}{\partial p}.$$

As $\frac{\partial \mu(0)}{\partial p} = -\frac{(1-q)q}{(p+q-2pq)^2} < 0$, we have $\frac{\partial \delta_A^*}{\partial p} < 0$.

Next, we have $Pr(s_A=1) = pq + (1-p)(1-q)$. Differentiating yields:

$$\begin{aligned}
\frac{\partial Pr(s_A=1)}{\partial p} &= q - 1 + q \\
&= 2q - 1 < 0,
\end{aligned}$$

where the last line holds by assumption that $q < 1/2$.

To finish the proof, consider σ_3^*. Applying the implicit function theorem, we get:

$$\frac{\partial \sigma_3^*}{\partial p} = -\frac{\frac{\partial \mu_C(\sigma)}{\partial p} + \frac{\delta_A}{b\mu(0)^2}\frac{\partial \mu(0)}{\partial p}}{\partial \mu_C(\sigma)/\partial p}.$$

Differentiating $\mu_C(\sigma)$ with respect to σ yields:

$$\frac{\partial \mu_C(\sigma)}{\partial p} = -\frac{(2p-1)(1-q)q}{([p+(1-p)\sigma]q + [(1-p)+p\sigma](1-q))^2} < 0.$$

Next, differentiating $\mu_C(\sigma)$ with respect to p yields:

$$\frac{\partial \mu_C(\sigma)}{\partial p} = -\frac{(1-q)(1-\sigma^2)}{([p+(1-p)\sigma]q + [(1-p)+p\sigma](1-q))^2} < 0.$$

Finally, we already have that $\frac{\partial \mu(0)}{\partial p} < 0$. Therefore, $\frac{\sigma_3^*}{\partial p} < 0$, as required.

Proof of Proposition 4. Now assume δ_A is drawn uniformly from $[\hat{\delta}_A, 1]$, where $\hat{\delta}_A > \underline{\delta}_A$. In this case, the probability of observing notice-and-comment is:

$$\Phi(b,p) = Pr(s_A = 1)\frac{\overline{\delta}_A - \hat{\delta}_A}{1 - \hat{\delta}_A}.$$

Differentiating with respect to p yields:

$$\begin{aligned}\frac{\partial \Phi(b,p)}{\partial p} &= (2q-1)\frac{\overline{\delta}_A - \hat{\delta}_A}{1-\hat{\delta}_A} + P(s_A = 1)\frac{\partial \overline{\delta}_A}{\partial p}\Big(\frac{1}{1-\hat{\delta}_A}\Big) \\ &= \frac{2(1-p)(1-q)^2 qb}{(1-\hat{\delta}_A)(1-q-p+2pq)^2} - (1-2q)\frac{\overline{\delta}_A - \hat{\delta}_A}{1-\hat{\delta}_A}.\end{aligned}$$

Thus, the probability of observing notice-and-comment is increasing in p if:

$$\frac{2(1-p)(1-q)^2 qb}{(1-q-p+2pq)^2} > (1-2q)(\overline{\delta}_A - \hat{\delta}_A).$$

Rearranging, we have that if δ_A is drawn uniformly over $[\hat{\delta}_A, 1]$, where:

$$\hat{\delta}_A > \overline{\delta}_A - \frac{2(1-p)(1-q)^2 qb}{(1-2q)(1-q-p+2pq)^2},$$

then $\frac{\partial \Phi}{\partial p} > 0$. Note, because $\frac{2(1-p)(1-q)^2 qb}{(1-2q)(1-q-p+2pq)^2} > 0$, this $\hat{\delta}_A$ is always less than $\overline{\delta}$ and the proposition holds for $\hat{\delta}_A > \max\{\underline{\delta}_A, \overline{\delta}_A - \frac{2(1-p)(1-q)^2 qb}{(1-2q)(1-q-p+2pq)^2}\}$.

Proof of Proposition 5. The first part of the proposition follows from the equilibrium characterization.

For the second part, if $\delta_A \leq \delta_A^*$ then G_1 is active and exerts effort $e_1^* = q$, which is not a function of p. If $\delta_A \in [\delta_A^*, \frac{b}{2}\mu(0)]$ then G_1 is active. The probability it comments is $Pr(\omega = 1|s_A = 1)e_1^*$. Thus, the probability of notice-and-comment is $\mu_C(\sigma_3^*)e_1^* = \mu_C(\sigma_3^*)^2$. Differentiating, we have:

$$\begin{aligned}\frac{\partial}{\partial p}\Big[\mu_C(\sigma_3^*)^2\Big] &= 2\frac{\partial \mu_C(\sigma_3^*)}{\partial p} \\ &= -2\frac{\delta_A b}{[b\mu_A(0)]^2}\frac{\partial \mu_A(0)}{\partial p}.\end{aligned}$$

Since $\frac{\partial \mu_A(0)}{\partial p} < 0$, we have $\frac{\partial}{\partial p}\Big[\mu_C(\sigma_3^*)^2\Big] > 0$. Thus, the probability that the active group comments is weakly increasing in p for $\delta_A < \frac{b}{2}\mu(0)$.

When $\delta_A \in [\frac{b}{2}(1+\mu(0)), \underline{\delta}_A]$ the probability G_0 comments is $(1-\mu(\sigma_1^*))^2$. Differentiating yields:

$$\begin{aligned}
&\frac{\partial}{\partial p}\Big[(1-\mu_C(\sigma_1^*))^2\Big] = -2\frac{\partial \mu_C(\sigma_1^*)}{\partial p} \\
&= \frac{-2}{(1-\mu(0))^2}\Big[-(1-\mu(0))\frac{\partial \mu_A(0)}{\partial p} + (\frac{\delta_A}{b} - \mu(0))\frac{\partial \mu_A(0)}{\partial p}\Big] \\
&= \frac{-2}{(1-\mu(0))^2}\frac{\partial \mu_A(0)}{\partial p}\Big(\frac{\delta_A}{b} - 1\Big) < 0,
\end{aligned}$$

since $\frac{\partial \mu_A(0)}{\partial p} < 0$ and $\delta_A < b$.

When $\delta_A \in [\underline{\delta}_A, \overline{\delta}_A]$ the probability G_0 comments is $(1-\mu(1))^2$, which is strictly decreasing in p by $\frac{\partial \mu(1)}{\partial p} > 0$.

Proof of Lemma 3. Define $\gamma(p,q) = p + q - 2pq$.

1. Let $\delta_A \in [0, \delta_A^*)$. In this case, social welfare is given by

$$W^A = qe_1^* + (1-q) - \delta_C,$$

which does not depend on δ_A, as $e_1^* = q$ in this case.

2. Let $\delta_A \in [\delta_A^*, \frac{b}{2}\mu(0))$. In this case, social welfare is given by

$$\begin{aligned}
&W^B = Pr(s_A = 1)\Big(Pr(\omega = 1|s_A = 1)e_1^* + Pr(\omega = 0|s_A = 1) - \delta_C\Big) \\
&+ Pr(s_A = 0)\sigma_3^*\Big(Pr(\omega = 1|s_A = 0)e_1^*(+Pr(\omega = 0|s_A = 0) - \delta_C\Big) \\
&+ Pr(s_A = 0)(1-\sigma_3^*)Pr(\omega = 0|s_A = 0).
\end{aligned}$$

Note that, in this case, $e_1^* = \mu_C(\sigma_3^*) = \frac{\delta_A}{b\mu(0)}$. Differentiating, we get:

$$\frac{\partial W^B}{\partial \delta_A} = \frac{(2p-1)(1-q)\gamma(p,q)^2(-2b\delta_A(1-p)^2q^2 + b^2\delta_C(1-p)^2q^2 + \delta_A^2\gamma(p,q)^2)}{b(1-p)\Big(b(1-p)^2q^2 - \delta_A\gamma(p,q)^2\Big)^2}.$$

Given the parameter restrictions for this case, we have:

$$\frac{\partial W^B}{\partial \delta_A} < 0 \tag{22}$$

$$\Leftrightarrow \delta_A < \frac{b(1-p)q\Big((1-p)q + \sqrt{q^2(1-p)^2 - \delta_C(p+q-2pq)^2}\Big)}{(p+q-2pq)^2}. \tag{23}$$

Comparing to the boundary conditions yields:

$$\delta_A^* < RHS(22) < \frac{b}{2}\mu(0)$$
$$\Leftrightarrow \frac{3q-p-2pq}{4q+p(4-8q)} < \delta_C < \frac{q^2(2-q-p(3-2q))}{p+q-2pq}.$$

Clearly the RHS of (22) is decreasing in δ_C. Thus, for δ_C small W^B is decreasing in δ_A; for δ_C moderate W^B is decreasing in δ_A until δ_A =RHS(22) after which it is increasing; and for δ_C large W^B is increasing in δ_A.

3. Let $\delta_A \in [\frac{b}{2}\mu(0), \frac{b}{2}(1+\mu(0)))$. In this case, welfare is:

$$\begin{aligned}
W^C = Pr(s_A=1)\Bigg(& P(\delta_A)\Big(Pr(\omega=1|s_A=1)\frac{1}{2} + Pr(\omega=0|s_A=1)\Big) \\
& + (1-P(\delta_A))\Big(Pr(\omega=1|s_A=1) + Pr(\omega=0|s_A=1)\frac{1}{2}\Big) - \delta_C\Bigg) \\
& + Pr(s_A=0)\sigma_2^*\Bigg(P(\delta_A)\Big(Pr(\omega=1|s_A=0)\frac{1}{2} + Pr(\omega=0|s_A=0)\Big) \\
& + (1-P(\delta_A))\Big(Pr(\omega=1|s_A=0) + \frac{1}{2}Pr(\omega=0|s_A=0)\Big) \\
& - \delta_C\Bigg) + Pr(s_A=0)(1-\sigma_2^*)Pr(\omega=0|s_A=0).
\end{aligned}$$

Differentiating yields $\frac{\partial W^C}{\partial \delta_A} = 0$, as required, i.e., W^C is not a function of δ_A.

4. Let $\delta_A \in [\frac{b}{2}(1+\mu(0)), \underline{\delta}_A)$. In this case, welfare is:

$$\begin{aligned}
W^D = & Pr(s_A=1)\Big(Pr(\omega=1|s_A=1) + Pr(\omega=0|s_A=1)e_0^* - \delta_C\Big) \\
& + Pr(s_A=0)\sigma_1^*\Big(Pr(\omega=1|s_A=0) + Pr(\omega=0|s_A=0)e_0^* - \delta_C\Big) \\
& + Pr(s_A=0)(1-\sigma_1^*)Pr(\omega=0|s_A=0).
\end{aligned}$$

Note, $e_0^* = 1 - \mu_C(\sigma_1^*) = 1 - \frac{\frac{\delta_A}{b} - \mu(0)}{1-\mu(0)}$. Differentiating with respect to δ_A yields:

$$\frac{\partial W^D}{\partial \delta_A} =$$
$$\frac{(2p-1)q}{bp\Big(\delta_A\gamma(p,q)^2 + b(1-p)q(p(3q-2)-q)\Big)^2}\Bigg(\delta_A^2\gamma(p,q)^4 + 2b\delta_A(1-p)q\gamma(p,q)^2((3q-2)p-q)$$
$$+ b^2(q+p(1-2q))(p^2\delta_C(1-q)^2\gamma(p,q) + (1-p)^2q^2(3p+q-4pq))\Bigg)$$

Given the parameter restrictions for this case, we have:

$$\frac{\partial W^D}{\partial \delta_A} < 0 \tag{24}$$
$$\Leftrightarrow \delta_A < \frac{b\Big(q(1-p)(q+p(2-3q)) + p(1-q)\sqrt{(1-p)^2q^2 - \delta_C(p+q-2pq)^2}\Big)}{(p+q-2pq)^2}. \tag{25}$$

Comparing to the boundary conditions yields:

$$\frac{b}{2}(1+\mu(0)) < RHS(24) < \underline{\delta}_A$$
$$\Leftrightarrow \frac{pq^2\Big(2(1-q) - p(4-5q-p(1-2q))\Big)}{(1-p-q+2pq)^2(q+p(1-2q))} < \delta_C < \frac{3q-p-2pq}{4q+p(4-8q)}.$$

Clearly the RHS of (24) is decreasing in δ_C. Thus, for δ_C small W^D is decreasing in δ_A; for δ_C moderate W^D is decreasing in δ_A until δ_A =RHS(24) after which it is increasing; and for δ_C large W^D is increasing in δ_A.

Note, we cannot have that W^B and W^D are both non-monotonic over their respective regions at the same time as that would require $\delta_C < \frac{3q-p-2pq}{4q+p(4-8q)}$ and $\delta_C > < \frac{3q-p-2pq}{4q+p(4-8q)}$.

5. Next, let $\delta_A \in [\underline{\delta}_A, \overline{\delta}_A]$. In this case, welfare is given by:

$$W^E = Pr(s_A=1)\Big(Pr(\omega=1|s_A=1) + Pr(\omega=0|s_A=1)e_0^* - \delta_C\Big)$$
$$+Pr(s_A=0)Pr(\omega=0|s_A=0),$$

where $e_0^* = 1 - \mu(1)$. Thus, W^E is not a function of δ_A.

6. Finally, let $\delta_A > \overline{\delta}_A$. Welfare is:

$$W^F = 1 - q,$$

which is not a function of δ_A.

We have that for $\delta_A \in (\delta_A^*, \frac{b}{2}\mu(0))$ welfare is either strictly decreasing, strictly increasing, or decreasing then increasing in δ_A. Therefore, $W^B < \max\{W^A, W^C\}$. Similarly, for $\delta_A \in [\frac{b}{2}(1+\mu(0)), \underline{\delta}_A])$ welfare is given by W^D and we have $W^D < \max\{W^C, W^E\}$. Therefore, welfare is never maximized by $\delta_A \in (\delta_A^*, \frac{b}{2}\mu(0))$ or $\delta_A \in [\frac{b}{2}(1+\mu(0)), \underline{\delta}_A])$.

Next, it is straightforward, e.g., using Mathematica, to check that under the relevant parameter conditions it is always the case that $W^C < \max\{W^A, W^E, W^F\}$. Therefore, welfare is never maximized by $\delta_A \in [\frac{b}{2}\mu(0), \frac{b}{2}(1+\mu(0)))$.

Finally, comparing the remaining three cases, we have;

$$\begin{aligned}
W^A \geq \max\{W^E, W^F\} &\Leftrightarrow \delta_C \leq \frac{q^2(1-p-p^2-q+2pq)}{(1-p-q+2pq)(p+q-2pq)} \\
W^E \geq \max\{W^A, W^F\} &\Leftrightarrow \frac{q^2(1-p-p^2-q+2pq)}{(1-p-q+2pq)(p+q-2pq)} \leq \delta_C \leq \frac{p^2q^2}{(1-q-p(1-2q))^2} \\
W^F \geq \max\{W^A, W^E\} &\Leftrightarrow \frac{p^2q^2}{(1-q-p(1-2q))^2} \leq \delta_C.
\end{aligned}$$

Proof of Proposition 6. If the court removes exemptions then the agency must always go through notice-and-comment. In this case, there is never a separating equilibrium. Thus, unless G_1 comments with supporting information, the final outcome will be $\pi = 0$. Overall, this yields that the court's expected utility for removing exemptions is

$$W^N = q^2 + (1-q) - \delta_C.$$

On the other hand, if agencies are allowed to claim an exemption then the court's expected utility depends on δ_C. If $\delta_C \geq 1-2q$ then the agency pools on its preferred policy and avoids notice-and-comment, which the court upholds. This yields expected utility q to the court. Thus, the court allows exemptions if

$$\begin{aligned}
q^2 + 1 - q - \delta_C &\geq q \\
(1-q)^2 &\leq \delta_C,
\end{aligned}$$

and removes exemptions if $\delta_C \in [1-2q, (1-q)^2]$.

Next, assume $\delta_C < 1 - 2q$. If $\delta_A \leq \delta_A^*$ then the agency always avoids and proposes $x = 1$, as such welfare is the same with or without exemptions. We now study how welfare changes in δ_C for each region of δ_A with $\delta_A > \delta_A^*$, relative to welfare under no exemptions. Differentiating the difference between welfare with exemptions and welfare without, for each region, with respect to δ_C yields:

$$\begin{aligned}
\frac{\partial W^B}{\partial \delta_C} - \frac{\partial W^N}{\partial \delta_C} &= 1 - Pr(s_A = 1) - Pr(s_A = 0)\sigma_3^* > 0 \\
\frac{\partial W^C}{\partial \delta_C} - \frac{\partial W^N}{\partial \delta_C} &= 1 - (1 - P(\cdot))\Big(Pr(s_A = 1) + Pr(s_A = 0)\sigma_2^*\Big) > 0 \\
\frac{\partial W^D}{\partial \delta_C} - \frac{\partial W^N}{\partial \delta_C} &= 1 - Pr(s_A = 1) - Pr(s_A = 0)\sigma_1^* > 0 \\
\frac{\partial W^E}{\partial \delta_C} - \frac{\partial W^N}{\partial \delta_C} &= 1 - Pr(s_A = 1) > 0 \\
\frac{\partial W^F}{\partial \delta_C} - \frac{\partial W^N}{\partial \delta_C} &= 1 > 0
\end{aligned}$$

Therefore, given δ_A there is at most one cut-point in δ_C such that for δ_C above this cut-point welfare is higher with exemptions and δ_C below welfare is higher without. Of course, it may be that this cut-point does not fall within $(0, 1 - 2q)$.

We now show that if p is sufficiently high then it is always better to allow exemptions for all $\delta_A \in [0, \overline{\delta}_A]$. A sufficient condition for this to hold is $\frac{\partial W^B}{\partial \delta_A} > 0$ and $\frac{\partial W^D}{\partial \delta_A} > 0$

From the proof of Lemma 3 we know that W^B is always increasing in δ_A if:

$$\delta_C > \frac{q^2(2 - q - p(3 - 2q))}{p + q - 2pq}.$$

Letting $p \to 1$, this condition becomes:

$$\begin{aligned}
\delta_C &> \frac{q^2(2 - q - 3 + 2q)}{1 + q - 2q} \\
\Leftrightarrow \delta_C &> \frac{q^2(q - 1)}{1 - q} = -q^2.
\end{aligned}$$

Since $\delta_C > 0 > -q^2$ this always holds.

Next, we have that W^D is always increasing in δ_A if:

$$\delta_C > \frac{3q - p - 2pq}{4q + p(4 - 8q)}.$$

Letting $p \to 1$, this condition in the limit becomes:

$$\delta_C > \frac{3q - 1 - 2q}{4q + 4 - 8q}$$
$$\Leftrightarrow \delta_C > \frac{q-1}{4-4q} = -\frac{1}{4},$$

since $\delta_A > 0$, this always holds.

As $\frac{\partial W^B}{\partial \delta_A}$ and $\frac{\partial W^D}{\partial \delta_A}$ are continuous in p, there exists a cut-point in p such that for p above this cut-point welfare is weakly increasing for $\delta_A \in [0, \overline{\delta}_A]$, and this holds strictly for some regions.

Next, we show that always removing exemptions is better for all $\delta_A \in [0, \overline{\delta}_A]$ when p is sufficiently small and q sufficiently large. A sufficient condition for is for welfare to be decreasing over this range, which holds if $\frac{\partial W^B}{\partial \delta_A} < 0$ and $\frac{\partial W^D}{\partial \delta_A} < 0$.

From Lemma 3 we have that W^B is always decreasing if:

$$\delta_C < \frac{3q - p - 2pq}{4q + p(4 - 8q)}.$$

The largest δ_C can be is $1 - 2q$, thus, a sufficient condition for this to hold for all relevant δ_C is:

$$1 - 2q < \frac{3q - p - 2pq}{4q + p(4 - 8q)}.$$

Letting $p \to 1 - q$, this condition becomes:

$$1 - 2q < \frac{3q - (1-q) - 2(1-q)q}{4q + (1-q)(4 - 8q)}.$$

Solving, we get that the above inequality holds for $q > \overline{q}$, where $\overline{q}_1 \approx .437$.

Next, consider W^D. By Lemma 3 W^D is always decreasing in δ_A if:

$$\delta_C < \frac{pq^2\Big(2(1-q) - p(4 - 5q - p(1-2q))\Big)}{(1 - p - q + 2pq)^2(q + p(1-2q))}.$$

Again, the largest value δ_C can take is $1 - 2q$, so a sufficient condition is:

$$1 - 2q < \frac{pq^2\Big(2(1-q) - p(4 - 5q - p(1-2q))\Big)}{(1 - p - q + 2pq)^2(q + p(1-2q))}.$$

Letting $p \to 1-q$, in the limit this condition becomes:

$$1-2q < \frac{(1-q)q^2\Big(2(1-q)-(1-q)(4-5q-(1-q)(1-2q))\Big)}{(1-(1-q)-q+2(1-q)q)^2(q+(1-q)(1-2q))}.$$

Solving, we get that the above inequality holds if $q > \overline{q}$.

Hence, if $q > \overline{q}$ then there exists a cut-point in p strictly greater than $1-q$ such that if p is below this cut-point then welfare is weakly decreasing in δ_A for $\delta_A \in [0, \overline{\delta}_A]$, and this holds strictly in some regions.

A.3 Moderate Agency with State-dependent Preferences

In the main text we conceive of a moderate agency as being more indifferent than a biased agency between the two possible rules. Alternatively, a moderate agency could be, like the court, motivated to choose the policy matching the state of the world. Here we characterize equilibrium policymaking by such an agency and show that the probability of notice-and-comment is lower compared to a corresponding biased agency as defined by our original model.

Formally, assume that the agency's policy payoff is 1 if $\pi = \omega$ and a payoff of 0 if $\pi \neq \omega$. The other features of the model remain the same.

When the agency is moderate, in the sense that it wants to match the state, we show that there is always a separating equilibrium in which it proposes the policy corresponding to its information. Additionally, there exists $\overline{\delta}_A^M$ such that if $\delta_A > \overline{\delta}_A^M$ then the agency avoids notice-and-comment following either signals and if $\delta_A \leq \overline{\delta}_A^M$ then it uses notice-and-comment following either signal. Specifically, define $\overline{\delta}_A^M$ as

$$\overline{\delta}_A^M = 1 - \mu(1)(1-\mu(1)).$$

If the agency chooses to use notice-and-comment in this case, it does so to actually acquire more information to aid in its decisionmaking. Thus, it can be thought of as using notice-and-comment for its intended purpose, to make more informed decisions, rather than as a signaling device or a method to hopefully force through its preferred policy.

First, assume $\delta_A > \overline{\delta}_A^M$. We show that the agency does not want to deviate. As the agency separates based on its information and $p > 1-q$, the court upholds the agency's policy. Thus, the expected utility to the agency for not deviating if $s_A = 1$ is $\mu(s_A = 1)$. If it deviates to avoidance and $x = 0$ this yields expected utility $1 - \mu(s_A = 1)$ which is strictly less than $\mu(s_A = 1)$, as $\mu(s_A = 1) > 1/2$. If the agency deviates to notice-and-comment and

$x = 1$ then group G_0 exerts effort $1 - \mu(s_A = 1)$ trying to discover the state. Unlike with a biased agency, in this case the agency does better when the group is successful, as it simply wants policy to match the state. In this case, its expected utility is

$$\begin{aligned} &- \delta_A + (1 - \mu(s_A = 1)) + \mu(s_A = 1)\mu(s_A = 1) \\ &1 - \mu(s_A = 1)(1 - \mu(s_A = 1)) - \delta_A. \end{aligned}$$

Note, if there were no delay costs the agency would always prefer notice-and-comment as it improves the probability that the final policy matches the state. The agency will not deviate from avoidance and $x = 1$ and avoidance is selected if

$$1 - \mu(s_A = 1)(1 - \mu(s_A = 1)) - \delta_A \leq \mu(s_A = 1) \tag{26}$$

$$\Leftrightarrow 1 - \mu(s_A = 1)(1 - \mu(s_A = 1)) \leq \delta_A, \tag{27}$$

where inequality (27) holds by assumption $\delta_A > \overline{\delta}_A^M$. Next, consider a deviation to $x = 0$ and notice-and-comment. In this case, G_1 expends effort $\mu(s_A = 0)$. This yields expected utility $-\delta_A + \mu(s_A = 0) + (1 - \mu(s_A = 0))(1 - \mu(s_A = 1)$. Thus, the agency will not deviate if

$$- \delta_A + \mu(s_A = 0) + (1 - \mu(s_A = 0))(1 - \mu(s_A = 1) < \mu(s_A = 1) \tag{28}$$

$$\Leftrightarrow \mu(s_A = 0) - \mu(s_A = 1) + (1 - \mu(s_A = 0))(1 - \mu(s_A = 1) < \delta_A \tag{29}$$

$$\Leftrightarrow 1 - \mu(1)(\mu(1) - \mu(0)) < \delta_A, \tag{30}$$

where inequality (27) holds by assumption $\delta_A > \overline{\delta}_A^M$. Thus, after observing the signal $s_A = 1$ the agency does not deviate for $\delta_A > \overline{\delta}_A^M$.

Next, consider the agency's decision if $s_A = 0$. In this case, not deviating from avoidance and $x = 0$ yields payoff $1 - \mu(s_A = 0)$. If the agency instead chooses $x = 1$ this is upheld by the court, as it believes it came from the $s_A = 0$ type, and the agency's expected utility is $\mu(s_A = 0) < 1 - \mu(s_A = 0)$, as $\mu(s_A = 0) < 1/2$. Going through notice-and-comment and choosing $x = 0$ the G_1 group is active and expends effort $\mu(s_A = 0)$. This yields expected utility $-\delta_A + \mu(0) + (1 - \mu(0))(1 - \mu(0))$, thus, the agency does not deviate if

$$\begin{aligned} -\delta_A + \mu(0) + (1 - \mu(0))(1 - \mu(0)) &< 1 - \mu(s_A = 0) \\ \Leftrightarrow \mu(0) + (1 - \mu(0))(1 - \mu(0)) - (1 - \mu(0)) &< \delta_A \\ \Leftrightarrow \mu(0)^2 &< \delta_A, \end{aligned}$$

where the last inequality holds by assumption that $\delta_A > \overline{\delta}_A^M$. Choosing $x = 1$ and going through notice-and-comment the G_0 group is active and expends effort $1 - \mu(1)$. This yields expected utility to the agency of $-\delta_A + (1 - \mu(1)) + \mu(1)\mu(0)$. Therefore, the agency does not deviate if

$$\begin{aligned} -\delta_A + (1 - \mu(1)) + \mu(1)\mu(0) &< 1 - \mu(0) \\ \Leftrightarrow \mu(0) - \mu(1) + \mu(1)\mu(0) &< \delta_A, \end{aligned}$$

which holds by $\delta_A > \overline{\delta}_A^M$.

In the baseline model, Proposition 2 shows that the probability of notice-and-comment is increasing in agency bias. Furthermore, if $b \to \infty$ then $Pr(\text{notice-and-comment}) \to 1$ and if $b \to 0$ then $Pr(\text{notice-and-comment}) \to 0$. Thus, there exists $\overline{b}$ such that if $b > \overline{b}$ then the probability of notice-and-comment is higher with a biased agency than an unbiased agency with state-dependent preferences.

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