Reviewing Fast or Slow: A Theory of Summary Reversal in the Judicial Hierarchy[*]

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Abstract

Appellate courts with discretionary dockets have multiple ways to review lower courts. We develop a formal model that evaluates the tradeoffs between "full review"—which features full briefing, oral arguments, and signed opinions—versus "quick review," where a higher court can summarily reverse a lower court. We show that having the option of costless summary reversal can increase compliance by lower courts, but also distort their behavior compared to relying only on costly full review. When the higher court is uncertain about the lower court's preferences, the threat of summary reversal can lead an aligned lower court to "pander" and issue the opposite disposition to that preferred by the higher court. Access to summary reversal can therefore harm the higher court in some circumstances. Our analysis provides a theoretical foundation for growing concern over the U.S. Supreme Court's "shadow docket"—of which summarily reversals are a component—which has been empirically focused to date. *Forthcoming in the **American Journal of Political Science**.*

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Superiors in hierarchical organizations must often decide how much time, energy, and expense to invest in reviewing the decisions made by their agents before attempting to revise them (Laffont and Martimort 2009). Given the potential for noncompliance by agents, principals face a tradeoff. By taking the time needed to learn the specific circumstances surrounding an agent's decision, a principal can ensure that any revisions she makes will improve that decision. By foregoing these steps, a principal can economize on her time and energy—but doing so increases the risk that she will revise the agent's decision in error.

In this paper we develop a formal model to evaluate such "full" vs "quick" reviews in the context of judicial hierarchies.[1] The availability of expedited procedures is a general phenomenon across judicial institutions. Trial courts in most common law systems have the option to end a legal dispute via summary judgment, whereby a judge declares one party a winner before trial.[2] On the U.S. Courts of Appeals, only a minority of cases are granted the "full review" of oral arguments; the remainder are decided based on the litigants' briefs. Finally, many apex courts in the United States and other countries have a procedure to summarily rule on a lower court decision without a full re-hearing on appeal.[3] The

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[1]While our focus is on governmental institutions, the choice of full versus quick review also arises constantly in academia—journal editors often must decide whether to exercise quick review by desk rejecting a paper they believe has little to no chance of publication versus the "cost" of seeking out full review in the form of peer reviews. For an interesting back-and-forth on the value of desk rejection and the incentive it creates for editors and authors, cf. Gibson (2021) and Bonneau and Kanthak (2021).

[2]See `https://judiciariesworldwide.fjc.gov/civil-litigation#judgment` for a helpful review of civil litigation procedures in comparative perspective.

[3]On the use of summary reversals in the American states, see Long (2023). To give three comparative examples, litigants in Canadian federal courts can request to a court that their motion "be decided on the basis of written representations" (i.e. forgoing oral arguments), which the Court may grant; see Rule 369 at `https://laws-lois.justice.gc.ca/eng/regulations/SOR-98-106/section-369.html`. Next, cases in the European Court of Human Rights are usually heard by a panel of five judges, but its rules allow for swift disposal of a petition by a single judge "where the material submitted by the appli-

key insight of our analysis is that a principal's mode of review does not just implicate the aforementioned benefits and costs. Rather, it also meaningfully affects the incentives of a better-informed agent to decide in accordance with the principal's preferences. In particular, a reliance on quick versus full review can *distort* an agent's incentives sufficiently to outweigh the efficiency benefits, an insight with far reaching implications across judicial institutions.

Our particular focus is the United States Supreme Court. Since gaining nearly full discretion over its docket in 1925, the Court has adjudicated the vast majority of cases in which litigants seek the justices' review in two ways: by denying certiorari ("cert"), which results in the lower court's decision remaining in place, or through its "merits" docket, which involves full consideration by the Court, including oral arguments and (usually) signed opinions. The emergence of a lopsided 6-3 conservative court following President Trump's three appointments in his first term (Neil Gorsuch, Brett Kavanaugh, and Amy Coney Barrett), however, has placed a critical spotlight on the expedited procedure of *summary reversals*, whereby the Court grants cert and reverses the lower court without written briefs on the merits or full arguments.[4] Summary reversals are a critical element of the Court's broader "shadow docket," which describes all the decisions the Court makes other than through the merits docket (Baude 2015, Vladeck 2023). While the Court has always conducted much of its work through the shadow docket, many commentators and critics have argued that the Court has increasingly used it to make legal policy in ways that earlier courts had shied away from (see

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cant is on its own sufficient to disclose that the application is inadmissible or should be struck out of the list"—see Rule 49 at `https://www.echr.coe.int/documents/d/echr/rules_court_eng`. Finally, the French Court of Cassation (the country's highest court) allows for the dismissal of a an appeal without any reasoning "where the appeal is inadmissible or where it is manifestly not such as to result in cassation" (i.e. reversal); see Article 1014 of the French Code of civil procedure at `https://french-business-law.com/french-legislation-art/article-1014-of-the-french-code-of-civil-procedure/`.

[4]Summary reversals are usually accompanied by opinions, but they are typically much shorter than merits opinions, and are usually issued as a "per curiam" opinion (i.e., in the name of the Court overall), rather than as a signed opinion by an individual justice.

e.g. Hartnett 2016, Chen 2019, Baum 2020).

In our model, a lower court (the agent) initially hears a case and decides whether to make a judgment in line with a higher court's known preferences. The higher court (the principal) observes the decision of the lower court, but not the specific case facts. If she believes that the lower court's decision may have been in error, she has two options to modify it. She can engage in a costly full review, thereby learning the specific case facts and reversing the lower court if warranted. Alternatively, she can simply summarily reverse the lower court, avoiding the cost of a full review, but risking reversal of a correct decision given the unknown case facts. Finally, a crucial feature of our model is that the higher court is uncertain about the lower court's exact preferences on the particular case, and specifically entertains the possibility that he is either *aligned* (i.e. shares her preferences given the case facts) or *misaligned* (i.e., has differing preferences). Since the higher court does not precisely know the lower court's "type," she cannot fully base her review strategy on it.

The central distinction between reversal after a full review and a summary reversal—that the latter is done with *less information* about the case—turns out to crucially affect the incentives of a reversal-averse lower court. Both tools can discourage non-compliance by the lower court, which we define as ruling in accordance with his own preferences rather than the higher court's. However, only summary reversal creates a risk that the lower court will be punished via reversal for doing exactly what it should have—making a difficult decision that goes against the higher court's *prior* beliefs, but is actually consistent with her true preferences given the case facts. This distinction lies at the heart of our results about the surprising effects of summary reversal on lower court behavior.

Our first main result is that summary reversal can indeed reduce noncompliance by the lower court, in the sense of reducing the set of case facts where he will rule in accordance with his own preferences rather than the higher court's. Since summary reversal is costless, a minimum level of compliance is necessary (in expectation) to ensure that the higher court will not just summarily reverse any suspicious disposition. In the equilibrium of our model, the

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lower court must always meets this threshold—this effectively acts an additional constraint on lower court behavior relative to the "standard" judicial oversight model that lacks a summary reversal option. Access to summary reversals therefore generates weakly more compliance than what is elicited when the higher court can only employ full review.

Second and more surprisingly, summary reversal can induce *pandering* by the lower court. Pandering in this context means choosing a disposition in line with the higher court's *prior* beliefs about the case facts, but inconsistent with her actual preferences if the actual case facts were known. One consequence of this pandering is the disappearance of the well-known "Nixon goes to China" result in the formal theory literature on judicial auditing, which states that a higher court should never review a lower court disposition that goes against its ex-ante bias because it is sure to be compliant—e.g. a conservative higher court should never review a conservative decision by a more liberal lower court (Cameron, Segal and Songer 2000). In the presence of pandering, the higher court can no longer be sure that such "counter-bias" decisions are in fact compliant; it may therefore still review such dispositions, albeit less often than it reviews "pro-bias" ones.

Third and most importantly, since summary reversal may trigger pandering, access to it may not actually benefit the higher court. On the one hand, such access will always weakly reduce non-compliance by the lower court. On the other hand, it may also sometimes induce pandering by the lower court. In fact, it is *precisely when* summary reversal strictly reduces noncompliance in expectation (because it is sometimes being used) that it *also* triggers pandering in expectation—in our model, summary reversal's beneficial and perverse effects are inextricably linked. As a result, the higher court can be worse off overall by having access to summary reversal despite her full control over when to use it.

Interestingly, the preceding result is *not* because the pandering that summary reversal elicits is somehow "greater than" the noncompliance that it reduces; in equilibrium, their direct effects on the higher court's utility perfectly balance each other out. Rather, it is because this increase in both compliance and pandering also makes the lower court's decisions

more informative about the underlying case facts, which paradoxically *degrades the value of full review.* This degradation is worsened when full reviews are a more valuable tool because they are "cheaper" to conduct in expectation. It is also worsened when the higher court's prior dispositional preferences are relatively moderate as compared to the lower court; this causes her to "overuse" summary reversal relative to its modest corrective benefit.

The preceding raises the question of why the higher court does not simply reduce its use of summary reversal if it triggers excessive pandering. As in many political agency models, the answer is that the higher court has a commitment problem. Specifically, at the time the higher court decides whether to summarily reverse a suspicious disposition, she already knows that pandering has not occurred; she therefore cannot internalize the effect of her decision on the lower court's *ex-ante* incentive to pander. This observation suggests that the higher court may benefit from the presence of rules or norms that directly constrain her use of summary reversal, or more broadly discourage overtly "ideological" behavior.

Lastly, our model yields predictions about when lower court pandering will be more severe. If such pandering is already occurring, then increasing the ideological distance between the higher and lower courts (in expectation) will only make it worse. A "busier" higher court more reliant on summary reversal will also elicit more pandering. Finally, it is tempting to conjecture that increasing the sanctions that lower courts experience from reversal can help. However, we show that doing so is a double-edged sword. Increasing reversal sanctions can indeed reduce pandering by making the threat of reversal via full review more effective at limiting noncompliance. However, it can also worsen pandering by making the lower court even more fearful that "suspicious" but correct decisions will be summarily reversed. Collectively, these results have important implications for understanding the use and consequences of summary reversals by the Supreme Court, and point towards a broader theoretical understanding of the importance of the shadow docket.

Related Literature

Our theory can be situated in three distinct but overlapping literatures on oversight within principal-agent relationships. We first connect to a broad literature that spans across political science, economics, finance, and accounting that examines models in which a principal can "audit" the actions or information of her agent at some cost. Graetz, Reinganum and Wilde (1986), for example, developed one of the earliest formal theories of tax auditing, in which the threat of a costly audit by the IRS can deter non-compliance by taxpayers. In the realm of bureaucratic politics specifically, several models allow principals (e.g. Congress and/or the president) to audit a bureaucrat's decision at some cost, which is typically found to induce better behavior from the agency (see e.g. Banks 1989, Ting 2001, Prendergast 2003, Gailmard 2009, Acs 2019).

We next contribute directly to a literature in judicial politics on "strategic auditing," which examines how higher courts in the judicial hierarchy (e.g. the Supreme Court) can use their discretionary docket to target cases for review, thereby improving the incentives of lower courts (see Cameron, Segal and Songer 2000, Spitzer and Talley 2000). The structure of these models has been extended to examine different aspects of decision making in the judicial hierarchy such as the role of whistleblowing (Beim, Hirsch and Kastellec 2014); how combining rule development and dispositions affects the interaction of lower and higher courts (Carrubba and Clark 2012); and how the Supreme Court's "rule of four"—under which it takes only four justices to grant cert—affects compliance (Lax 2003).

While the questions asked and structures invoked in these papers differ in important ways, they share two common features: (1) the higher court must first pay some cost in order to gain the *ability* to reverse the lower court, and (2) paying this cost is "bundled with" learning the case facts. Given that the certiorari process has motivated the strategic auditing literature, these initial assumptions made sense. After all, the modern Supreme Court now hears fewer than 70 cases per term (out of the thousands of cert petitions filed each term), so the opportunity cost of granting cert is high, and a grant allows the justices

(and their clerks) to devote considerable time and effort to a case. The availability of summary reversal, however, renders these foundational assumptions suspect. Stepping back from the judicial hierarchy and thinking more generally about the Supreme Court's oversight of lower courts as a principal-agent problem, the limitations of this approach become clear. In most hierarchical organizations, bosses can outright reject proposals from their subordinates without due diligence or explanation. When engaging in summary reversal the Supreme Court justices do the same; our model allows for this action, while existing models do not.

Finally, our finding that lower courts may pander connects to the sizable literature studying the accountability relationship between voters and incumbents using principal-agent models (see Ashworth (2012) for a review). Such models typically combine "moral hazard" (i.e., the voters not seeing everything that the incumbent does or knows) with "adverse selection" (i.e., the voters not knowing whether the incumbent is the sort of "type" that they wish to reelect), and examine how an incumbent's incentive to signal that he is a desirable type distorts his policymaking. The term pandering typically describes a particular type of distortion—an incumbent (i.e., the agent) selecting the action initially favored by "popular opinion" (the voter's prior) despite privately knowing that it does not serve the voter's best interests, so as to signal he is the sort of incumbent the voter should wish to retain (e.g. Canes-Wrone, Herron and Shotts (2001) and Maskin and Tirole (2004)).

The pandering in our model has both similarities and differences with this traditional sort. Our theory also involves an agent (a lower court) who sometimes distorts his choice in the direction of the principal's prior in order to achieve a desirable end. However, our agent cannot be replaced, so pandering is not driven by his "career concerns" vis-a-vis the principal—rather, he is reversal-averse, as is typical in judicial hierarchy models. In addition, summary reversal distorts the behavior of both the "bad" type of agent (a misaligned lower court) and the "good" type of agent (an aligned lower court)—and unusually, simultaneously *improves* the behavior of the bad type, while *worsening* the behavior of the good type.

The Model

There are two players in the model: a higher court (H) and a lower court (L); we refer to the lower court as "he" and the higher court as "she." The play of the game determines the outcome of a case. Following other models of the judicial hierarchy (most closely Beim, Hirsch and Kastellec (2014)), we assume that the facts of the case map onto a single, continuous dimension X that determines the extent to which the liberal outcome is more appropriate; x denotes the case's location on X. A court makes either a "liberal" or "conservative" disposition decision d, denoted by ℓ (for liberal) and c (for conservative), respectively.

The players care about the final outcome of the case. We assume that each player's preferences are described by a cutpoint $I \in [0, 1]$ such that for $x < I$ the player prefers the conservative outcome and for $x \geq I$ the player prefers the liberal outcome. More specifically, all players derive utility from the final disposition of the case, and we let $u(x, I, d)$ denote the utility of a player with cutpoint I for disposition d given case facts x, where x is assumed to be uniformly distributed over $[0, 1]$. Without loss of generality the utility from the conservative disposition is normalized to $u(x, I, c) = 0$, and the utility from the liberal disposition is assumed to be $u(x, I, \ell) = x - I$. A player's net benefit from the final disposition matching her preferences is thus $|x - I|$.[5]

To provide more intuition for the case space, it is often presented in the context of search-and-seizure cases (Cameron, Segal and Songer 2000, Lax 2003, Kastellec 2007, Beim, Hirsch and Kastellec 2014, see e.g.). As shown in Figure 1, in this issue area, the case space captures degree of intrusiveness of a search, where cases further to the left are less intrusive, and vice versa. For instance, a very intrusive search would be the police breaking down someone's door in the middle of the night without a warrant, while an unobtrusive search would be briefly stopping someone on the street to ask them a question. In terms of dispositions, a search is either held reasonable (the "conservative" outcome) or unreasonable (the "liberal" outcome). This formulation means that as x increases, any judge's relative benefit for the

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[5]This is isomorphic to payoff formulation with a net benefit of $|x - I|$ for ruling correctly.

x = case facts (degree of intrusiveness of search)
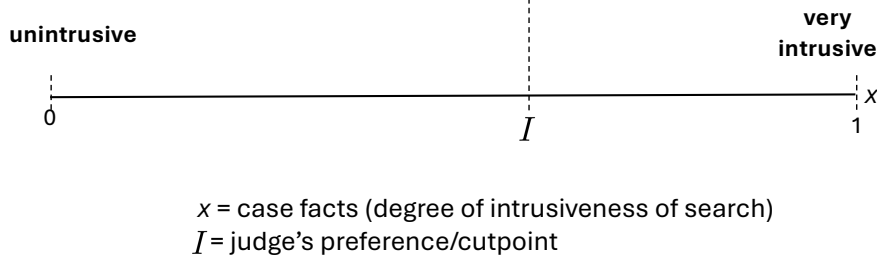I = judge's preference/cutpoint

Figure 1: Cases and preferences in the case space, in the context of search-and-seizure cases.

liberal versus the conservative outcome increases. Note that this also means that as a judge's preferences become more conservative (i.e. as I increases), that judge will prefer more cases be decided in the conservative direction. Thus, given the structure of the case space, cases and preferences can be thought of as moving in "opposite" directions.[6]

In a slight abuse of notation, we denote the higher court's cutpoint by H and the lower court's cutpoint by L. The higher court's cutpoint H is common knowledge at the start of the game; we further assume her ex ante optimal disposition is conservative ($H > \frac{1}{2}$). In contrast, the lower court's cutpoint L is initially *unknown* to the higher court and may take one of two values $\{A, M\}$, where A denotes "aligned" and M denotes "misaligned." At the start of the game nature selects the lower court's preferences to be aligned ($L = A$) with probability p and misaligned ($L = M$) otherwise. An aligned-type lower court has an ideal cutpoint equal to the higher court ($A = H$), but a misaligned-type lower court is more liberal ($M < H$).[7] The higher court is thus certain that the lower court is *at least weakly* more liberal, so that in equilibrium a liberal disposition is considered more suspect. To simplify the analysis we further assume M is sufficiently liberal that it is optimal for the

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[6]This preference structure is also a reduced form for a setting in which players have quadratic utility for policy $y \in \mathbb{R}$ given "state" $x \in \mathbb{R}$ of the form $u_I(y; x) = -(x_I - (y - x))^2$ (as is conventionally assumed in many models of bureaucratic politics), and a liberal versus conservative ruling implements the policy $y_\ell < y_C$. An individual's threshold for preferring the liberal outcome in x-space is then $I = \frac{y_\ell + y_c}{2} - x_I$.

[7]From this point forward, we use "aligned lower court" and "misaligned lower court" as shorthand for aligned-type lower court and misaligned-type lower court.
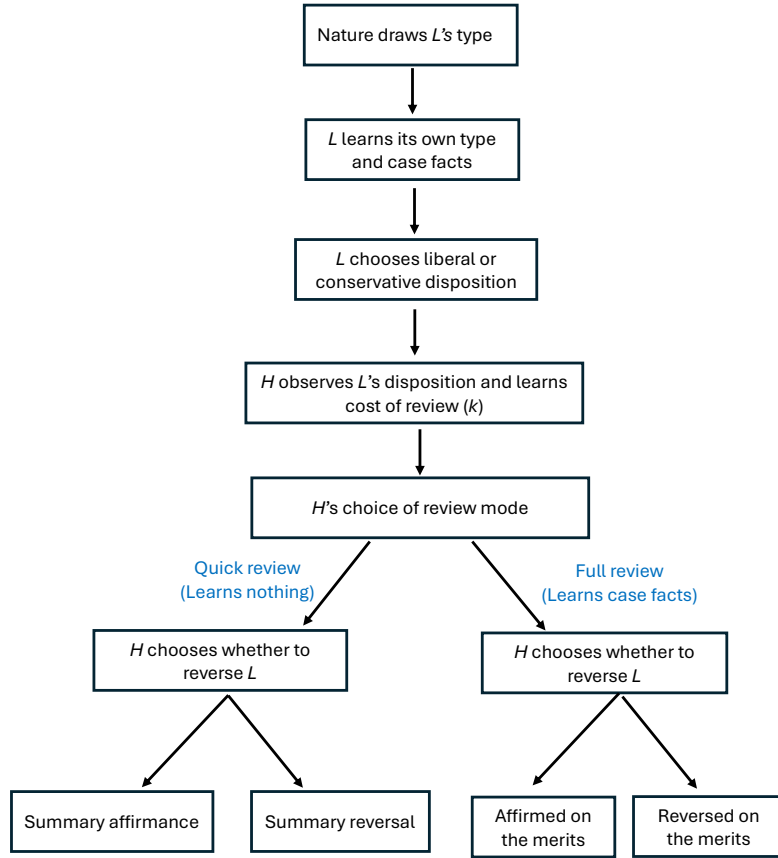
Figure 2: Sequence of play.

higher court to summarily reverse the liberal disposition if she believes the lower court to be ruling sincerely (and does not know her type).[8]

The sequence of play is summarized in Figure 2. Nature first draws the lower court's type L and the case facts x; for simplicity we say that the case facts are conservative or liberal when that is the higher court's ideal disposition. The lower court type and case facts are then revealed to the lower court (but not the higher court), after which the lower court chooses a liberal or conservative disposition $d \in \{\ell, c\}$, which H observes.

The game then moves to the higher court. Like most models of the judicial hierarchy we abstract away from litigants' choice of appeals, and assume that all lower court decisions are available for review. The higher court first decides whether to engage in quick review or

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[8]The exact condition is $\max\{M, 0\} < H - \frac{1-H}{\sqrt{1-p}}$. All results are symmetric to the opposite ordering of H and M; that is, assuming both that $H < \frac{1}{2}$ and that M is sufficiently conservative that H would summarily reverse a sincerely-issued conservative disposition.

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full review, which we label the "mode of review." She then decides whether to uphold or reverse the lower court. Full review involves learning the true case facts x before this reversal decision, while quick review involves making it under uncertainty. A reversal or affirmance after quick review are a "summary reversal" and "summary affirmance," respectively.[9] The decision to conduct a full review in our model is *purely informational*, in contrast to standard judicial hierarchy models where full review combines acquiring information (about the case facts) with acquiring the freedom to reverse the lower court.

Finally, two other parameters affect the players' utility. First, following Beim, Hirsch and Kastellec (2014) H's cost of full review k is probabilistic and distributed uniformly over $[0, \bar{k}]$ with CDF $G(k) = \frac{k}{\bar{k}}$, where $\bar{k} \geq 1$. This cost is known to H when she is deciding whether to conduct a full review, but unknown to L when choosing a disposition. Intuitively, L is uncertain about how much H cares about the case ending in its preferred disposition relative to the costs of hearing the case. Second, if the lower court is reversed he suffers a sanctioning cost $\epsilon_L > 0$, regardless of whether he is reversed after full or quick review (recalling that $L \in \{A, M\}$ denotes the lower court's type). Table 1 summarizes the notation in the model.

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[9]In substantive terms the sequence of play abstracts away a bit from actual practice on the U.S. Supreme Court, in which summary reversals technically come after a grant of cert. In addition, both denial of cert and "DIGs" (i.e. to dismiss a case as improvidently granted, which occurs after cert is granted) fall into the model's "summary affirmance" bucket, despite looking qualitatively different in practice. These differences in sequencing are irrelevant for our analysis because we have modeled the higher court as a unitary actor, but could matter meaningfully in a more complex model that explicitly treats H as a collective-choice body and incorporates the "Rule of Four" for cert—see e.g. Lax (2003) and Sasso and Judd (2022). For example, a sub-majority of four justices may anticipate that granting cert would make a subsequent summary affirmance via a DIG costlier than an up front denial of cert, which would distort the cert decision. Similarly, the cert pivot and the overall median justice who prefer the same outcome might have different views about whether to use summary reversal or full reversal to dispose a case, which would complicate the analysis.

Variable	Definition
	Parameters
H	Ideal cutpoint of higher court
$L \in \{M, A\}$	Ideal cutpoint (i.e. type) of lower court
M	Ideal cutpoint of "misaligned"-type lower court
A	Ideal cutpoint of "aligned"-type lower court
k	Higher court cost of review
p	Probability lower court is aligned type
ϵ_L	Sanction cost of being reversed for lower court of type L
	Quantities of interest
x_L	Cutpoint used by lower court of type $L \in \{A, M\}$
ϕ_d	Cost threshold for reviewing a disposition $d \in \{\ell, c\}$
α	Probability of summarily reversing a liberal disposition conditional on choosing not to review it
β	Probability of summarily reversing a conservative disposition conditional on choosing not to review it
$\Lambda_H(x_A, x_M)$	Higher court net benefit of choosing ℓ (liberal) conditional on the lower court choosing ℓ

Table 1: Summary of Notation. The top section summarizes parameters in the model, while the bottom section summarizes quantities of interest (many of which we introduce below). We note that that a $*$ in the text below denotes an equilibrium quantity of interest.

Interpreting Preference Uncertainty

Because the assumption that lower court preferences are not perfectly known is unusual in the judicial hierarchy literature, a discussion is warranted; we offer three interpretations.

One interpretation is literal; the higher court simply does not know the lower court's exact underlying legal ideology, in the sense of knowing exactly how it would rule under all conceivable circumstances. The Supreme Court oversees hundreds of lower federal court judges, and also reviews the decisions of state courts. While the justices surely come to have a general sense of the underlying preferences of judges on the Court of Appeals (whose cases the Supreme Court is most likely review), the sheer number of judges in the American judicial system, combined with the regularity of turnover across lower federal and state courts, means that there will always be some sets of case facts where the justices are uncertain about the exact sincere ideal disposition of the judges they are reviewing.

A second relates to the fact that the Supreme Court almost always directly reviews the decisions of *multimember* appellate courts. The "panel effects" literature documents that the rulings of three-judge panels differ systematically from what a median-voter model would predict (see e.g. Sunstein et al. 2006, Kastellec 2011, Fischman 2015, Hinkle 2017);

an ideologically diverse panel (e.g., with one Republican appointee and two Democratic appointees) is more likely to make a decision against the ex-ante majority preference than an ideologically homogenous panel (e.g., an all-Democratic panel). Our assumption that the higher court is uncertain about the lower court's preferences may be alternatively interpreted as an assumption that she is uncertain about the specifics of intra-panel bargaining, and thus the extent of these "panel effects."

A third is that the facts of some cases are "multidimensional," leading to uncertainty about the degree to which a case implicates issues that divide the higher and lower courts. For example, the higher court may be more tolerant of intrusive searches when certain national security issues are implicated, but uncertain about the extent to which this is true absent absent a full rehearing. This sort of "case" uncertainty is actually isomorphic to our assumption that the higher court is uncertain about the lower court's preferences because we only model the interaction over a single case.

Preliminary Analysis

Our solution concept is Perfect Bayesian Equilibrium. At the most general level, summary reversal increases compliance by a misaligned lower court and incentivizes a kind of pandering by an aligned lower court, in which he sometimes chooses the less suspect disposition to avoid being summarily reversed. The probability of summary reversal required to keep a misaligned lower court adequately compliant incentivizes an aligned lower court to pander on cases where the losses from an incorrect ruling are not too great.

Formally, a strategy for the lower court is a mapping from his privately known preferences and the set of possible case facts to the set of dispositions $\{A, M\} \times X \to \{c, \ell\}$. The higher court's strategy consists of two parts. First, she must decide whether to conduct a full review of the case after observing the lower court's disposition, through which the exact case facts x will be learned; this choice is described as a mapping from the set of lower-court dispositions and review costs to a review decision $k \times \{c, \ell\} \to \{\text{Review}, \text{Don't Review}\}$. If she conducts a full review and learns the true case facts x, she will clearly reverse the lower

court's disposition d if and only if it was inconsistent with her ideal cutpoint H. If she does *not* conduct a full review, however, she must decide whether or not to *summarily* reverse the lower court $\{c, \ell\} \to \{\text{Reverse}, \text{Uphold}\}$ given the inference about the case facts that she has drawn from the disposition alone.

Despite the potential complexity of these strategies, we can characterize the equilibria of interest using a series of cutpoints and reversal probabilities as follows.

Remark 1. *We restrict attention to strategy profiles that can be described by quantities $(x_A, x_M, \phi^\ell, \phi^c, \alpha, \beta)$ as follows.*

1. *A lower court of type $L \in \{A, M\}$ chooses the liberal disposition $(d = \ell)$ if $x \geq x_L$ and the conservative disposition $(d = c)$ otherwise.*

2. *After observing the lower court's disposition $d \in \{c, \ell\}$, the higher court conducts a full review if and only if $k \leq \phi^d$. Upon review, she learns the true case facts x and reverses the lower court's disposition if and only if it is inconsistent with her cutpoint H.*

3. *If the lower court chooses the liberal (conservative) disposition and the higher court declines to review, then she summarily reverses with probability α (β).*

The form of the lower court's strategy is depicted in Figure 3. Given his privately known ideal cutpoint $L \in \{A, M\}$, the lower court chooses the conservative disposition for sufficiently conservative case facts $(x < x_L)$; otherwise he chooses the liberal disposition. We refer to the lower court ruling liberally when he disagrees with the higher court about the ideal disposition $(L < x < H)$ as noncompliance, and to the lower court ruling conservatively when he and higher court agree the ideal disposition is liberal $(L \leq H < x)$ as pandering.

The form of the higher court's strategy is depicted in Figure 4. If the lower court ruled liberally $(d = \ell)$, the higher court will conduct a full review if her costs are sufficiently low $(k \leq \phi^\ell)$; otherwise she will decline a full review and *summarily reverse* with probability α. If instead the lower court ruled conservatively $(d = c)$ the form of the higher court's strategy is the same, but with a distinct review threshold ϕ^c and probability of summary reversal β.

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Form of Lower Court Strategy

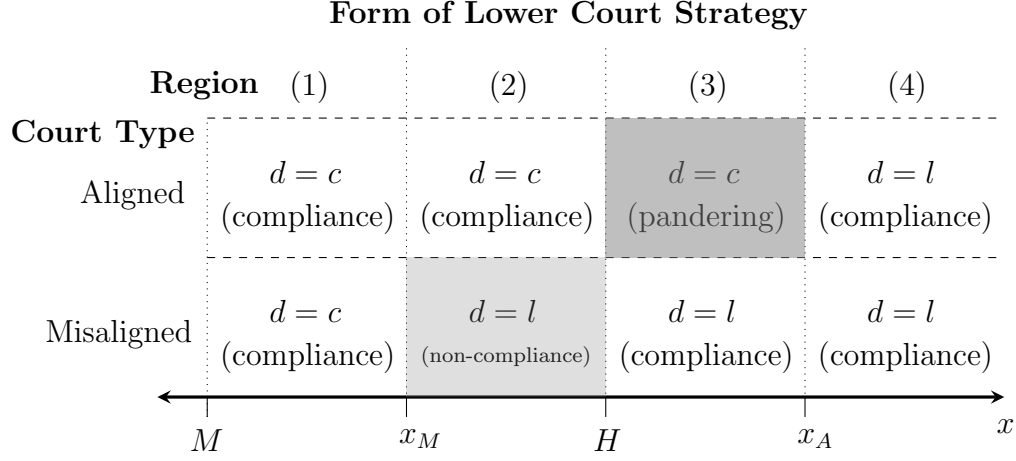| Region	(1)	(2)	(3)	(4)
Court Type				
Aligned	$d = c$ (compliance)	$d = c$ (compliance)	$d = c$ (pandering)	$d = l$ (compliance)
Misaligned	$d = c$ (compliance)	$d = l$ (non-compliance)	$d = l$ (compliance)	$d = l$ (compliance)

$$M \qquad x_M \qquad H \qquad x_A \qquad x$$

Figure 3: The Lower Court's Actions in Equilibrium. In Region 2, the misaligned lower court does not comply with higher court preferences and chooses *lib*. In Region 3, the aligned lower court panders and chooses *con* despite both he and the higher court preferring *lib*.
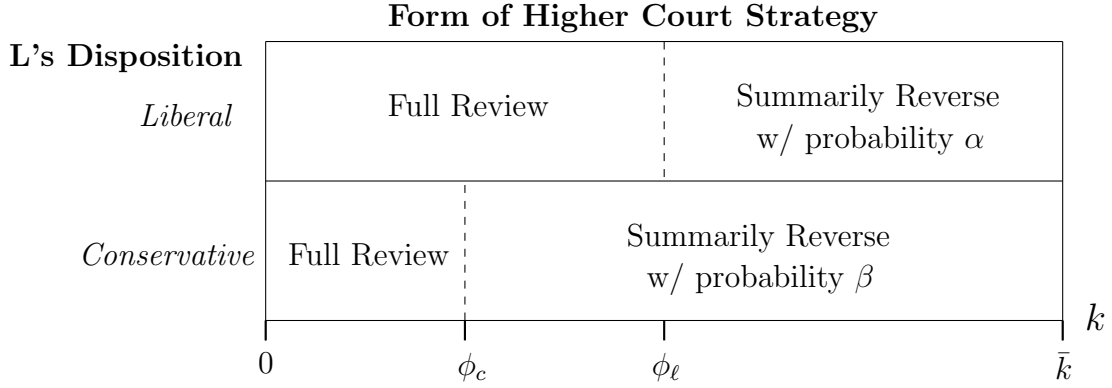
Form of Higher Court Strategy

L's Disposition		
Liberal	Full Review	Summarily Reverse w/ probability α
Conservative	Full Review	Summarily Reverse w/ probability β

$$0 \qquad \phi_c \qquad \phi_\ell \qquad \bar{k} \qquad k$$

Figure 4: Higher court's review/summary reversal decision based on the cost of review (k) and the lower court's disposition. In Lemma 1 we show that $\beta = 0$ in equilibrium.

In the Appendix we show that an equilibrium of the desired form always exists, and, in addition, must satisfy a variety of properties.

Lemma 1. *Equilibria of the form in Remark 1 always exists and satisfy these properties.*

1. *An aligned lower court always complies when the case facts are conservative ($x_A \geq H$), and a misaligned lower court sometimes fails to do so ($x_M < H$).*

2. *The higher court never summarily reverses a conservative disposition ($\beta = 0$), and does not always summarily reverse a liberal one ($\alpha < 1$).*

3. *The higher court is strictly more willing to review a liberal disposition ($\phi_\ell > \phi_c$).*

We explain below why these properties must hold; here we briefly remark on the rationales. First, equilibrium requires an aligned lower court to always comply when the case facts are conservative ($x_A \geq H$) because this is in both her "ideological" and reversal-avoiding interests. Second, equilibrium requires a misaligned lower court to sometimes fail to comply when the case facts are conservative ($x_M < H$); otherwise the higher can be certain that a liberal disposition is complaint and would neither review nor reverse it, thereby incentivizing noncompliance. Third, the higher court must be weakly more likely to summarily reverse a liberal disposition than a conservative one ($\alpha \geq \beta$) because it is more suspicious given the configuration of preferences. Finally, she cannot be *certain* to summarily reverse a liberal disposition (i.e. $\alpha < 1$) since otherwise misaligned lower court would never engage in noncompliance, which is necessary in equilibrium.[10]

The Lower Court's Incentives

To characterize equilibrium strategies we first analyze lower court incentives. When choosing a disposition, the lower court privately knows both the case facts $x \in [0, 1]$ and his own ideal cutpoint $L \in \{A, M\}$. Should he rule conservatively, his expected utility is:

$$((1 - G(\phi^c)) + \mathbf{1}_{x \leq H} \cdot G(\phi^c)) \cdot u(x, L, c) + G(\phi^c) \cdot (1 - \mathbf{1}_{x \leq H}) \cdot (u(x, L, \ell) - \epsilon_L) \quad (1)$$

where $\mathbf{1}_{x \leq H}$ is an indicator variable denoting whether the case facts x are conservative (i.e., whether the higher court would prefer the conservative disposition if she knew the case facts). In words, a conservative disposition will be upheld absent review (occurring with probability $1 - G(\phi^c)$) as well as following review (occurring with probability $G(\phi^c)$) if the case facts are conservative ($x \leq H$), and will be reversed (imposing a reversal cost of ϵ_L) if there is a review (occurring with probability $G(\phi^c)$) and the case facts are liberal ($x > H$).

---

[10]Our assumption that $\max\{M, 0\} < H - \frac{1-H}{\sqrt{1-p}}$ rules out inefficient "reversed" equilibria where both dispositions are summarily reversed because the lower court uses the "wrong" disposition to signal the right one. However, there may still exist additional equilibria where a misaligned lower court exhibits *both* noncompliance and pandering.

Should the lower court instead rule liberally, his expected utility is:

$$\left(\left(1 - G\left(\phi^\ell\right)\right) \cdot (1 - \alpha) + G\left(\phi^\ell\right) \cdot \left(1 - \mathbf{1}_{x \leq H}\right)\right) \cdot u(x, L, \ell)$$

$$+ \left(\left(1 - G\left(\phi^\ell\right)\right) \cdot \alpha + G\left(\phi^\ell\right) \cdot \mathbf{1}_{x \leq H}\right) \cdot \left(u(x, L, c) - \epsilon_L\right) \tag{2}$$

In words, the liberal disposition will stand if there is no review (occurring with probability $1 - G\left(\phi^\ell\right)$) *and* he is not summarily reversed (occurring with probability $1 - \alpha$), or if there is a full review (occurring with probability $G\left(\phi^\ell\right)$) and the case facts are liberal ($x > H$). It will be *summarily reversed* with probability $\left(1 - G\left(\phi^\ell\right)\right) \cdot \alpha$, and *reversed on the merits* after a full review (occurring with probability $G\left(\phi^\ell\right)$) if the case facts are conservative ($x \leq H$).

Taking the difference between eqns. (2) and (1) and simplifying yields:

$$\underbrace{\left(\left(1 - \frac{\phi^\ell}{\bar{k}}\right)(1 - \alpha) + \left(\frac{\phi^\ell}{\bar{k}} - \frac{\phi^c}{\bar{k}}\right) \cdot 1_{x \geq H}\right)}_{\text{increase in Pr of } lib \text{ outcome}} \cdot (x - L) - \underbrace{\left(\left(1 - \frac{\phi^\ell}{\bar{k}}\right)\alpha + \frac{\phi^\ell}{\bar{k}} - \left(\frac{\phi^\ell}{\bar{k}} + \frac{\phi^c}{\bar{k}}\right) \cdot 1_{x \geq H}\right)}_{\text{increase in Pr of reversal}} \cdot \epsilon_L$$

$$\tag{3}$$

The first term is the "ideological" benefit from choosing the liberal disposition, due to the increased probability that it stands as the final disposition. The second term is the increase in expected reversal costs from choosing the liberal disposition. Worth noting is that lower court's ability to induce the liberal outcome by ruling liberally *increases discontinuously* when the case facts become liberal ($x > H$), while her reversal risk *decreases discontinuously*. The former is because a liberal disposition will no longer be reversed upon review (a conservative one will) and the higher court more frequently reviews liberal dispositions ($\phi^\ell > \phi^c$). The latter is because a conservative disposition is never summarily reversed.

The preceding has three implications. First, a lower court best-response can be described by a type-specific *cutpoint* $x_L(\cdot)$ that depends on the higher court's strategy. Second, a misaligned lower court always engages in some noncompliance ($x_M\left(\phi^\ell; \alpha\right) < H$), since otherwise the higher court would never review nor summarily reverse the liberal disposition, eliminating his incentive to ever comply. Finally, an aligned lower court always complies

$(x_A\left(\phi^\ell,\phi^c;\alpha\right) \geq H)$ since doing so is in both her ideological and reversal-avoiding interested, but may sometimes "pander" by ruling conservatively when the case facts are liberal $((x_A\left(\phi^\ell,\phi^c;\alpha\right) > H)$. Pandering occurs when the probability $\left(1-\frac{\phi^\ell}{k}\right) \cdot \alpha$ that a "correct" liberal disposition is *summarily reversed* exceeds the probability $\frac{\phi^c}{k}$ that an "incorrect" conservative disposition is *reheard and reversed on the merits*.

Lemma 2. *A best response by the lower court is as follows.*

- *A misaligned lower court $(L = M)$ uses cutpoint*

$$x_M\left(\phi^\ell;\alpha\right) = \max\left\{M + \left(\frac{\left(1-\frac{\phi^\ell}{k}\right)\alpha + \frac{\phi^\ell}{k}}{\left(1-\frac{\phi^\ell}{k}\right)(1-\alpha)}\right)\epsilon_M, 0\right\}$$

- *An aligned lower court $(L = A = H)$ uses cutpoint*

$$x_A\left(\phi^\ell,\phi^c;\alpha\right) = \max\left\{\min\left\{H + \left(\frac{\left(1-\frac{\phi^\ell}{k}\right)\alpha - \frac{\phi^c}{k}}{\left(1-\frac{\phi^\ell}{k}\right)(1-\alpha) + \left(\frac{\phi^\ell}{k} - \frac{\phi^c}{k}\right)}\right)\epsilon_A, 1\right\}, H\right\}$$

The effect of the higher court's strategy on these cutpoints illustrates how *review* and *summary reversal* have very different effects on the lower court, as illustrated in Figure 5. *Both* tools increase compliance by a misaligned lower court. However, *only summary reversal* carries the risk of inducing pandering from an aligned lower court.

The Higher Court's Incentives

The higher court makes two decisions after observing the lower court's disposition $d \in \{\ell, c\}$—whether to conduct a full review, and *if not*, whether to summarily reverse. To characterize these decisions we work backward, analyzing first the decision over summary reversal and then the review decision. As is typical in political agency models, because the higher court cannot commit *ex-ante* to her review and reversal strategies, she does take into consideration how the lower court's expectations about her choices might affect and potentially distort his behavior. Rather, she only takes into consideration how her ex-post oversight tools can improve final judicial outcomes given her fixed (equilibrium) expectations about how much noncompliance or pandering may have already occurred.
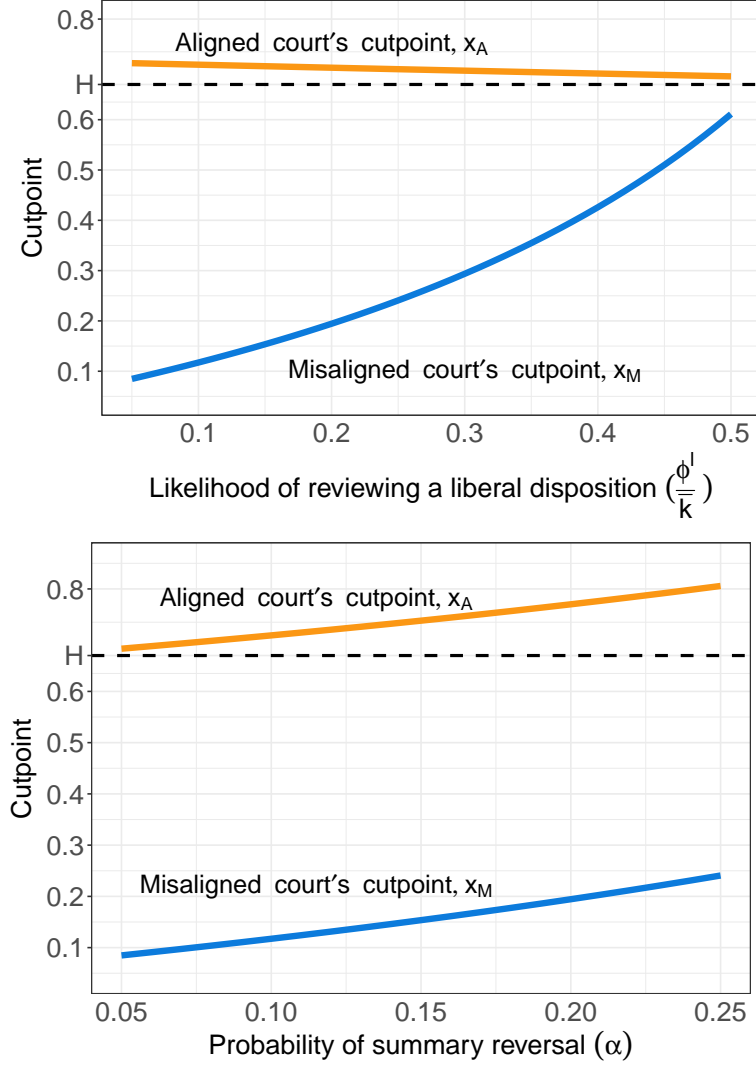
Figure 5: The top graph illustrates how best response cutpoints of an aligned and misaligned lower court change as a function of H's probability of reviewing a liberal disposition (both types comply more as the liberal disposition is more likely to be reviewed). The bottom graph illustrates how these outpoints change as a function of the summary reversal probability.

The Summary Reversal Decision

By Lemma 1, the higher court will never summarily reverse a conservative disposition in equilibrium. After a liberal disposition she updates her beliefs about *both* the case facts x and the lower court's type L. Recalling that the higher court's net benefit from the liberal

outcome is $x - H$, the expected net benefit $\Lambda_H(x_A, x_M)$ of *upholding a liberal disposition* is:

$$
\begin{aligned}
\Lambda_H(x_A, x_M) &= E\left[x - H | d = \ell\right] \\
&= \Pr\left(L = A | d = \ell\right) \cdot E\left[x - H | L = A, d = \ell\right] \\
&\quad + \Pr\left(L = M | d = \ell\right) \cdot E\left[x - H | L = M, d = \ell\right].
\end{aligned}
$$

The expression has two key ingredients. The first is the probability that the lower court is type $L \in \{A, M\}$ conditional on ruling liberally, $\Pr\left(L | d = \ell\right)$. The second is the higher court's expected net benefit from *upholding the liberal disposition* conditional on a lower court of type L having ruled liberally, $E\left[x - H | L, d = \ell\right]$. The combination of these factors determines whether summary reversal is a best response. If $\Lambda_H(x_A, x_M) < 0$, the higher court strictly prefers to summarily reverse a liberal disposition. If instead, $\Lambda_H(x_A, x_M) > 0$, summary reversal is *not* a best response for the higher court. Finally, when $\Lambda_H(x_A, x_M) = 0$ the higher court is indifferent.

In the Appendix, we show that $\Lambda_H(x_A, x_M) > (<) (=) 0$ if and only if

$$
\underbrace{p\left(x_A - H\right)^2}_{\text{pandering effect}} + \underbrace{\left(1 - p\right)\left(H - x_M\right)^2}_{\text{noncompliance effect}} < (>) (=) \left(1 - H\right)^2. \tag{4}
$$

The higher court's willingness to summarily reverse the liberal disposition is thus determined by the *sum* of the *squared amount* of anticipated noncompliance by the misaligned lower court $(H - x_M)$ and anticipated pandering by the aligned lower court $(x_A - H)$, weighted by the ex-ante probability of each type. Thus, the *more* pandering expected from the aligned lower court, the *less* non-compliance the higher court will tolerate from the misaligned lower court. This yields the following best-response characterization.

Lemma 3. *A summary reversal probability, α, is a best response if and only if $x_M < \tilde{x}_M(x_A)$ implies $\alpha = 1$ and $x_M > \tilde{x}_M(x_A)$ implies $\alpha = 0$, where*

$$
\tilde{x}_M\left(x_A\right) = H - \left(\frac{\left(1 - H\right)^2 - p\left(x_A - H\right)^2}{1 - p}\right)^{\frac{1}{2}} < H,
$$

and $\tilde{x}_M(x_A)$ is strictly increasing in x_A.

Finally, recall that in equilibrium summary reversal cannot be assured; faced with the cer-

tainty of reversal the lower court would never rule liberally, contradicting equilibrium. This generates a constraint on how much noncompliance can occur in our model as follows.

Lemma 4. *In any equilibrium, $x_M \geq \tilde{x}_M(x_A)$.*

In contrast to the standard model in which the summary reversal option is absent, in our model the misaligned court must comply at least enough to make the higher court weakly willing to uphold a liberal disposition.

The Review Decision

Of course, the higher court is not limited to summarily reversing suspicious decisions; she can also conduct a full review by paying a cost k. When doing so, she learns the true case facts, x, and is able to implement her ideal disposition by either affirming or reversing the lower court. What the higher court expects to gain from a full review depends on which disposition the lower court made.

A Conservative Disposition A conservative disposition by a *misaligned* lower court will always be compliant, as $x_M < H$ (Lemma 1); any case facts that are sufficiently conservative for him to rule conservatively will be conservative enough for the higher court as well. This property underlies the standard "Nixon goes to China" finding in the judicial auditing literature that the higher court will never review a "counter-bias" decision by the lower court (Cameron, Segal and Songer 2000).

This Nixon goes to China result, however, breaks down in our model when an aligned lower court panders ($x_A > H$). For case facts in $[H, x_A)$, the lower court will rule conservatively—a decision consistent with neither the higher court's preferences nor his own. Pandering thus generates an incentive for the higher court to sometimes review a conservative disposition as well; the utility from such a review is equal to

$$\phi^c(x_A, x_M) = \Pr\left(x \geq H | d = c\right) \cdot E\left[x - H | x \geq H, d = c\right] = \frac{p\left(x_A - H\right)^2}{2\left(x_A p + x_M\left(1 - p\right)\right)}$$

In words, this is the probability that the case facts are actually liberal conditional on a conservative disposition, times the expected net benefit from reversing a conservative ruling

under these circumstances. Best response behavior by the higher court requires that she use a review cutpoint $\phi^c = \phi^c(x_A, x_M)$ upon observing a conservative disposition.

A Liberal Disposition   A liberal ruling by an *aligned* lower court will always be compliant, as $x_A \geq H$ (Lemma 1). The benefit from reviewing a liberal disposition thus derives from the possibility that the lower court is misaligned ($L = M$) and that their decision is non-complaint ($x \in (x_M, H]$); it is therefore equal to

$$\phi^\ell(x_A, x_M) = \Pr\left(x \leq H | d = \ell\right) \cdot E\left[H - x | x \leq H, d = \ell\right] \quad = \frac{(1-p)(H - x_M)^2}{2\left(p(1 - x_A) + (1-p)(1 - x_M)\right)}$$

This is the probability that the case facts are actually conservative conditional on a liberal disposition, times the expected net benefit from reversing a liberal ruling under these circumstances. Best response behavior by the higher court again requires that she use review cutpoint $\phi^\ell = \phi^\ell(x_A, x_M)$ upon observing a liberal disposition.

Results

We now proceed to the full equilibrium characterization and main results.

Equilibrium without summary reversal

We begin by characterizing necessary and sufficient conditions for an equilibrium in which summary reversal is *not employed* ($\alpha^* = 0$). First observe that $x_A^* = x_A\left(\phi^\ell, \phi^c; 0\right) = H$; i.e., absent the threat of summary reversal an aligned lower court never panders. If an aligned court never panders, then the higher court will never review a conservative disposition in equilibrium ($\phi^{c*} = \phi^c\left(H, x_M^*\right) = 0$). Her review threshold for the liberal disposition will be determined by the cutpoint $x_M^* < H$ of a misaligned lower court, such that

$$\phi^{\ell*} = \phi^\ell(H, x_M^*) = \frac{(1-p)(H - x_M^*)^2}{2\left(p(1 - H) + (1-p)(1 - x_M^*)\right)}.$$

$\phi^{\ell*}$ is strictly decreasing in x_M^*, with $\phi^\ell(H, H) = 0$.

Now recall from by Lemma 4 that equilibrium further requires that $x_M^* \geq \tilde{x}_M(H) = H - \left(\frac{1-H}{\sqrt{1-p}}\right)$ — that is, a misaligned court lower must comply sufficiently to avoid triggering certain summary reversal of a liberal disposition. This maximum amount of noncompliance

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then determines the maximum possible review threshold for the liberal disposition, which is $\phi^\ell(H, \tilde{x}_M(H)) = \frac{1-H}{2(1+\sqrt{1-p})}$. Finally, if a misaligned lower court would comply sufficiently to avoid summary reversal at this maximum review threshold, then an equilibrium without summary reversal both exists and is unique; otherwise, it does not. The complete equilibrium characterization is as follows.

Proposition 1. *An equilibrium without summary reversal ($\alpha^* = 0$) exists i.f.f. a misaligned lower court M is more conservative than a threshold $\bar{M} = \tilde{x}_M(H) - \left(\frac{\phi^\ell(H, \tilde{x}_M(H))}{\bar{k} - \phi^\ell(H, \tilde{x}_M(H))} \right) \cdot \epsilon_M$*

$$= \left(H - \frac{1-H}{\sqrt{1-p}} \right) - \left(\frac{1-H}{\bar{k} \cdot 2(1+\sqrt{1-p}) - (1-H)} \right) \cdot \epsilon_M$$

Whenever such an equilibrium exists it is the unique one without summary reversal, and satisfies $x_M^* \in (M, H)$ where $x_M^* = M + \left(\frac{\phi^\ell(H, x_M^*)}{\bar{k} - \phi^\ell(H, x_M^*)} \right) \cdot \epsilon_M$

Intuitively, existence of an equilibrium without summary reversals depends on whether the ideal cutpoint M of a misaligned lower court is *sufficiently conservative*; this determines how effective full review is at constraining his noncompliance. Notably, whenever an equilibrium without summary reversal exists, it corresponds to the unique equilibrium of the two-player model analyzed in Beim, Hirsch and Kastellec (2014) without the summary reversal option.[11]

Quite naturally, the required threshold of conservatism $\bar{M}$ increases (i.e., it becomes more difficult to sustain an equilibrium without summary reversal) as H becomes more conservative. It also increases as a misaligned lower court's reversal cost ϵ_M decreases (because full review becomes less effective at constraining his noncompliance), and as $\bar{k}$ increases (since full review becomes more expensive in expectation and is therefore employed less). Finally, it is *independent of* the reversal cost ϵ_A of an aligned lower court, since it is the *incentives of a misaligned lower court* that determine whether such an equilibrium exists.

Equilibrium with summary reversal

We now turn to equilibria with summary reversal ($\alpha^* > 0$), beginning with a key result.

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[11]This does not preclude existence of additional equilibria in which summary reversal is employed, a point we later return to.

Lemma 5. *In any equilibrium with summary reversal ($\alpha^* > 0$), the lower court panders with strictly positive probability.*

The intuition is as follows. If the higher court anticipated no pandering, then she would *never* review a conservative disposition ($\phi^c = \phi^c (H, x_M^*) = 0$). But if the higher court *also* sometimes summarily reverses liberal dispositions ($\alpha^* > 0$) then an aligned lower court will have a strict incentive to pander ($x_A \left(\phi^\ell, 0; \alpha \right) > H$), a contradiction.

Summary reversal and pandering are thus inextricably linked in our model; one cannot occur without the other. In a standard judicial auditing model without the summary reversal option, the lower court will *only* be reversed if the higher court learns that his decision was noncompliant via a full review; lower courts therefore never face a risk from taking actions *in line* with the higher court's known preferences. Summary reversal introduces the risk that the lower court will be reversed even when he is complying due to the *appearance* that he is not. When the expected sanctions from being summarily reversed outweigh the expected gains from ruling correctly, an aligned lower court will be incentivized to pander.

The construction of equilibria with summary reversal is somewhat more intricate than those without. First, summary reversal cannot be assured ($0 < \alpha^* < 1$); consequently, in any equilibrium with summary reversal the higher court must be *indifferent* between summarily reversing and upholding a liberal disposition. This constraint pins down all possible pairs of noncompliance and pandering ($x_M^* = \tilde{x}_M \left(x_A^* \right); x_A^*$) with $x_A^* \in (H, 1]$ that are consistent with a summary reversal equilibrium. Finally, both must be optimal for the misaligned and aligned-type lower court, respectively. These constraints yield equilibrium as follows.

Proposition 2. *An equilibrium with summary reversal and pandering ($\alpha^* > 0, x_A^* > H$) always exists when an equilibrium without summary reversal does not, and may also exist when an equilibrium without summary reversal does. Necessary and sufficient conditions for such equilibria are that $\phi^{\ell *} = \phi^\ell \left(x_A^*, x_M^* \right)$, $\phi^{c*} = \phi^c \left(x_A^*, x_M^* \right)$, $x_M^* = \tilde{x}_M \left(x_A^* \right)$,*

$$x_A^* = \min \left\{ H + \left(\frac{\left(1 - \frac{\phi^{\ell *}}{k} \right) \alpha^* - \frac{\phi^{c*}}{k}}{\left(1 - \frac{\phi^{\ell *}}{k} \right) (1 - \alpha^*) + \left(\frac{\phi^{\ell *}}{k} - \frac{\phi^{c*}}{k} \right)} \right) \epsilon_A, 1 \right\}, \quad and$$

$$x_M^* = M + \left(\frac{\left(1 - \frac{\phi^{\ell*}}{k}\right) \alpha^* + \frac{\phi^{\ell*}}{k}}{\left(1 - \frac{\phi^{\ell*}}{k}\right)(1 - \alpha^*)} \right) \epsilon_M$$

Equilibria with summary reversal always exist when equilibria without summary reversal do not (i.e. $M < \bar{M}(\cdot)$; see Proposition 1). However, equilibria with and without summary reversal may coexist. Additionally, there may be multiple summary reversal equilibria exhibiting different degrees of pandering.

The reason for this multiplicity is that judicial pandering is potentially *self-reinforcing*. Specifically, more pandering by an aligned lower court triggers more review of conservative dispositions, which disincentives pandering. However, more pandering *also* makes the higher court more willing to summarily reverse a liberal disposition; to avoid guaranteed summary reversal a misaligned lower court must therefore comply *more*. But this extra compliance can only be incentivized with more summary reversal, which in turn incentivizes yet more pandering. This potential multiplicity is illustrated in an example in Figure 6, which plots the *set* of pandering levels consistent with equilibrium as a function of the *potential disagreement* $(H - M)$ between the higher court and the lower court. For low and high levels of disagreement there is a single pandering equilibrium. For intermediate levels there are three distinct pandering equilibria, including one in which an aligned lower court *always* panders.

Comparative Statics on Pandering

The potential multiplicity of pandering equilibria requires a selection criteria to perform comparative statics; to "stack the deck" against pandering we henceforth select the equilibrium with the lowest level of pandering in the case of multiplicity. Figure 7 recreates Figure 6 and identifies our equilibrium selection with a red dashed line.

Proposition 3. *Equilibrium pandering x_A^*:*

- ***increases*** *when full review becomes costlier in expectation (higher $\bar{k}$)*

- ***decreases*** *when a misaligned lower court becomes more conservative (higher M) or*
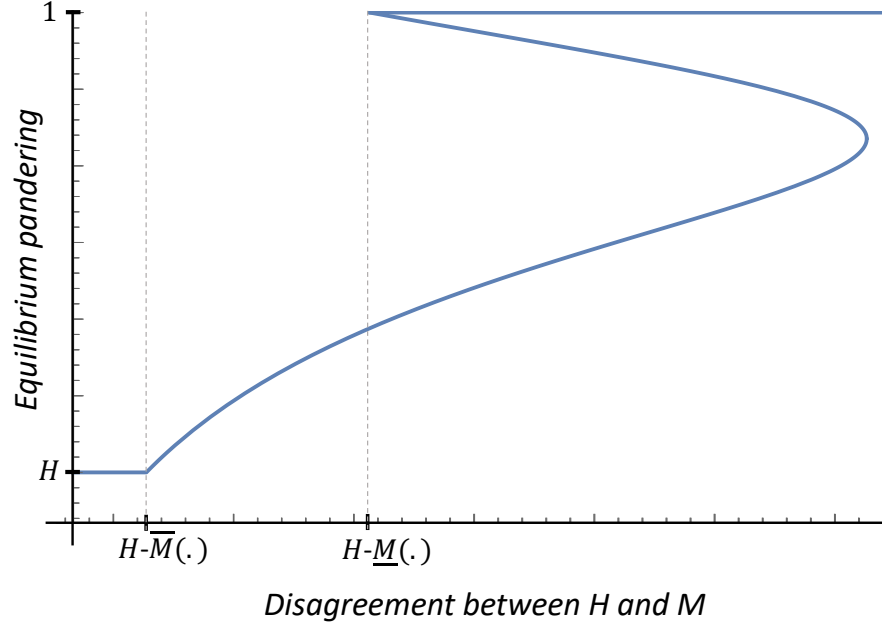
Figure 6: Equilibrium Pandering Cutpoints as a Function of M. The line plots levels of pandering consistent with equilibrium; over an intermediate region three distinct equilibria exist. The figure depicts the (non-singleton) equilibrium correspondence for an example in which $H = \frac{2}{3}$, $p = \frac{3}{4}$, $\bar{k} = \frac{1}{5}$, and $\epsilon_A = \epsilon_M = 1$. At these parameters $p < \tilde{p}$, implying that an equilibrium without summary reversal and pandering exists if and only if $\bar{M}(\cdot) \leq M$.
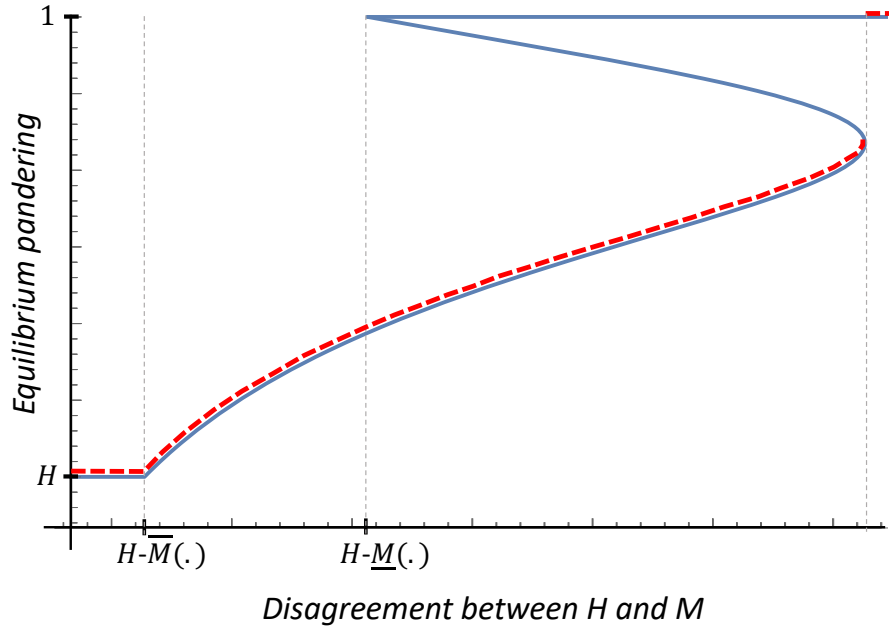
Figure 7: Selected Equilibrium Pandering Cutpoints as a Function of M. We assume $H = \frac{2}{3}, p = \frac{3}{4}, \bar{k} = \frac{1}{5}$, and $\epsilon_A = \epsilon_M = 1$. The red (dashed) line indicates our equilibrium selection.
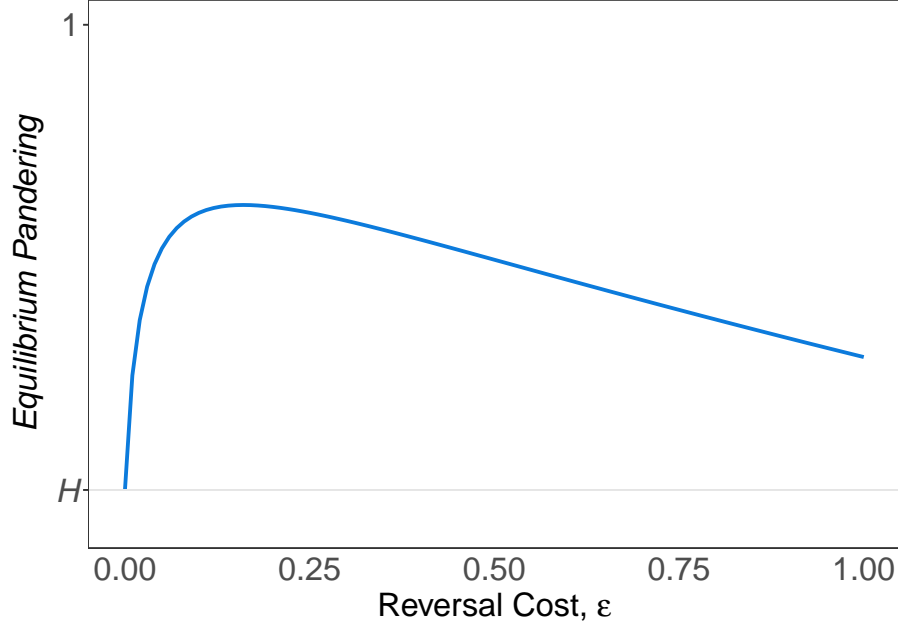
Figure 8: Selected equilibrium pandering cutpoint as a function of $\epsilon = \epsilon_A = \epsilon_M$. We assume $H = \frac{2}{3}, p = \frac{1}{2}, \bar{k} = 1,$ and $\epsilon \in [0,1]$.

experiences higher reversal costs ϵ_M

- ***increasing*** *when an aligned lower court experiences higher reversal costs ϵ_A*

We begin with the effect of higher expected review costs (i.e., higher $\bar{k}$). As the expected cost of full review increases the higher court becomes less likely to use it, and must therefore rely on summary reversal more to ensure adequate compliance. As summary reversal becomes more likely, an aligned lower court will in turn pander more to avoid it. Next, when a misaligned lower court either becomes more conservative (higher M) or fears reversal more (higher ϵ_M), he becomes less willing to engage in noncompliance; in either case the higher court must rely on summary reversal less to ensure adequate compliance, which in turn disincentivizes pandering by an aligned lower court. Finally, as an aligned lower court fears summary reversal more (higher ϵ_A), he is clearly incentivized to pander more to avoid it.

An interesting implication of the preceding is that equilibrium pandering is affected by the reversal cost of *both* types of the lower court, but in opposite ways. Thus, changing policies or norms on the court to uniformly increase reversal costs (from ϵ_L to $\epsilon_L + \delta$ for $L \in \{A, M\}$)

can both *reduce* pandering (when the effect on the misaligned type is dominant) or *increase* it (when the effect on the aligned type is dominant). These competing effects can be seen in Figure 8, which plots equilibrium pandering as a function of a common reversal cost $\epsilon = \epsilon_M = \epsilon_A$, and shows that pandering first increases and then decreases in this cost.

Summary Reversal and Higher Court Welfare

Using summary reversal simultaneously improves compliance by a misaligned lower court, and exacerbates pandering by an aligned lower court. However, because the higher court lacks the ability to commit ex-ante to a "judicial rule" governing her review and reversal strategies, she is unable to internalize the effect of her *ex-post* oversight behavior on the lower court's *ex-ante* incentives.[12] Given this, it is natural to ask whether the higher court's access to summary reversal can actually ultimately harm her—and if so, when and why.

The higher court's expected utility in the model both with and without the summary reversal option may be calculated *as if* she will never use it (since in an equilibrium of the model with summary reversal she will strictly or weakly prefer not to). It is thus

$$
\begin{aligned}
EU^H &= \Pr(d = \ell) \cdot \left(E\left[u(x, H, \ell)\,|\,d = \ell\right] + \int_0^{\phi^\ell} \left(\phi^\ell - k\right) g(k)\, dk \right) \\
&\quad + \Pr(d = c) \cdot \left(E\left[u(x, H, c)\,|\,d = c\right] + \int_0^{\phi^c} \left(\phi^c - k\right) g(k)\, dk \right)
\end{aligned}
$$

with the appropriate equilibrium quantities substituted in. It is helpful to decompose this expression into components deriving from *the quality of the lower court's decisions*, and components deriving from the *benefits of employing full review*. Algebraic manipulation (see Appendix) yields that EU^H is proportional to:

$$
\begin{aligned}
\tilde{EU}^H &= (1 - H)^2 - \left(p(x_A - H)^2 + (1 - p)(H - x_M)^2\right) \\
&\quad + H^2 - \left(p(x_A - H)^2 + (1 - p)(H - x_M)^2\right) \\
&\quad + \frac{2}{k} \left(\Pr(d = \ell) \cdot \left(\phi^\ell\right)^2 + \Pr(d = c) \cdot \left(\phi^c\right)^2 \right)
\end{aligned}
\tag{5}
$$

The first line is the expected benefit of upholding a liberal disposition, and is equal to

---

[12]This resembles electoral accountability models where pandering occurs because the representative voter's interim-optimal reelection rule distort's the incumbent's ex-ante incentives.

$2 \Pr(d = \ell) \, \Lambda_H(x_A^S, x_M^S)$. The second line is the expected benefit of upholding a conservative disposition. The final line is the expected benefit from using full review. To compare equilibrium utility between the two models we henceforth index quantities as follows: let N denote quantities from the unique equilibrium of the model without the summary reversal option, and let S denote quantities from the lowest pandering equilibrium of the main model.

Clearly, a *necessary* condition for utility to differ between the two models is that summary reversal is actually *used* in the model where it is an option; recall that this is the case if and only if $x_M \left(\phi^\ell(H, \tilde{x}_M(H)); 0 \right) < \tilde{x}_M(H)$ (i.e., a misaligned lower court's best response to the maximum frequency of review elicits summary reversal). It is then straightforward to show that $x_M^N < \tilde{x}_M(H)$ (i.e., the higher court would actually *want* to employ summary reversal in the equilibrium of the model where it can't), implying that

$$2 \Pr_N (d = \ell) \cdot \Lambda_H(H, x_M^N) = (1 - H)^2 - \left(p \left(x_A^N - H \right)^2 + (1 - p) \left(H - x_M^N \right)^2 \right)$$
$$= (1 - H)^2 - (1 - p) \left(H - x_M^N \right)^2 < 0.$$

In contrast, when summary reversal is used in equilibrium, the higher court must be *indifferent* over doing so, implying that $x_M^S = \tilde{x}_M \left(x_A^S \right)$ so that

$$2 \Pr_S (d = \ell) \cdot \Lambda_H(x_A^S, x_M^S) = (1 - H)^2 - \left(p \left(x_A^S - H \right)^2 + (1 - p) \left(H - x_M^S \right)^2 \right) = 0.$$

Comparing the preceding expressions yields our first key insight; that the higher court's access to summary reversal *always* results in better lower court decisionmaking *on average*, because the pandering of an aligned lower court is perfectly counterbalanced by the increased compliance of a misaligned lower court. Any potential harms from summary reversal must therefore derive *not* from worse lower court decisionmaking, but rather from the effect of pandering on the value of full review. This insight yields the following straightforward result.

Proposition 4. *Holding the other model primitives fixed, the higher court is strictly better off with the summary reversal option if full review is sufficiently costly ($\bar{k}$ sufficiently high).*

If full review is sufficiently costly, any potential welfare effects of summary reversal will be dominated by the favorable effect on the expected accuracy of lower-court decisionmaking.

Having established a simple sufficient condition for when access to summary reversal is unambiguously beneficial, we next state a simple sufficient condition for it to be harmful.

Proposition 5. *The higher court is strictly worse off with the summary reversal option when* **both** *the higher court is not too conservative (low H) and a misaligned lower court is sufficiently liberal (low M).*

The first condition—that the higher court is not too conservative—bounds the harm that the higher court may suffer from worse lower court decisionmaking absent summary reversal. The second—that a misaligned lower court is sufficiently liberal—ensures that the higher court will use summary reversal "too much" when it is available relative to its limited benefit. Figure 9 compares higher court equilibrium utility in the model with and without access to summary reversal, in an example where H is not too conservative and M is quite liberal.[13] When expected review costs are sufficiently low the higher court is strictly worse off with access to summary reversal, whereas when they are sufficiently high $(k \to \infty)$ she becomes strictly better off. Under these conditions, full review becomes relatively ineffective at both improving lower court compliance and at error correction; the benefits therefore outweigh the costs of degrading the value of full review.

Discussion and Conclusion

Unlike most superiors in hierarchical organizations, the Supreme Court has very few formal tools with which to compel compliance by lower courts. Given this reality, most existing theories of the judicial hierarchy have focused on the lower courts' fear of reversal, combined with strategic auditing, as the main avenue by which the Supreme Court can instill compliance among their agents in the federal judiciary. To be sure, our theory is an extension of, and not a full departure from, formal theories in this tradition. Our contribution, however, lies in modeling the multiple modes of review that the Supreme Court has in choosing to

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[13]The parameter values used for lower court cutpoints correspond to a partial pandering equilibrium satisfying our selection criterion.
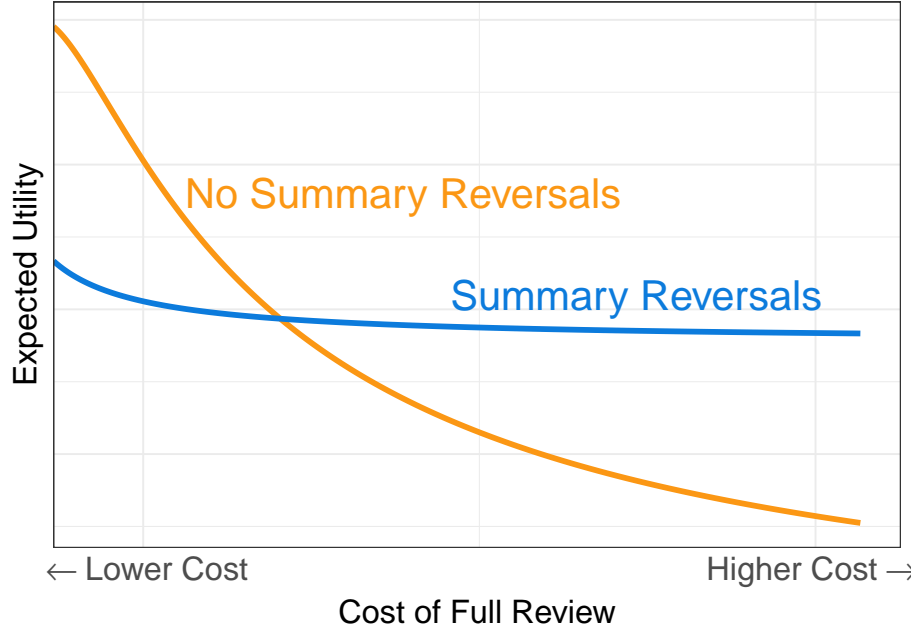
Figure 9: Higher Court Expected Utility as a Function of $\bar{k}$, with and without access to summary reversal. We assume $H = \frac{2}{3}, p = \frac{3}{4}, M = 0,$ and $\epsilon_A = \epsilon_M = 1$.

oversee lower court—in particular, the availability of summary reversal—and how the choice of these modes may create some unforeseen incentives for lower court judges.

Our specific insights are twofold. First, summary reversal can increase compliance by an ideologically misaligned lower court, on top of what is gained from the threat of granting cert and conducting "full" review. Second, summary reversal can induce pandering by an ideologically aligned lower court. This occurs because the higher court is uncertain of the lower's court exact preferences, and so in some instances may summarily reverse the lower court's decision even though the two actually share the same dispositional preference given the case facts. Accordingly, to head off this possibility, in a subset of cases an aligned lower court will choose a disposition that neither it nor the higher court prefers.

This pandering effect has important implications for understanding higher court-lower court interactions. A robust finding in the judicial auditing literature is the "Nixon Goes to China" effect first detailed in Cameron, Segal and Songer (2000)—that the Supreme Court should never review a "counter-bias" lower court decision because she can infer that it is

definitely compliant. In the presence of both summary reversals and uncertainty about the lower court's bias, however, the Nixon Goes to China effect breaks down—the higher court may no longer be sure that counter-bias decisions demonstrate compliance rather than pandering, despite being certain that the lower court is *at least as liberal* as she is.

A secondary consequence of the potential for pandering is that the availability of summary reversal can actually *hurt* the higher court, even though it provides a "cheaper" way to reverse potentially non-compliant decisions. Importantly, pandering does not *directly* harm the higher court via worse lower court decisionmaking, as any pandering by an aligned lower court is balanced out by increased compliance by a misaligned lower court. Instead, it *indirectly* harms the higher court by decreasing the value of full review. As full review becomes a costlier and less valuable tool, access to summary reversal always benefits the higher court. However, when the cost of a full review is relatively low, the higher court is sometimes better off without access to summary reversal.

Turning from the abstraction of the model to the realities of the current-day politics of the U.S. Supreme Court, our model provides micro-foundations for much of the prevailing wisdom of the costs and benefits of the Court's exercise of summary reversals. On the benefits side, the Court's problem when it comes to case selection can be seen as one of management: every year it is asked to review thousands of cases, but has the capacity (or, more accurately, the will) to give full review to fewer than 70 of them each term. At the same time, given preference heterogeneity in the lower courts, a significant amount of those decisions may indeed be non-compliant, thereby increasing the attractiveness of summary reversal. As Hemmer (2012, 213) argues summary disposition "allows the Court ... to dispose of more cases with less effort, to correct egregious legal errors when they arise, and to preserve the Court's limited resources for cases that present novel legal problems."

On the costs side, many legal scholars have criticized the Supreme Court's use of summary reversal on the grounds that it leads to sub-optimal decision making. One line of criticism focuses on the Supreme Court's legitimacy; Baude (2015, 4-5), for example, argues that

"non-merits orders do not always live up to the high standards of procedural regularity set by its merits." A second line of criticism focuses on the effects of summary reversal on the development of law. Decisions made using the shadow docket often lack any explanation of the Court's rationale. As some justices now consider these decisions binding precedent, lower courts are tasked with applying the will of the Supreme Court without a full explanation of what the Court wants. Chen (2019, 703-4), for example, argues that when the court engages in summary reversals, it "does so without the benefit of the full adversarial process," as "[c]ertiorari petitions and opposition briefs are supposed to be about whether a case warrants discretionary review and not primarily about the case's merits." Likewise, dissenting in a 2025 shadow docket decision regarding the Trump administration's termination of federal education grants, Justice Kagan wrote, "The risk of error increases when this Court decides cases–as here–with barebones briefing, no argument, and scarce time for reflection."[14]

Indeed, in line with Kagan's criticism, our explanation of the costs of summary reversal is grounded not just in its effect on other actors (as with concerns about legitimacy and lower court implementation) but also on the decision making of the Court itself. While our model abstracts away from the adversarial process as such, it does illustrate how the Supreme Court will sometimes reach the "wrong" result—from its perspective—because it does not fully learn the case facts when engaging in summary reversal. At the same time, our theory points to a more subtle way in which the presence of summary reversals distorts the incentives of lower court judges. Because lower court judges can never be sure if a given case is one in which the Supreme Court might exercise summary review, they have to weigh that possibility when they make their decision. As we document above in discussing the existence of pandering, the possibility of summary reversal can lead lower court judges to sometimes rule against both their preferred disposition as well as that of the Supreme Court. While, of course, we cannot say whether these costs outweigh the benefits of summary review, our model points to a heretofore unintended mechanism that further adds to the costs ledger.

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[14]Department of Education v. California et al. `https://www.supremecourt.gov/opinions/24pdf/24a910_f2bh.pdf`.

Looking forward, much works remains to understand the Court's use of the shadow docket more broadly, and of summary reversals in particular. Empirically, most work on the shadow docket has focused on one particular type of decision (e.g. summary reversals, stays, injunctions) during the Roberts Court. While this is understandable, it would be worthwhile to take a more longitudinal approach and examine how the quantity and quality of summary reversals has varied over time as the Court has gained more control of its docket.

From a theoretical perspective, there are several opportunities for further research. First, in our model the higher court effectively "overuses" summary reversal relative to what would be optimal if she took the cost of pandering into consideration, because she lacks the ability to commit *ex-ante* to an ex-post oversight strategy. It would be interesting to examine how a higher court with such an ability would craft a reversal strategy that optimally balances the benefit of summarily reversing suspicious lower court decisions against the costs of pandering. Further, while higher courts likely lack this ability to fully commit to their future behavior, they certainly appear to try in a limited way by making verbal commitments to certain norms or judicial doctrines, or both. For example, prior Supreme Courts have attempted to obey a norm of "taking at least six votes to agree to such a summary disposition," and to reserve such dispositions "for cases in which the lower court clearly and egregiously erred" (Vladeck 2023, 87). It would be interesting to consider an extension of our model in which the higher court has such tools of limited rather than full commitment through which they can take into account the cost of pandering—perhaps to reverse with respect to a differentthreshold that differs from their underlying ideology, or to limit the frequency of summary reversal. Similarly, it would be interesting to examine a setting of repeated interactions between the higher and lower courts, in which such partial commitments could arise endogenously and be sustained by lower court "punishments" should they be violated.

Second, as discussed earlier, one criticism of summary reversals is that they adversely affect the development of the law. Decisions made using the shadow docket often lack explanation of the Court's rationale—as some justices now consider these decisions binding

precedent, lower courts are then tasked with applying the will of the Supreme Court without a full explanation of what it wants (Vladeck 2023). While such considerations are outside of the scope of our model, it would be interesting to examine the adverse effects of incomplete summary reversal "decisions" on lower courts' subsequent attempts to faithfully and accurately implement the will of the Supreme Court.

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Supporting Information for

Reviewing Fast or Slow: A Theory of Summary Reversal in the Judicial Hierarchy

Contents

A   Preliminary Analysis

We begin with preliminary analysis to support Lemma 1; this requires generalizing the analysis to not presume that the lower court always employs a cutpoint strategy, or that the conservative disposition is never summarily reversed. Recall from the main text that we maintain the following assumptions on the primitive parameters throughout our analysis.

Assumption A.1. *We assume that $H > \frac{1}{2}$ (the conservative disposition strictly optimal for the higher court ex ante) and $\max\{M, 0\} < H - \frac{1-H}{\sqrt{1-p}}$ (the higher court would always summarily reverse the liberal disposition if it believed the lower court to be ruling sincerely).*

A.1   The Higher Court's Calculus

The higher court seeks to induce the liberal disposition as the final outcome when the case facts are above her ideal cutpoint ($x \geq H$) and the conservative disposition as the final outcome otherwise ($x < H$), but can only base her review and summary reversal decisions on the observed lower court disposition $d \in \{\ell, c\}$ (if she reviews, she will learn the true value of x and issue whichever final ruling leads to the optimal disposition as the outcome, regardless of whether that involves upholding or reversing the lower court disposition.)[1] Denote the CDF describing the politician's interim beliefs about the case facts given an observed disposition d as $F^d(x)$, and the conditional expectation of the case facts as $E^d[x]$.

We first characterize the conditional probability $\alpha^d \in [0, 1]$ that the higher court (costlessly) summarily reverses a disposition of d should she decline to conduct a full rehearing of the case in a best response. Recall that the higher court's net benefit $u(x, H, \ell) - u(x, H, c)$ for the liberal disposition is simply $x - H$. Next, let Λ_H^d denote the expected net benefit of taking the action that results in the liberal disposition becoming the final outcome given disposition d (i.e., upholding if $d = \ell$ and reversing if $d = c$), so that

$$\Lambda_H^d = E^d[x] - H$$

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[1]We also assume for notational simplicity that whenever the higher court is indifferent after review—i.e., $x = H$ (which is a measure 0 event)—she will take whichever action ensures the liberal disposition.

If the lower court disposition is liberal ($d = \ell$) then in a best response the higher court must always summarily uphold when $\Lambda_H^d > 0$ ($\alpha^\ell = 0$) and summarily reverse when $\Lambda_H^d < 0$ ($\alpha^d = 1$). Conversely, if the lower court disposition is conservative ($d = c$) then in a best response the higher court must always summarily uphold ($\alpha^d = 0$) when $\Lambda_H^d < 0$ and summarily reverse ($\alpha^d = 1$) when $\Lambda_H^d > 0$.

We next characterize the higher court's disposition-dependent review cutpoint ϕ^d.

First, when $\Lambda_H^d \geq 0$ (so that in a best response she would take whichever summary action results in the liberal disposition as the outcome absent review) a review is only *pivotal* for changing her decision when it reveals that the case facts are actually conservative, which she believes will occur with probability $F^c(H)$. In this event, the expected net benefit of changing her decision from one that ensures the liberal disposition to one that ensures the conservative disposition is $H - E^d[x|x < H]$. The overall value of review ϕ^d is thus equal to

$$\phi_c^d = F^c(H) \cdot \left(H - E^d[x|x < H]\right)$$

Next, when $\Lambda_H^d \leq 0$ (so that in a best response she would take whichever summary action results in the conservative disposition as the outcome absent review) a review is only pivotal for changing her decision when it reveals that the case facts are actually liberal, which she believes will occur with probability $1 - F^c(H)$. In this event, the expected net benefit of changing her decision from one that ensures the conservative disposition to one that ensures the liberal disposition is $E^d[x|x \geq H] - H$. The overall value of review ϕ^d is thus equal to

$$\phi_\ell^d = (1 - F^c(H)) \cdot \left(E^d[x|x \geq H] - H\right)$$

Finally, observe that $\Lambda_H^d = E^d[x] - H =$

$$(1 - F^c(H)) \cdot \left(E^d[x|x \geq H] - H\right) + F^c(H) \cdot \left(E^d[x|x < H] - H\right) = \phi_\ell^d - \phi_c^d$$

Thus, when $\Lambda_H^d \geq 0$ (so that the overall value of review is $\phi^d = \phi_c^d$) we must also have $\phi_c^d \leq \phi_\ell^d$, and when $\Lambda_H^d \leq 0$ (so that the overall value of review is $\phi^d = \phi_\ell^d$) we must also have $\phi_\ell^d \leq \phi_c^d$; combining these observations yields that the overall value of review ϕ^d is $\phi^d = \min\left\{\phi_\ell^d, \phi_c^d\right\}$ ..

Collecting the above observations yields the higher court's best response behavior.

Observation A.1. *Let $F^d(x)$ denote the CDF of the higher court's posterior after disposition d and let $\Lambda_H^d = E^d[x] - H$. The higher court's strategy is a best response i.f.f. she:*

- *conducts a full review whenever $k \leq \phi^d = \min\{\phi_\ell^d, \phi_c^d\}$ where*

$$\phi_c^d = F^c(H) \cdot \left(H - E^d[x | x < H]\right) \quad and \quad \phi_\ell^d = (1 - F^c(H)) \cdot \left(E^d[x | x \geq H] - H\right)$$

- *always summarily reverses absent review ($\alpha^d = 1$) when $\left(d = \ell, \Lambda_H^d < 0\right)$ or $\left(d = c, \Lambda_H^d > 0\right)$*

- *never summarily reverses absent review ($\alpha^d = 0$) when $\left(d = c, \Lambda_H^d < 0\right)$ or $\left(d = \ell, \Lambda_H^d > 0\right)$*

A.2 The Lower Court's Calculus

The lower court seeks to maximize the probability of her preferred outcome while minimizing the likelihood of reversal. When choosing a disposition, the lower court privately knows both the case facts $x \in [0, 1]$ and his own ideal cutpoint $L \in \{A, M\}$. Let $\delta_L(x)$ denote the *probability* a lower court of type L chooses the liberal disposition given case facts x, which is the most general form of the lower court's strategy

To examine the lower court's calculus, it is helpful to first rewrite the higher court's feasible strategies $\left(\phi^d, \alpha^d\right)$ after disposition d in terms of the quantities $\left(\phi^d, \Delta^d\right)$ with $\Delta^d \in \left[0, 1 - G\left(\phi^d\right)\right]$, where $\Delta^d = \left(1 - G\left(\phi^d\right)\right) \cdot \left(1 - \alpha^d\right)$ equals the *unconditional probability that disposition d is summarily upheld*. We then have that the lower court's expected utility from choosing the conservative disposition $d = c$ is:

$$\left(\left(1 - \Delta^d\right) - \mathbf{1}_{x \leq H} \cdot G\left(\phi^c\right)\right) \cdot (x - L) - \left(\left(1 - \Delta^d\right) - \mathbf{1}_{x \leq H} \cdot G\left(\phi^c\right)\right) \cdot \epsilon_L \tag{6}$$

whereas his expected utility from choosing the liberal disposition is:

$$\left(\Delta^\ell + G\left(\phi^\ell\right) \cdot \mathbf{1}_{x \geq H}\right) \cdot (x - L) - \left(\left(1 - \Delta^\ell\right) - G\left(\phi^\ell\right) \cdot \mathbf{1}_{x \geq H}\right) \cdot \epsilon_L \tag{7}$$

We now separately analyze the *net benefit* of choosing the liberal disposition when $x < H$ (it is non-compliant) versus $x \geq H$ (it is compliant). Taking the difference between between eqns. (7) and (6) yields a *net benefit* of issuing a *noncompliant* liberal (versus compliant conservative) disposition when $x < H$ equal to:

$$\left(\left(\Delta^\ell + \Delta^c\right) - \left(1 - G\left(\phi^c\right)\right)\right) \cdot (x - L) - \left(\left(\Delta^c - \Delta^\ell\right) + G\left(\phi^c\right)\right) \cdot \epsilon_L$$

Similarly, the *net benefit* of issuing a *compliant* liberal (versus noncompliant conservative) disposition when $x \geq H$ is equal to:

$$\left(\left(\Delta^\ell + \Delta^c\right) - \left(1 - G\left(\phi^\ell\right)\right)\right) \cdot (x - L) - \left(\left(\Delta^c - \Delta^\ell\right) - G\left(\phi^\ell\right)\right) \cdot \epsilon_L$$

Collecting the above yields the lower court's best response behavior.

Observation A.2. *Let $\Delta^d = \left(1 - G\left(\phi^d\right)\right) \cdot \left(1 - \alpha^d\right)$ denote the unconditional probability that disposition $d \in \{\ell, c\}$ is summarily upheld, and let $\delta_L(x)$ denote the probability a type-L lower court chooses the liberal disposition given x. The lower court's strategy is a best response i.f.f. $\forall x < H$ we have*

$$\left(\left(\Delta^\ell + \Delta^c\right) - \left(1 - G\left(\phi^c\right)\right)\right) \cdot (x - L) > (<) \left(\left(\Delta^c - \Delta^\ell\right) + G\left(\phi^c\right)\right) \cdot \epsilon_L \rightarrow \delta_L(x) = 1 \ (0)$$

and $\forall x \geq H$ we have

$$\left(\left(\Delta^\ell + \Delta^c\right) - \left(1 - G\left(\phi^\ell\right)\right)\right) \cdot (x - L) > (<) \ \left(\left(\Delta^c - \Delta^\ell\right) - G\left(\phi^\ell\right)\right) \cdot \epsilon_L \rightarrow \delta_L(x) = 1 \ (0)$$

Note that *within* the regions where a particular final disposition is optimal for the higher court ($x < H$ or $x \geq H$) the lower court's net benefit for initially choosing the liberal disposition is *linear* in x; thus, *within* each region the behavior of each type $L \in \{M, A\}$ will be described by a cutpoint in *any* equilibrium (so that there may be four in total). However, the preceding analysis does not preclude the possibility that a given type of lower court may have two distinct cutpoints (one over $x < H$ and another $x \geq H$), nor the possibility that within a region more liberal case facts are associated with *conservative* rather than liberal dispositions (if, for example, the conservative disposition is relatively more likely to lead to the liberal outcome because it is sometimes rather than always summarily reversed). We consider these arguably pathological possibilities in the subsequent analysis.

A.3 Properties of Equilibrium

We start by proving a straightforward property of equilibria.

Lemma A.1. *If the conservative disposition is sometimes summarily reversed ($\alpha^c > 0$) then the liberal disposition is always summarily reversed ($\alpha^\ell = 1$).*

Proof: First observe that $E[x] - H < 0$ (the conservative disposition is optimal for H under the prior distribution of case facts) and

$$E[x] - H = \Pr(d = c) \cdot \Lambda_H^c + \Pr(d = \ell) \cdot \Lambda_H^\ell$$

Now if $\alpha^c > 0$ in a best response then it must be the case that $\Lambda_H^c \geq 0$ by Observation A.1; but then the preceding implies that $\Lambda_H^\ell < 0$, which implies $\alpha^\ell = 1$ by Observation A.1. QED

In words, Lemma A.1 states that, since the higher court's *expected* ideal disposition under the prior is conservative, then *if* she is sometimes summarily reversing the conservative disposition (so that the expected ideal disposition is weakly liberal after the conservative disposition), *then* the expected ideal disposition must be strictly conservative after the liberal disposition (leading to certain summary reversal). Thus, should a conservative disposition sometimes be summarily reversed, then the liberal disposition must always be summarily reversed, implying that the structure of equilibrium signals is reversed, so that the conservative disposition signals that the expected case facts are liberal and the liberal disposition signals that the expected case facts are conservative.

We next rule out the possibility that such "reversed" signalling equilibria exist under our initial assumption that $\max\{M, 0\} < H - \frac{1-H}{\sqrt{1-p}}$.

Lemma A.2. *Suppose $H > \frac{1}{2}$ and $\max\{M, 0\} < H - \frac{1-H}{\sqrt{1-p}}$; then in any equilibrium the conservative disposition is never summarily reversed ($\alpha^c = 0$), implying that $\phi^c = \phi_\ell^c$ (a full review of a conservative disposition is a search for liberal case facts).*

Proof: Suppose instead that $\alpha^c > 0$; by Lemma A.1 we have $\alpha^\ell = 1 \rightarrow \Delta^\ell = 0$. By Observation A.2 the benefit to a misaligned lower court of a *noncompliant* liberal ruling ($x < H$) is $-\alpha^d (1 - G(\phi^c)) \cdot (x - M) - (\Delta^c + G(\phi^c)) \cdot \epsilon_L$, which is strictly negative in the disagreement region $x \in [M, H]$. The reason is that when the liberal ruling is noncompliant ($x < H$), ruling liberally actually yields a *strictly lower* probability of the liberal outcome alongside greater expected reversal costs. Consequently, in a best response the misaligned lower court *never* rules liberally in this region.

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Now *given* this equilibrium constraint on the behavior of a misaligned lower court, the dispositional behavior among the *other* cases $x \in [0, M) \cup (H, 1]$ that will result in the "most liberal" expected case facts after the conservative disposition would be if *both* the aligned and misaligned lower courts rule conservatively if and only if the actual case facts are liberal ($x \in (H, 1]$). In other words, when $\alpha^c > 0$ the *highest* possible value of the *expected* case facts after a conservative ruling would be if both types rule conservatively if and only if their ideal disposition is liberal. But then the expected case facts are identical to what they would be after the liberal ruling if both types of lower court ruled sincerely; thus, given the assumption that $\max\{M, 0\} < H - \frac{1-H}{\sqrt{1-p}}$ the higher court must strictly prefer the conservative disposition after the conservative ruling, contradicting $\alpha^c > 0$. QED

Having ruled out summary reversal of conservative dispositions, we next consider exactly how the lower court will rule in cases where the optimal disposition is conservative ($x \leq H$). Observe that $\alpha^c = 0 \rightarrow \Delta^c = 1 - G(\phi^c)$; substituting into the lower court's calculus yields that the net benefit of issuing a noncompliant liberal disposition is:

$$\Delta^\ell \cdot (x - L) - \left(1 - \Delta^\ell\right) \cdot \epsilon_L \tag{8}$$

Examining this calculus yields the following additional properties of equilibrium.

Lemma A.3. *In any equilibrium $\Delta^\ell > 0$ (the unconditional probability that the liberal disposition is upheld is strictly positive), implying that $\phi^\ell = \phi^\ell_c$ (a full review of liberal a disposition is a search for conservative case facts).*

Proof: Suppose not and $\Delta^\ell = 0$; then both types of lower court will rule conservatively when $x \leq H$, implying that the liberal disposition is a perfect signal that $x > H$; but then in a higher court best response we have $\alpha^\ell = 1$ and $\phi^\ell = 0 \rightarrow \Delta^\ell = 1$, a contradiction. QED

The preceding implies that issuing a noncompliant liberal disposition ($x < H$) will always *strictly* increase both the probability of the liberal outcome (from 0 to Δ^ℓ) and of summary reversal (from 0 to $1 - \Delta^\ell$). This simple observation then yields the following natural additional properties of equilibrium.

Lemma A.4. *In any equilibrium, lower court behavior on cases $x < H$ satisfies the following:*

- *An aligned lower court ($L = A = H$) always rules conservatively.*

- *A misaligned lower court ($L = M < H$) rules according to a cutpoint*

$$\bar{x}_M \left(\Delta^\ell \right) = \max \left\{ M + \left(\frac{1 - \Delta^\ell}{\Delta^\ell} \right) \cdot \epsilon_M, 0 \right\}$$

  that always exhibits some non-compliance ($\bar{x}_M \left(\Delta^\ell \right) < H$).

Proof: It follows immediately from eqn. (8) and Lemma A.3 that (a) an aligned–type lower court $L = A = H$ will always rule conservatively when $x < H$, and (b) over the region $x < H$ a misaligned lower court $L = M$ will use a cutpoint $\bar{x}_M \left(\Delta^\ell \right) = \min \left\{ \max \left\{ M + \left(\frac{1 - \Delta^\ell}{\Delta^\ell} \right) \cdot \epsilon_L, 0 \right\}, H \right\}$. To see that a misaligned lower-court always exhibits some noncompliance ($\bar{x}_M \left(\Delta^\ell \right) < H$, implying that $\bar{x}_M \left(\Delta^\ell \right) = \max \left\{ M + \left(\frac{1 - \Delta^\ell}{\Delta^\ell} \right) \cdot \epsilon_L, 0 \right\}$), suppose not so that $\bar{x}_M \left(\Delta^\ell \right) = H$ (as of yet we place no restriction on whether an aligned or misaligned lower court ever panders, i.e., how they rule over $x \geq H$). Then issuing the liberal disposition perfectly signals compliance ($\phi_c^\ell = F^\ell (H) \cdot \left(H - E^\ell [x|x < H] \right) = 0$), so in a best-response liberal disposition is neither reversed nor reviewed so $\Delta^\ell = 1$; but then $\bar{x}_M \left(\Delta^\ell \right) = \max \{ M, 0 \} < H$, a contradiction. QED

We last examine the calculus of the lower court over issuing a compliant liberal dispositions ($x \geq H$); the net benefit of doing so is:

$$\left(\Delta^\ell + \left(G \left(\phi^\ell \right) - G \left(\phi^c \right) \right) \right) \cdot (x - L) - \left(\left(1 - \Delta^\ell \right) - \left(G \left(\phi^\ell \right) + G \left(\phi^c \right) \right) \right) \cdot \epsilon_L \qquad (9)$$

As compared to eqn. (8), it is clear that when the liberal ruling is actually compliant ($x \geq H$), ruling liberally carries a reduced risk of *triggering* a reversal that would have otherwise not occured as compared to when a liberal ruling is noncompliant ($x \geq H$). Formally, in the latter case ruling liberally rather than conservatively increases the risk of reversal by $1 - \Delta^\ell$, whereas in the former case it only does so by $\left(1 - \Delta^\ell \right) - \left(G \left(\phi^\ell \right) + G \left(\phi^c \right) \right)$; the latter quantity may even be negative if the higher court is frequently reviewing both

liberal dispositions (therefore upholding liberal compliant ones) and conservative dispositions (therefore reversing noncompliant conservative ones).

However, the effect of ruling liberally (versus conservatively) on the probability *the liberal disposition is the final outcome* when $x \geq H$ is less obvious. For example, if the higher court often reviews conservative dispositions but summarily reverses liberal ones, then $\Delta^\ell + \left(G\left(\phi^\ell\right) - G\left(\phi^c\right)\right)$ may be negative, meaning that ruling conservatively is actually more likely to lead to the liberal outcome (since the higher court will frequently review and reverse noncompliant conservative rulings and just summarily reverse liberal ones). Consequently, the lower court's best response may not be described by a single cutpoint, and/or when $x \geq H$ he may be more inclined to rule conservatively on more *liberal* case facts.

We cannot rule out these possibilities as equilibria. Instead, we justify a restriction to the simpler strategy profiles of main text Remark 1 as follows. First, in this section we provide a sufficient condition $\phi^\ell \geq \phi^c$ that rules them out and ensures the lower court's best response when $x \geq H$ is well behaved. Second, in the subsequent equilibrium characterization we show this sufficient condition holds in any equilibrium without pandering, as well as any equilibrium with pandering in which strategies are in cutpoints.

First, the condition $\phi^\ell \geq \phi^c$ yields the following additional properties.

Lemma A.5. *In an equilibrium with $\phi^\ell \geq \phi^c$, lower court behavior when $x \geq H$ is as follows:*

- *A misaligned lower court $(L = M < H)$ always rules liberally.*

- *An aligned lower court $(L = A = H)$ rules according to a cutpoint*
$$\bar{x}_A\left(\Delta^\ell, \phi^\ell, \phi^c\right) = \min\left\{H + \left(\frac{\left(1 - \Delta^\ell\right) - \left(G\left(\phi^\ell\right) + G\left(\phi^c\right)\right)}{\Delta^\ell + \left(G\left(\phi^\ell\right) - G\left(\phi^c\right)\right)}\right) \cdot \epsilon_A, 1\right\}$$

Proof: First, we have already established that in any equilibrium $\Delta^c = 1 - G\left(\phi^c\right)$ (which is equivalent to $\alpha^c = 0$) and $\Delta^\ell > 0$. Second, observe that $\phi^\ell \geq \phi^c$ implies that $\Delta^\ell + \left(G\left(\phi^\ell\right) - G\left(\phi^c\right)\right) \geq \Delta^\ell > 0$. Now, the fact that over $x \geq H$ an aligned lower court

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must rule according to the cutpoint $\bar{x}_A \left(\Delta^\ell, \phi^\ell, \phi^c \right)$ follows immediately from the calculus in eqn. (9) combined with $\Delta^\ell + \left(G \left(\phi^\ell \right) - G \left(\phi^c \right) \right) > 0$.

To show that a misaligned lower court $(L = M < H)$ always rules liberally over $x \geq H$, observe that $\bar{x}_M \left(\Delta^\ell \right) < H$ (from Lemma A.4) implies there exists a case fact $x' \in (\bar{x}_M, H)$ such that the lower court strictly prefers to issue a noncompliant liberal ruling, i.e., $\Delta^\ell \cdot (x' - M) - \left(1 - \Delta^\ell \right) \cdot \epsilon_M > 0$ from eqn. 8. It therefore follows that

$$\left(\Delta^\ell + \left(G \left(\phi^\ell \right) - G \left(\phi^c \right) \right) \right) \cdot (x' - M) - \left(\left(1 - \Delta^\ell \right) - \left(G \left(\phi^\ell \right) + G \left(\phi^c \right) \right) \right) \cdot \epsilon_M > 0$$

since $G \left(\phi^\ell \right) - G \left(\phi^c \right) \geq 0$ and $x' > M$. Finally since $\Delta^\ell + \left(G \left(\phi^\ell \right) - G \left(\phi^c \right) \right) > 0$ we have

$$\left(\Delta^\ell + \left(G \left(\phi^\ell \right) - G \left(\phi^c \right) \right) \right) \cdot (x - M) - \left(\left(1 - \Delta^\ell \right) - \left(G \left(\phi^\ell \right) + G \left(\phi^c \right) \right) \right) \cdot \epsilon_M > 0$$

for $x \geq H > x'_M$, so that that in a best response an M-type lower court rules liberally. QED

Next, the condition $\phi^\ell \geq \phi^c$ also yields the required lower bound $\tilde{x}_M \left(x_A \right)$ on the degree of non-compliance by a misaligned lower court in main text Lemmas 3-4.

Lemma A.6. *An equilibrium with $\phi^\ell \geq \phi^c$ satisfies $x_M \geq \tilde{x}_M \left(x_A \right) = H - \left(\frac{(1-H)^2 - p(x_A - H)^2}{1-p} \right)^{\frac{1}{2}}$.*

Proof: From the preceding, any equilibrium in which $\phi^\ell \geq \phi^c$ must satisfy $x_M \in (0, H)$ and $x_A \geq H$. In addition we have already established that $\Delta^\ell > 0$ requires that $\Lambda_H^\ell = E^\ell [x] - H \geq 0$. We now show that this condition is equivalent to $p \left(x_A - H \right)^2 + (1 - p) \left(H - x_M \right)^2 \leq (1 - H)^2 \iff x_M \geq \tilde{x}_M \left(x_A \right)$.

We have that $\Lambda_H^\ell = E^\ell [x] - H$

$$= \Pr \left(x \geq H | d = \ell \right) \cdot \left(E \left[x | x \geq H, d = \ell \right] - H \right) + \Pr \left(x \leq H | d = \ell \right) \cdot \left(E \left[x | x \leq H, d = \ell \right] - H \right)$$

$$= \Pr \left(x \geq H | d = \ell \right) \cdot \left(\begin{array}{l} \Pr \left(L = A | x \geq H, d = \ell \right) \cdot \left(E \left[x | L = A, x \geq H, d = \ell \right] - H \right) \\ + \Pr \left(L = M | x \geq H, d = \ell \right) \cdot \left(E \left[x | L = M, x \geq H, d = \ell \right] - H \right) \end{array} \right)$$

$$+ \Pr \left(x \leq H | d = \ell \right) \cdot \left(\begin{array}{l} \Pr \left(L = A | x \leq H, d = \ell \right) \cdot \left(E \left[x | L = A, x \leq H, d = \ell \right] - H \right) \\ + \Pr \left(L = M | x \leq H, d = \ell \right) \cdot \left(E \left[x | L = M, x \leq H, d = \ell \right] - H \right) \end{array} \right)$$

$$
\begin{aligned}
&= \frac{1}{\Pr\left(d=\ell\right)} \cdot \left(
\begin{array}{l}
\Pr\left(L=A, x \geq H, d=\ell\right) \cdot \left(E\left[x|L=A, x \geq H, d=\ell\right]-H\right) \\
+\Pr\left(L=M, x \geq H, d=\ell\right) \cdot \left(E\left[x|L=M, x \geq H, d=\ell\right]-H\right) \\
+\Pr\left(L=A, x \leq H, d=\ell\right) \cdot \left(E\left[x|L=A, x \leq H, d=\ell\right]-H\right) \\
+\Pr\left(L=M, x \leq H, d=\ell\right) \cdot \left(E\left[x|L=M, x \leq H, d=\ell\right]-H\right)
\end{array}
\right) \\
&= \frac{1}{\Pr\left(d=\ell\right)} \cdot \left(
\begin{array}{l}
p\left(\left(1-H\right)-\left(x_A-H\right)\right) \cdot \left(\frac{x_A-H}{2}+\frac{1-H}{2}\right) \\
+\left(1-p\right)\left(1-H\right)\left(\frac{H+1}{2}-H\right)+\left(1-p\right)\left(H-x_M\right)\left(\frac{x_M+H}{2}-H\right)
\end{array}
\right) \\
&= \frac{\left(1-H\right)^2-p\left(x_A-H\right)^2-\left(1-p\right)\left(H-x_M\right)^2}{2\Pr\left(d=\ell\right)}
\end{aligned}
$$

From here it is straightforward that $E^\ell\left[x\right]-H \geq 0$ reduces to the desired condition. QED

Finally, it is clear from inspection that Lemmas A.4-A.6 jointly imply that in any equilibrium where $\phi^\ell \geq \phi^c$, the lower court's behavior must be described by *cutpoint strategies* with $x_M = \bar{x}_M\left(\Delta^\ell\right) \geq \tilde{x}_M\left(x_A\right)$ and $x_A = \bar{x}_A\left(\Delta^\ell, \phi^\ell, \phi^c\right)$ over the entire case space $x \in [0,1]$ (and not just separately over the intervals $x < H$ and $x \geq H$); it therefore also implies that $\phi^\ell = \phi^\ell_c = \phi^\ell(x_A, x_M)$ and $\phi^c = \phi^c_\ell = \phi^c(x_A, x_M)$ as characterized in the main text. We summarize as follows.

Corollary A.1. *A strategy profile in which $\phi_\ell \geq \phi_c$ is an equilibrium if and only if it takes the form described in main text Remark 1 and Lemma 1, with*

- $\phi^\ell = \phi^\ell(x_A, x_M) = \frac{(1-p)(H-x_M)^2}{2\Pr(d=\ell)}$ *and* $\phi^c = \phi^c(x_A, x_M) = \frac{p(x_A-H)^2}{2\Pr(d=c)}$, *where* $\Pr\left(d=\ell\right) = 1-\Pr\left(d=c\right) = p\left(1-x_A\right)+\left(1-p\right)\left(1-x_M\right)$

- $\alpha^c = 0$ *and* $\alpha^\ell = 1-\frac{\Delta^\ell}{1-G\left(\phi^\ell\right)} \in [0,1)$

- $x_M = \bar{x}_M\left(\Delta^\ell\right)$, $x_A = \bar{x}_A\left(\Delta^\ell, \phi^\ell, \phi^c\right)$, *and* $x_M \geq \tilde{x}_M\left(x_A\right)$.

B   Equilibrium Analysis

In this section we derive conditions for cutpoint equilibria without and with summary reversal. It is helpful to first provide a generalized version of our result in main text Lemma 5 that pandering (i.e., ruling conservatively when the case facts are liberal) and summary reversal are inextricably linked (that is, one cannot occur without the other) which does not rely on the addition strategy profile restrictions in main text Remark 1.

Proposition B.1. *The lower court sometimes panders (*$\Pr(d = c | x \geq H) > 0$*) i.f.f. the higher court sometimes summarily reverses the liberal disposition (*$\alpha^\ell > 0$*).*

Proof: We first show that the presence of pandering implies the presence of summary reversal (by contrapositive). Suppose not and there is no summary reversal ($\alpha^\ell = 0 \iff \Delta^\ell = 1 - G(\phi^\ell)$); then the net benefit of issuing a compliant liberal disposition reduces to $(1 - G(\phi^c)) \cdot (x - L) + G(\phi^c) \cdot \epsilon_L > 0$ for all $x > H \geq L$; thus in a best response there is 0-probability of pandering by either type.

We next show that the presence of summary reversal ($\alpha^\ell > 0 \iff \Delta^\ell < 1 - G(\phi^\ell)$) implies pandering (by contradiction). Suppose not so $\alpha^\ell > 0$ but there is no pandering ($\Pr(d = c | x \geq H) = 0$); the benefit of a compliant liberal disposition ($x \geq H$) reduces to

$$\left(\Delta^\ell + G(\phi^\ell)\right) \cdot (x - L) - \left(\left(1 - G(\phi^\ell)\right) - \Delta^\ell\right) \cdot \epsilon_L$$

But since $\Delta^\ell + G(\phi^\ell) > 0$ and $\Delta^\ell < 1 - G(\phi^\ell)$, for an aligned lower court ($L = H$) this expression is strictly negative for values of $x \geq H$ sufficiently close to H, implying an aligned lower court's best response involves some pandering, a contradiction. QED

B.1   Equilibrium without summary reversal

We next prove Proposition 1, which establishes necessary and sufficient conditions for an equilibrium without summary reversal.

Proof of Proposition 1

Suppose $\alpha^\ell = 0$ (there is no summary reversal) so that $\Delta_\ell = 1 - G(\phi^\ell)$; then by

Proposition B.1 there is no pandering $(\Pr(d = c|x \geq H) = 0)$ and $\phi^c = \phi_\ell^c = 0$, implying that $\phi^\ell = \phi^\ell(H, x_M) \geq \phi^c = 0$ and $x_A = \bar{x}_A(1 - G(\phi^\ell), \phi^\ell, 0) = H$. Thus, any equilibrium without summary reversal must take the form in main text Remark 1 and Lemma 1. Such a strategy profile will be an equilibrium i.f.f. $x_M = \bar{x}_M(\Delta^\ell)$ and $x_M \geq \tilde{x}_M(\Delta^\ell)$. Substituting in, such a profile with a level of noncompliance $x_M^* < H$ will be an equilibrium i.f.f.

$$x_M^* = \bar{x}_M\left(1 - G\left(\phi^\ell(H, x_M^*)\right)\right) \text{ and } x_M^* \geq \tilde{x}_M(H)$$

(noting that $\tilde{x}_M(H) \geq 0$ by Assumption A.1 so that $\bar{x}_M(\Delta^\ell) = M + \left(\frac{1-\Delta^\ell}{\Delta^\ell}\right) \cdot \epsilon_L$).

Now it is easily verified that $G(\phi^\ell(H, x_M))$ is strictly decreasing in x_M and $\bar{x}_M(\Delta^\ell)$ is strictly decreasing in Δ^ℓ; thus $\bar{x}_M(1 - G(\phi^\ell(H, x_M)))$ is strictly decreasing in x_M with $\bar{x}_M(1 - G(\phi^\ell(H, H))) = \bar{x}_M(0) = M < H$. Thus, either $\bar{x}_M(1 - G(\phi^\ell(H, \tilde{x}_M(H)))) < \tilde{x}_M(H)$ and no solution to the equilibrium condition exists, or

$$\bar{x}_M\left(1 - G\left(\phi^\ell(H, \tilde{x}_M(H))\right)\right) \geq \tilde{x}_M(H)$$

and there is a unique solution $x_M^* \in [\tilde{x}_M(H), H)$. Finally, straightforward algebra shows that the preceding is equivalent to the condition $\bar{M}(\cdot) \leq M$ provided in the main text. QED

B.2 Equilibrium with summary reversal

A generalized version of main text Lemma 5 that does not restrict attention to strategy profiles of the form in Remark 1 has already been shown in Proposition B.1. Next, to characterize summary reversal equilibria of the desired form we show that any such equilibria must satisfy the key condition that $\phi^\ell \geq \phi^c$.

Lemma B.1. *Any summary reversal equilibrium of the form in Remark 1 satisfies $\phi^\ell \geq \phi^c$.*

Proof: By Proposition 1 an equilibrium with summary reversal $(\alpha^\ell > 0)$ must involve pandering; if it takes the form described in Remark 1 it must therefore satisfy $x_M = \tilde{x}_M(x_A) < H < x_A$ as well as $\phi^\ell = \phi^\ell(x_A, x_M)$ and $\phi^c(x_A, x_M)$. We must therefore show that $\phi^\ell(x_A, \tilde{x}_M(x_A)) \geq \phi^c(x_A, \tilde{x}_M(x_A))$ when $x_A \in (H, 1]$, which is equivalent to

$$\Pr(d = c) \cdot (1 - p)(H - \tilde{x}_M(x_A))^2 \geq \Pr(d = \ell) \cdot p(x_A - H)^2$$

Using that $(1 - p)(H - \tilde{x}_M(x_A))^2 = (1 - H)^2 - p(x_A - H)^2$, substituting into the desired

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condition, and rearranging yields that:

$$\Pr\left(d = c\right) \cdot \left(1 - H\right)^2 \geq p\left(x_A - H\right)^2$$

Finally, since $\Pr\left(d = c\right) \geq p x_A$ it suffices to show the stronger inequality $x_A\left(1 - H\right)^2 \geq \left(x_A - H\right)^2$. Clearly this holds strictly at $x_A = H$ and with equality at $x_A = 1$. Since both sides are strictly increasing in x_A with the l.h.s. linear and the r.h.s. strictly convex, it must therefore also hold for all values of $x_A \in (H, 1]$ (since if $x'_A\left(1 - H\right)^2 > \left(x'_A - H\right)^2$ at some x'_A then they must cross at most once over all $x_A \geq x'_A$). QED

The preceding establishes that the conditions in Observation A.1 are sufficient for summary refersal equilibria of the form in Remark 1, as well as necessary for summary reversal equilibria satisfying $\phi^\ell \geq \phi^c$. Using these conditions we next prove Proposition 2, which further characterizes summary reversal equilibria of the desired form, and shows that one such equilibrium always exists whenever an equilibrium without summary reversal does not.

Proof of Proposition 2

Suppose $\alpha^\ell > 0$ (there is summary reversal) so that $\Delta_\ell < 1 - G\left(\phi^\ell\right)$. Then by the preceding analysis there is a pandering equilibrium of the form in Remark 1 with pandering $x^*_A > H$ if and only if $x^*_A = \bar{x}_A\left(\Delta^\ell, \phi^\ell, \phi^c\right)$, $x_M = \tilde{x}_M\left(x^*_A\right)$, $\phi^\ell = \phi^\ell\left(x^*_A, \tilde{x}_M\left(x^*_A\right)\right)$, $\phi^c = \phi^c\left(x^*_A, \tilde{x}_M\left(x^*_A\right)\right)$, and $\tilde{x}_M\left(x^*_A\right) = \bar{x}_M\left(\Delta^\ell\right)$ where $\Delta^\ell = \left(1 - G(\phi^\ell)\right) \cdot \left(1 - \alpha^\ell\right)$; it is easily verified that this matches the conditions stated in the main text.

We next provide a straightforward fixed point characterization of equilibrium values of x^*_A. The final condition in the preceding list pins down the required value of $\Delta^\ell = \bar{x}_M^{-1}\left(\tilde{x}_M\left(x^*_A\right)\right) < 1 - G\left(\phi^\ell\right)$, where $\bar{x}_M^{-1}\left(x_M\right) = \left(\frac{x_M - M}{\epsilon_M} + 1\right)^{-1}$; substituting all quantities into the first equality a single necessary and sufficient equilibrium condition in the form of a fixed point:

$$x^*_A = \bar{x}_A\left(\bar{x}_M^{-1}\left(\tilde{x}_M\left(x^*_A\right)\right), \phi^\ell\left(x^*_A, \tilde{x}_M\left(x^*_A\right)\right), \phi^c\left(x^*_A, \tilde{x}_M\left(x^*_A\right)\right)\right) \tag{10}$$

We last use the fixed point characterization to show that a summary reversal equilibrium of this form exists whenever an equilibrium without summary reversal does not. Observe

that since $\bar{x}_A(1) \leq 1$ from the definition of $\bar{x}_A(\cdot)$, a *sufficient* (but not necessary) condition for the existence of a fixed point with $x_A^* > H$ is that the left hand side of eqn. 10 is strictly less than the right hand side when evaluated at $x_A^* = H$. Using $\phi^c(H, \tilde{x}_M(H)) = 0$ a sufficient condition for existence of a pandering equilibrium is therefore:

$$H < \bar{x}_A\left(\bar{x}_M^{-1}(\tilde{x}_M(H)), \phi^\ell(H, \tilde{x}_M(H)), 0\right).$$

Next using the definition of $\bar{x}_A(\cdot)$ the condition is equivalent to

$$H < H + \left(\frac{\left(1 - \bar{x}_M^{-1}(\tilde{x}_M(H))\right) - G\left(\phi^\ell(H, \tilde{x}_M(H))\right)}{\bar{x}_M^{-1}(\tilde{x}_M(H)) + G\left(\phi^\ell(H, \tilde{x}_M(H))\right)}\right) \cdot \epsilon_A$$

which in turn simplifies to

$$\bar{x}_M^{-1}(\tilde{x}_M(H)) < 1 - G\left(\phi^\ell(H, \tilde{x}_M(H))\right),$$

which is exactly the condition derived in the proof of Proposition 1 under which a summary reversal equilibrium is absent. QED

Proof of Proposition 3

We perform comparative statics on the equilibrium with the least amount of pandering (denoted $x_A^* \geq H$) whenever it exhibits a strictly positive amount of pandering $(x_A^* > H)$ and in addition the level of pandering is interior $(x_A^* < 1)$.

By definition, the equilibrium with the least amount of pandering actually exhibits pandering $(x_A^* > H)$ if and only if an equilibrium without pandering (and hence without summary reversal) does not exist. As previously shown this is the case if and only if $\bar{x}_M^{-1}(\tilde{x}_M(H)) < 1 - G\left(\phi^\ell(H, \tilde{x}_M(H))\right)$ (see the proof of Proposition 1), which we have also shown is exactly equivalent to the condition

$$H < \bar{x}_A\left(\bar{x}_M^{-1}(\tilde{x}_M(H)), \phi^\ell(H, \tilde{x}_M(H)), 0\right).$$

in the fixed point characterization of summary reversal equilibria in the proof of Proposition 2. If the lowest pandering equilibrium is also interior $(H < x_A^* < 1)$, then again by the fixed

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point characterization in the proof of Proposition 2 it must be the case that

$$x_A^* = H + \left(\frac{\left(1 - \bar{x}_M^{-1}\left(\tilde{x}_M\left(x_A^*\right)\right)\right) - \left(\frac{\phi^\ell\left(x_A^*,\tilde{x}_M\left(x_A^*\right)\right)+\phi^c\left(x_A^*,\tilde{x}_M\left(x_A^*\right)\right)}{k}\right)}{\bar{x}_M^{-1}\left(\tilde{x}_M\left(x_A^*\right)\right) + \left(\frac{\phi^\ell\left(x_A^*,\tilde{x}_M\left(x_A^*\right)\right)-\phi^c\left(x_A^*,\tilde{x}_M\left(x_A^*\right)\right)}{k}\right)} \right) \cdot \epsilon_A, \qquad (11)$$

and that l.h.s. is strictly less than the r.h.s. when evaluated $\forall x_A \in [H, x_A^*)$ (since otherwise there would be a strictly lower pandering equilibrium).

Next, to analyze comparative statics effects of some arbitrary parameter q on $x_A^*(q)$ under these circumstances, observe that *if* the right hand side of the preceding condition can be shown to be strictly increasing (decreasing) in q then it must be the case that $x_A^*(q) < x_A^*(q')$ for $q' > q$ (since then the r.h.s. evaluated at q' will be *strictly* greater than the l.h.s. $\forall x_A \in [H, x_A^*(q)]$, implying that the lowest fixed point $x_A^*(q')$ must be $> x_A^*(q)$).

We now consider which primitive parameters have an unambigious effect on the r.h.s. of eqn. 11 holding x_A fixed.

First observe that the parameters (M, ϵ_M) affecting the misaligned lower court's incentives only enter the rhs through $\bar{x}_M^{-1}(\cdot)$ (which is *increasing* in M and ϵ_M) and moreoever the r.h.s. is *decreasing* in $\bar{x}_M^{-1}(\cdot)$; hence *decreasing* either M or ϵ_M *increases* the right hand side, therefore causing equilibrium pandering to *increase*.

Last observe that the r.h.s. is unambigously increasing in both ϵ_A and $\bar{k}$. Thus, equilibrium pandering also *increases* as both the aligned lower court's reversal cost increases, and as the maximum of review cost increases (which causes the distribution of review costs to first order stochastically increase). QED

B.3 Higher Court Welfare

In this section we analyze the equilibrium welfare of the higher court.

Derivation of Equation 5. Recall from the main text that

$$
\begin{aligned}
EU^H \;=\;& \Pr(d = \ell) \cdot \left(E\left[u\left(x, H, \ell\right)|d = \ell\right] + \int_0^{\phi^\ell} \left(\phi^\ell - k\right) g\left(k\right) dk \right) \\
& + \Pr(d = c) \cdot \left(E\left[u\left(x, H, c\right)|d = c\right] + \int_0^{\phi^c} \left(\phi^c - k\right) g\left(k\right) dk \right)
\end{aligned}
$$

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Now $g(k) = \frac{1}{k}$ implies $\int_0^\phi (\phi - k) g(k) \, dk = \frac{\phi^2}{2k}$; substituting and rearranging yields $EU^H =$

$$\Pr(d = \ell) \cdot E \left[\frac{u(x, H, \ell) - u(x, H, c)}{2} \Big| d = \ell \right] + \Pr(d = c) \cdot E \left[\frac{u(x, H, c) - u(x, H, \ell)}{2} \Big| d = c \right]$$

$$+ E \left[\frac{u(x, H, \ell) + u(x, H, c)}{2} \right] + \left(\frac{1}{2\bar{k}} \right) \left(\Pr(d = \ell) \cdot \left((\phi^\ell)^2 \right) + \Pr(d = c) \cdot \left((\phi^c)^2 \right) \right)$$

which in turn is equal to:

$$E \left[\frac{x - H}{2} \right] + \frac{1}{2} \left(\Pr(d = \ell) \cdot \Lambda_H^\ell - \Pr(d = c) \cdot \Lambda_H^c \right)$$

$$+ \left(\frac{1}{2\bar{k}} \right) \left(\Pr(d = \ell) \cdot \left((\phi^\ell)^2 \right) + \Pr(d = c) \cdot \left((\phi^c)^2 \right) \right),$$

recalling that $\Lambda_H^d = E^d[x] - H = E[x - H | d]$.

Now recall from the proof of Appendix Lemma A.6 that $\Lambda_H^\ell = \frac{(1-H)^2 - p(x_A - H)^2 - (1-p)(H - x_M)^2}{2 \Pr(d = \ell)}$;

using a similar method as in that proof we would like to calculate Λ_H^c. We have that Λ_H^c

$$= \Pr(x \geq H | d = c) \cdot (E[x | x \geq H, d = c] - H) + \Pr(x \leq H | d = c) \cdot (E[x | x \leq H, d = c] - H)$$

$$= \Pr(x \geq H | d = c) \cdot \left(\begin{array}{c} \Pr(L = A | x \geq H, d = c) \cdot (E[x | L = A, x \geq H, d = c] - H) \\ + \Pr(L = M | x \geq H, d = c) \cdot (E[x | L = M, x \geq H, d = c] - H) \end{array} \right)$$

$$+ \Pr(x \leq H | d = c) \cdot \left(\begin{array}{c} \Pr(L = A | x \leq H, d = c) \cdot (E[x | L = A, x \leq H, d = c] - H) \\ + \Pr(L = M | x \leq H, d = c) \cdot (E[x | L = M, x \leq H, d = c] - H) \end{array} \right)$$

$$= \frac{1}{\Pr(d = c)} \cdot \left(\begin{array}{c} \Pr(L = A, x \geq H, d = c) \cdot (E[x | L = A, x \geq H, d = c] - H) \\ + \Pr(L = M, x \geq H, d = c) \cdot (E[x | L = M, x \geq H, d = c] - H) \\ + \Pr(L = A, x \leq H, d = c) \cdot (E[x | L = A, x \leq H, d = c] - H) \\ + \Pr(L = M, x \leq H, d = c) \cdot (E[x | L = M, x \leq H, d = c] - H) \end{array} \right)$$

$$= \frac{1}{\Pr(d = c)} \cdot \left(p(x_A - H) \cdot \left(\frac{H + x_A}{2} - H \right) + pH \left(\frac{H}{2} - H \right) + (1 - p) x_M \cdot \left(\frac{x_M}{2} - H \right) \right)$$

$$= \frac{1}{2 \Pr(d = c)} \cdot \left(p(x_A - H)^2 + (1 - p)(H - x_M)^2 - H^2 \right)$$

Substituting these quantities into the previous expression and rearranging yields that $EU^H =$

$$E \left[\frac{x - H}{2} \right] + \frac{1}{4} \left(\begin{array}{c} \left((1 - H)^2 - p(x_A - H)^2 - (1 - p)(H - x_M)^2 \right) \\ + \left(H^2 - p(x_A - H)^2 - (1 - p)(H - x_M)^2 \right) \end{array} \right)$$

$$+ \left(\frac{1}{2\bar{k}} \right) \left(\Pr(d = \ell) \cdot \left((\phi^\ell)^2 \right) + \Pr(d = c) \cdot \left((\phi^c)^2 \right) \right),$$

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Finally, subtracting $E\left[\frac{x-H}{2}\right]$ and multiplying through by 4 (neither of which depend on the strategies) yields the expression in main text Equation 5 for $\tilde{EU}^H$.

Equilibrium Characterization without Summary Reversal

We next fully characterize equilibrium when summary reversal is not an option available to the higher court.

Absent the possibility of summary reversal we must have $\alpha^\ell = 0$ so that $\Delta_\ell = 1 - G\left(\phi^\ell\right)$; then by Proposition B.1 there is no pandering $(\Pr\left(d = c|x \geq H\right) = 0)$ and $\phi^c = \phi^c_\ell = 0$, implying that $\phi^\ell = \phi^\ell\left(H, x_M\right) \geq \phi^c = 0$ and $x_A = \bar{x}_A\left(1 - G\left(\phi^\ell\right), \phi^\ell, 0\right) = H$. Thus, any equilibrium in the model without the summary reversal option must take the form in main text Remark 1, and such a strategy profile will be an equilibrium i.f.f. $x_M = \bar{x}_M\left(\Delta^\ell\right)$. (Unlike the main model in which summary reversal is an option, we no longer require that $x_M \geq \tilde{x}_M\left(\Delta^\ell\right)$, i.e., we no longer require that the higher court would not *want* to exercise the summary reversal option if she could.)

Substituting in the required values of Δ^ℓ and ϕ^ℓ, such a profile with a level of noncompliance $x_M^* < H$ will be an equilibrium i.f.f.

$$x_M^* = \bar{x}_M\left(1 - G\left(\phi^\ell\left(H, x_M^*\right)\right)\right),$$

where $\bar{x}_M\left(\Delta^\ell\right) = \max\left\{M + \left(\frac{1-\Delta^\ell}{\Delta^\ell}\right) \cdot \epsilon_M, 0\right\}$). Finally recall that $G\left(\phi^\ell\left(H, x_M\right)\right)$ is strictly decreasing in x_M and $\bar{x}_M\left(\Delta^\ell\right)$ is strictly decreasing in Δ^ℓ until it (potentially) reaches 0. Thus $\bar{x}_M\left(1 - G\left(\phi^\ell\left(H, x_M\right)\right)\right)$ is strictly decreasing in x_M with $\bar{x}_M\left(1 - G\left(\phi^\ell\left(H, H\right)\right)\right) = \bar{x}_M\left(0\right) = M < H$. Therefore there is a unique equilibrium $x_M^* \in (M, H)$ satisfying $x_M^* \geq 0$.

Now there are two possibilities for the unique equilibrium. First we may have, that $M + \left(\frac{G\left(\phi^\ell\left(H,0\right)\right)}{1-G\left(\phi^\ell\left(H,0\right)\right)}\right) \cdot \epsilon_M = M + \left(\frac{\phi^\ell\left(H,0\right)}{\bar{k}-\phi^\ell\left(H,0\right)}\right) \leq 0$ so that $\bar{x}_M\left(1 - \frac{\phi^\ell\left(H,0\right)}{\bar{k}}\right) = 0 = x_M^*$, i.e., a misaligned lower court always rules liberally. Second we may have that $M + \left(\frac{\phi^\ell\left(H,0\right)}{\bar{k}-\phi^\ell\left(H,0\right)}\right) \cdot \epsilon_M > 0$, so that there is a unique $x_M^* > 0$ such that

$$x_M^* = \bar{x}_M\left(1 - \frac{\phi^\ell\left(H,0\right)}{\bar{k}}\right) = M + \left(\frac{\phi^\ell\left(H, x_M^*\right)}{\bar{k} - \phi^\ell\left(H, x_M^*\right)}\right) \cdot \epsilon_M$$

and a misaligned lower court sometimes rules conservatively. Finally, it is easily verified that

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x_M^* is strictly decreasing in $\bar{k}$ unless $x_M^* = 0$ at some $\bar{k}$ which point it is constant and 0 thereafter; the latter will occur at a sufficiently high $\bar{k}$ i.f.f. $M < 0$.

Proof of Proposition 4

We first consider equilibrium of the game without summary reversal. For the proof we explicitly denote the dependence of the unique equilibrium compliance cutpoint $x_M^N (\bar{k})$ in the model with no summary reversal on $\bar{k}$. Observe that for any value of x_M we have $\phi^\ell (H, x_M)$ is bounded above by $\phi^\ell (H, 0)$; thus in any equilibrium of the model with no summary reversal the quantity $\left(\frac{\phi^\ell \left(H, x_M^N(\bar{k}) \right)}{\bar{k} - \phi^\ell \left(H, x_M^N(\bar{k}) \right)} \right) \cdot \epsilon_M \to 0$ as $\bar{k} \to \infty$, implying from the definition of $\bar{x}_M (\cdot)$ and the equilibrium characterization that $x_M^N (\bar{k}) \to \max \{M, 0\}$ as $\bar{k} \to \infty$; since we have assumed $\max \{M, 0\} < \tilde{x}_M (0)$ it is therefore the case that

$$(1 - H)^2 - \left(p \left(x_A^N (\bar{k}) - H \right)^2 + (1 - p) \left(H - x_M^N (\bar{k}) \right)^2 \right) = (1 - H)^2 - (1 - p) \left(H - x_M^N (\bar{k}) \right)^2 < 0$$

for sufficiently large $\bar{k}$.

We next consider equilibrium of the game with summary reversal. By Proposition 1 we have that *every* equilibrium involves summary reversal i.f.f.

$$M < \bar{M} (\bar{k}) = \tilde{x}_M (H) - \left(\frac{\phi^\ell (H, \tilde{x}_M (H))}{\bar{k} - \phi^\ell (H, \tilde{x}_M (H))} \right) \cdot \epsilon_M$$

Since $\bar{M} (\bar{k})$ increasing in $\bar{k}$ and $\to \tilde{x}_M (H)$ as $\bar{k} \to \infty$ and we have assumed $M < \tilde{x}_M (H)$, we have that every equilibrium of the game with summary reversal involves the actual use of summary reversal in equilibrium for sufficiently high $\bar{k}$. Thus, in any equilibrium of the game with summary reversal we have that $(1 - H)^2 = p \left(x_A^S - H \right)^2 + (1 - p) \left(H - x_M^S \right)^2$.

Combining, we have that for sufficiently high $\bar{k}$ it is the case that $\tilde{EU}_S^H - \tilde{EU}_N^H =$

$$2 \left((1 - p) \left(H - x_M^N (\bar{k}) \right)^2 - (1 - H)^2 \right) + \frac{2}{\bar{k}} \left(\begin{array}{c} \Pr_S (d = \ell) \cdot \left(\phi_S^\ell \right)^2 - \Pr_N (d = \ell) \cdot \left(\phi_N^\ell \right)^2 \\ + \Pr_S (d = c) \cdot \left(\phi_S^c \right)^2 - \Pr_N (d = c) \cdot \left(\phi_N^c \right)^2 \end{array} \right)$$

regardless of the choice of equilibrium of the game with summary reversal. Finally, it is easily verified that the term in the parentheses following $\frac{2}{\bar{k}}$ is bounded for all feasible values of (x_M, x_A); thus, the maximum value of the second term over all possible equilibria of the summary reversal game approaches 0 as $\bar{k} \to \infty$; since $(1 - p) \left(H - x_M^N (\bar{k}) \right)^2 - (1 - H)^2$

increasing in $\bar{k}$ and > 0 for sufficiently high $\bar{k}$ the entire expression must be > 0 regardless of the equilibrium chosen in the summary reversal game for sufficiently high $\bar{k}$. QED

Proof of Proposition 5

We first consider properties of the game without summary reversal. Recall that we have assumed $0 < \tilde{x}_M(H) \iff 0 < H - \frac{1-H}{\sqrt{1-p}}$; this assumption may be equivalently interpreted as a bound on H, i.e., that $H > \frac{1}{\sqrt{1-p}+1} \in \left[\frac{1}{2}, 1\right]$ (in addition to $H < 1$). Next it is easily verified that $\left(\frac{G(\phi^\ell(H,0))}{1-G(\phi^\ell(H,0))}\right) \cdot \epsilon_M$ is bounded below for all feasible values of H. Thus, from the equilibrium characterization of the game without summary reversal, we have that for sufficiently low M the unique equilibrium of the game without summary reversal is $x_M^N = 0$ for any feasible value of H.

We next consider properties of the game with summary reversal. Since it is easily verified that $\left(\frac{\phi^\ell(H,\tilde{x}_M(H))}{k-\phi^\ell(H,\tilde{x}_M(H))}\right) \cdot \epsilon_M$ is also bounded below for all feasible values of H, we have that for sufficiently low M every equilibrium of the game with summary reversal involves the use of summary reversal for any feasible value of H, implying that in any equilibrium $(1-H)^2 = p\left(x_A^S - H\right)^2 + (1-p)\left(H - x_M^S\right)^2$. Next, from the equilibrium characterization in Proposition 2 any equilibrium $\left(x_M^S, x_A^S\right)$ must also satisfy $x_M^S = \tilde{x}_M\left(x_A^S\right)$ and $\Delta_S^\ell = \bar{x}_M^{-1}\left(\tilde{x}_M\left(x_A^S\right)\right) = \left(\frac{x_M - M}{\epsilon_M} + 1\right)^{-1}$ and

$$x_A^S = \bar{x}_A\left(\Delta_S^\ell, \phi^\ell\left(x_A^S, \tilde{x}_M\left(x_A^S\right)\right), \phi^c\left(x_A^S, \tilde{x}_M\left(x_A^S\right)\right)\right),$$

recalling that $\bar{x}_A\left(\Delta^\ell, \phi^\ell, \phi^c\right) = \min\left\{H + \left(\frac{(1-\Delta^\ell)-(G(\phi^\ell)+G(\phi^c))}{\Delta^\ell+(G(\phi^\ell)-G(\phi^c))}\right) \cdot \epsilon_A, 1\right\}$. Now $\left(\frac{x_M - M}{\epsilon_M} + 1\right)^{-1}$ is bounded above by $\left(1 - \frac{M}{\epsilon_M}\right)^{-1}$ which in turn approaches 0 as $M \to -\infty$. Further, $\phi^\ell\left(x_A, \tilde{x}_M\left(x_A\right)\right)$ and $\phi^c\left(x_A, \tilde{x}_M\left(x_A\right)\right)$ are both bounded for all feasible values of $H \in \left(H - \frac{1-H}{\sqrt{1-p}}, 1\right)$ and $x_A \in (H, 1]$. Thus, for sufficiently small M we have that

$$\left(\frac{(1-\Delta_S^\ell)-\left(G\left(\phi^\ell\left(x_A^S, \tilde{x}_M\left(x_A^S\right)\right)\right)+G\left(\phi^c\left(x_A^S, \tilde{x}_M\left(x_A^S\right)\right)\right)\right)}{\Delta_S^\ell + \left(G\left(\phi^\ell\left(x_A^S, \tilde{x}_M\left(x_A^S\right)\right)\right) - G\left(\phi^c\left(x_A, \tilde{x}_M\left(x_A\right)\right)\right)\right)}\right) \cdot \epsilon_A > 1 - H$$

in any equilibrium of the game with summary reversal for any feasible value of H. Finally, this implies that $\bar{x}_A\left(\Delta_S^\ell, \phi^\ell\left(x_A^S, \tilde{x}_M\left(x_A^S\right)\right), \phi^c\left(x_A^S, \tilde{x}_M\left(x_A^S\right)\right)\right) = 1 = x_A^S$, i.e., for sufficiently low M, the unique equilibrium of the game with summary reversal is "full pandering" ($x_A^S =$

1) for any feasible value of H.

Combining the preceding, for sufficiently low M we have that $\tilde{E}U_S^H - \tilde{E}U_N^H =$

$$2\left((1-p)(H)^2 - (1-H)^2\right) + \frac{2}{\tilde{k}}\left(\begin{array}{c} \Pr_S(d=\ell) \cdot \left(\phi^\ell(1,\tilde{x}_M(1))\right)^2 + \Pr_S(d=c) \cdot \left(\phi^c(1,\tilde{x}_M(1))\right)^2 \\ - \Pr_N(d=\ell) \cdot \left(\phi^\ell(H,0)\right)^2 \end{array}\right)$$

for any feasible value of H, where $\tilde{x}_M(1) = 2H - 1$. Now observe that $(1-p)H^2 - (1-H)^2 = 0$ at $H = \frac{1}{\sqrt{1-p}+1}$. Thus, if the expression inside the parentheses following $\frac{2}{k}$ is strictly negative evaluated at $H = \frac{1}{\sqrt{1-p}+1}$, then we have that the preceding expression approaches a number that is strictly negative as $H \to \frac{1}{\sqrt{1-p}+1}$, yielding the desired result (i.e., that we may select an M sufficiently low and H sufficiently close to $\frac{1}{\sqrt{1-p}+1}$ such that the higher court is strictly better off without summary reversal). To see that this is the case, observe that the expression inside the parentheses may be written as:

$$\frac{(1-H)^4}{4}\left(\frac{(1-p)^2}{\Pr_S(d=\ell)} + \frac{p^2}{\Pr_S(d=c)}\right) - \frac{H^4}{4}\frac{(1-p)^2}{\Pr_N(d=\ell)}.$$

Substituting in $H = \frac{1}{\sqrt{1-p}+1}$ and simplifying yields that this expression will be strictly negative i.f.f.

$$\frac{1}{\Pr_N(d=\ell)} > \frac{(1-p)^2}{\Pr_S(d=\ell)} + \frac{p^2}{\Pr_S(d=c)}.$$

Now the equilibrium probabilities are $\Pr_N(d=\ell) = p(1-H) + (1-p) = \sqrt{1-p}$ and $\Pr_S(d=\ell) = (1-p)2(1-H) = \frac{2(1-p)^{\frac{3}{2}}}{\sqrt{1-p}+1}$. Further it is straightforward to show that $\sqrt{1-p} \leq 1$ (which always holds) implies that $\Pr_S(d=\ell) \leq 1-p$, which then implies that $\Pr_S(d=c) \geq p$. Thus, to show the preceding condition it suffices to show the stronger condition

$$\frac{1}{\Pr_N(d=\ell)} > \frac{(1-p)^2}{\Pr_S(d=\ell)} + p.$$

Finally, substituting in the equilibrium probabilities yields $\frac{1}{\sqrt{1-p}} > \frac{(\sqrt{1-p}+1)\sqrt{1-p}}{2} + p$ which simplifies to $\sqrt{1-p} < 1$, which holds $\forall p > 0$. QED.