

Public Markets for Litigation Finance*

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Abstract

We study emerging public markets for legal cases and how they affect financing decisions and settlement bargaining. We provide a theoretical model in which a risk-averse plaintiff sells a share of case proceeds to risk-averse and informed investors, and subsequently engages in bargaining with a defendant. In both public and private markets, financing induces a legal friction by reducing the plaintiff's exposure to trial risk, strengthening his bargaining position and making court trial more likely. Its strategic use induces a financial friction. The plaintiff anticipates the commitment benefit and sells more than efficient risk sharing would justify, which strengthens commitment and further enhances the legal friction. In public markets, prices add information but need not foster agreement. A sufficiently informative public price may in fact increase trial incidence relative to private financing and can induce the plaintiff to sell a larger share. An optimal regulatory cap maximizing the litigants' joint welfare is always binding below the efficient risk benchmark.

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1 Introduction

Litigation finance markets enable litigants to obtain funding from investors for their legal cases, e.g., for corporate litigation and patent infringement disputes. Over the past two decades, these markets have grown substantially, reaching an estimated USD 20 billion annually worldwide by 2025.¹ They attract not only specialized litigation funds but also hedge funds and other institutional investors. While these financial markets may provide better access to justice for individuals and firms, they may also influence the real outcomes of litigation and have thus drawn increasing scrutiny from both practitioners and academics [Beisner and Rubin, 2012, Daughety and Reinganum, 2014, European Parliament, 2022].

A central concern is how the structure of financing contracts affects settlement bargaining. The financing contracts typically take a non-recourse structure. Litigants sell shares of future litigation cash flows to investors without repayment obligations if the case fails. According to legal scholars Steinitz [2013] and Solas [2019], these contracts may serve as commitment devices for litigants in the bargaining. By reducing the litigants' exposure to uncertain trial outcomes, they can strengthen the litigants' bargaining positions. With smaller potential losses, they make tougher settlement demands of their opponents. While this may benefit individual litigants, it ultimately drives more cases to court, a potentially costly outcome for the legal system. Moreover, the separation of risk bearing and settlement control can misalign litigants and their investors.

A notable recent development in litigation finance, however, has been the emergence of Juristrade, a market exchange launched in 2025 that allows institutional investors to trade shares in litigation claims at publicly observable prices. When a lawsuit is priced publicly via such a market, this fundamentally changes the lawsuit's informational environment. The participants on this public market are often specialized litigation finance funds, which possess data from previously financed cases that are highly informative about the expected proceeds from a claim. Public prices reveal this information to all litigants involved. Since common information usually fosters more agreement in negotiations, one might naively expect such a public market to improve efficiency in legal outcomes.

This paper examines the emerging public markets for litigation financing through a theoretical lens and assesses whether their public nature can indeed always improve bargaining efficiency. We construct a parsimonious model that features two main channels through which financing affects bargaining: a commitment channel, through selling shares to investors and reducing exposure to risky court outcomes, and an information channel, through the additional information provided by public prices. Specifically, our model combines one-sided asymmetric-information settlement bargaining with a noisy rational expectations financial market. At the outset, the defendant privately knows her liability,

¹See Research Nester [2025].

while both litigants remain uncertain about the court ruling. Before bargaining, the plaintiff decides which share of the case proceeds to sell to an uninformed underwriter, which places it with competitive investors. After observing private signals about the case, the investors trade and a market-clearing price emerges. In the public market, both litigants observe this price and update their beliefs before bargaining. In the private market, the price remains undisclosed, and bargaining proceeds under the prior. The defendant then makes a settlement offer, which the plaintiff either accepts or rejects in favor of trial. With this set-up, we allow the commitment and information channels to interact. Plaintiff chooses the share sold for financing endogenously anticipating the information obtained from the market. Hence, any shift in the informational environment in the public market affects bargaining outcomes directly, but also through changes in financing and the concomitant commitment channel.

Our results are as follows.

Firstly, in both public and private markets, a legal friction emerges from financing. Financing increases the likelihood that a dispute proceeds to court trial. By selling exposure to trial risk, the plaintiff strengthens his bargaining position. Through this commitment, he obtains higher settlement offers, but also rejects more offers he would otherwise have accepted. Upon rejection, the court trial is costly due to the risk involved. A second financial friction emerges when the plaintiff uses financing strategically. The plaintiff individually optimally oversells relative to the share that maximizes joint risk-sharing surplus with the investors. He anticipates the benefits from commitment, which, at the benchmark, are first order and dominate the second-order loss from inefficient risk-sharing. This distorted allocation leaves investors bearing more effective risk than the plaintiff, so they may prefer settlement when he chooses trial. Strategic financing thus misaligns the plaintiff's and investors' preferences over settlement. Strikingly, this financial friction also aggravates the legal friction. Overselling further reduces the plaintiff's exposure to trial risk and makes trial even more likely.

We contribute with these results by formalising the concerns raised by [Steinitz \[2013\]](#), while also providing a mechanism for the misalignment between the investors and plaintiffs.² The most closely related models of litigation finance of [Daughety and Reinganum \[2014\]](#), [Spier and Prescott \[2019\]](#) and [Antill and Grenadier \[2023\]](#) do not study this endogenous conflict between risk sharing and settlement control. More generally, our results have parallels to the empty-creditor problem of [Bolton and Oehmke \[2011\]](#), where hedging, albeit through a different type of contract and mechanism, strengthens commitment and impedes agreement.

²[Steinitz \[2013\]](#) describes the misalignment between funders and plaintiffs as follows: “[T]he concern is that funders are incentivized to settle early for a discounted but secure amount rather than proceed to a costly trial that may result in a loss or low recovery. [...] And the plaintiff, who no longer bears the risk of a loss, may now have an incentive to resist a reasonable and rational early settlement in favor of a late settlement or even a risky and expensive trial.”

Secondly, we study public markets for litigation financing, which have only recently emerged. In our model, more information reduces the residual trial risk, which makes trial more attractive and prevalent. The total effect on the risk of case proceeds is negative, since the former dominates the latter. This creates opposing forces affecting the financing share. On the one hand, each unit sold removes less risk and therefore provides less commitment, which weakens the plaintiff’s incentive to sell. On the other, a more informative price creates greater news risk for his retained stake, making the hedge from selling more valuable. When the share sold is sufficiently small, the weaker commitment effect is limited and the news-hedging effect dominates. A more informative price then raises the share sold. Notably, however, public finance may not always be preferred by the plaintiff. In particular, when the optimal share sold is sufficiently close to 1, the plaintiff prefers private financing. Near full sale, public information no longer benefits the plaintiff but raises the trial mass and thereby lowers the price investors pay.

This part of our analysis contributes to the literature on the real effects of financial markets [Bond et al., 2012, Goldstein, 2023]. Price information feeds back into bargaining³. It also relates to the literature on separation of ownership and control [Jensen and Meckling, 1976]. Investors acquire cash-flow rights while the plaintiff retains all bargaining control, reflecting restrictions on funder control associated with champerty and maintenance doctrines in the United States. The interaction between these two literatures is central to our results. We demonstrate a novel channel from market information through the financing decision onto real world outcomes, which acts based on the allocation of ownership and control.

Thirdly, we turn from the parties’ private incentives to the effects on the legal system. Financing expands access to justice by making filing more attractive, but the commitment and information channels also increase court use. We find that, even when financing shares differ, a sufficiently informative public price therefore raises the trial mass per filed case relative to private financing. The tension between better risk sharing and a greater burden on courts motivates our final policy result. We study limits to the share of case proceeds that investors may receive, such as the 40 percent cap proposed by the European Parliament [European Parliament, 2022]. Our model provides a justification for such limits. In a private market setting, the cap maximizing the litigants’ joint welfare per filed case is binding and increases with market liquidity. More liquid markets absorb the transferred risk at a smaller price discount, so the risk-sharing gains justify a larger financing share.

³Litigation funders are widely regarded as experts in valuing claims, an exercise generally regarded as difficult. Their data advantage comes from the due diligence, legal analysis and damages modeling they conduct before committing capital, and from the data they accumulate as repeat players. As Solas [2019] observes: “Third party funders [...] would be more capable of pricing the value of that claim. Having a more precise assessment [...] levels the playing field and obviously induces [...] higher settlement amounts.”

We also consider an extension of our model with respect to endogenous underwriting. We let the underwriter respond to a larger sale by bringing more investors into the market. The larger investor base spreads risk more widely and supports a higher price, which gives the plaintiff another reason to sell more. Moreover, we conduct a robustness check on the selection of the fully separating bargaining equilibrium. We ask whether financing and informative prices may make pooling equilibria more prevalent under a persuasiveness criterion of [Zeng \[2025\]](#). Our results, however, indicate otherwise, reinforcing our prediction that more disputes reach trial.

2 Related Literature

We contribute to a broad strand in financial economics on how financial contracting and capital structure shape real outcomes in bargaining and renegotiation. This theme appears across several settings. As mentioned above, [Bolton and Oehmke \[2011\]](#) show that in the workout of distressed corporate debt, credit default swaps can create an “empty creditor” whose hedged exposure strengthens its bargaining position and makes efficient renegotiation harder. In labor and contract renegotiation, a firm’s leverage becomes a strategic device that shifts the surplus it can extract from its counterparties [[Perotti and Spier, 1993](#)]. In litigation finance, contracting with an outside investor can affect the litigant’s subsequent incentives in settlement bargaining.

Within the literature on litigation finance, our work is most closely related to [Daughety and Reinganum \[2014\]](#) and [Spier and Prescott \[2019\]](#). Both speak to a central critique of the U.S. Chamber Institute for Legal Reform, that third-party funding makes reasonable settlement offers less attractive and thereby drives greater use of the courts [[Beisner and Rubin, 2012](#)]. Studying how financing shapes settlement bargaining and trial incidence, the two nonetheless reach opposing conclusions. [Daughety and Reinganum \[2014\]](#) run counter to the critique, finding that financing promotes settlement and reduces trial incidence, a result driven by the contingent nature of the funding contract. [Spier and Prescott \[2019\]](#) support it, finding that financing depresses settlement, a result driven by the effect of financing on the litigant’s effective risk aversion. Neither paper, however, addresses the agency problem between the litigant and the investor, detailed in [Steinitz \[2013\]](#). The funder prefers an early, discounted but secure settlement, whereas the litigant, shielded from the downside of a loss, holds out for a costly trial. In our model, this tension arises endogenously.

The two papers differ first in how they model the bargaining stage. Daughety and Reinganum resolve settlement through a non-cooperative signaling game, but keep their litigants risk-neutral. Spier and Prescott admit risk aversion, yet reduce bargaining to a reduced-form Nash solution. We combine the two, embedding risk-averse litigants in an explicit non-cooperative bargaining game. This lets us trace how financing affects

bargaining through the litigant’s risk exposure, and expose the agency conflict between litigant and investor that a reduced-form treatment cannot capture.

The two papers differ again in the financing stage. Daughety and Reinganum let the funder write contingent contracts under symmetric information. Spier and Prescott endow the parties with divergent beliefs and restrict them to simple risk-sharing contracts. To isolate the effect of financing on risk, we follow Spier and Prescott and keep the contract a linear proportional claim on proceeds, abstracting from the nonlinear, award-dependent waterfalls of Daughety and Reinganum. While such nonlinear contracts are common in practice, we focus on the non-recourse nature of a constant-share claim. We then depart from both by letting the claim trade on a public market whose price aggregates the investors’ information, which lets us study how the informativeness of that price shapes the division of trial risk between litigant and investors. Relative to [Spier and Prescott \[2019\]](#), whose result is closest to ours, the plaintiff in our model chooses the share sold, and he oversells relative to the risk-minimizing share.

Our work relates to the literature on the real effects of financial markets, in which information revealed through prices feeds back into real outcomes. Extensive surveys are provided by [Bond et al. \[2012\]](#) and [Goldstein \[2023\]](#). Both of our markets build on the noisy rational expectations equilibria of [Hellwig \[1980\]](#), [Admati \[1985\]](#): a large population of risk-averse investors with private signals trades against noise demand, and the price reveals a noisy statistic of the investors’ information. Two features distinguish our use of this framework. The asset’s payoff is itself the outcome of a bargaining game, and whether the price feeds back into that game depends on its observability to the litigants. The issuer also sells to an uninformed underwriter before the market opens, so that the price can move his beliefs but not his revenue. Selling before the price is realized then insures him against the news the price will bring, the effect of [Hirshleifer \[1971\]](#).

A similar phenomenon is studied by [Avraham and Wickelgren \[2018\]](#). Rather than being revealed through a public price, the investor’s information is conveyed by admitting the private funding contract as evidence in court. They model funders who receive informative binary signals about case strength and compete under monopoly and Bertrand duopoly, and ask whether such admissibility is welfare-improving. There the admissible contract credibly signals case quality to the court, as a high-signal funder must offer more favorable terms to separate from a low-signal imitator, reducing funders’ monopoly rents and expanding access to financing. In our setting, the public price instead conveys information about the common court factor to the defendant, and we study its effect on settlement bargaining.

More recent work has examined litigation finance from complementary perspectives. [Antill and Grenadier \[2023\]](#) model bargaining as a dynamic real option and consider the effect of relaxing the plaintiff’s ex-ante financial constraints on the defendant’s defensive spending. They show that financing can raise joint surplus. A better-funded plaintiff

deters the defendant from wasteful defensive spending, an argument most applicable to the US legal system, where initial investment capacity for legal strategies is crucial. Unlike ours, their model abstracts from asymmetric information to isolate the effect of the relaxation of the financial constraints and the dynamic real option bargaining.

Other noteworthy contributions in the field of litigation finance include the following. Using a large dataset of U.S. federal civil lawsuits, [Lera et al. \[2023\]](#) document variation in case duration, win rates and awards, and develop a model in which litigation finance expands access to justice but may increase court workloads. [Grenadier and Grenadier \[2026\]](#) show how disclosure requirements regarding financing arrangements impact litigation outcomes. [Choi and Spier \[2018\]](#) investigate interactions of legal cases with stock markets, where a short position can be taken on the opponent in litigation. [Landeo and Nikitin \[2018\]](#) consider how attorney financing shapes litigation incentives in related settings. [Dana and Spier \[1993\]](#) examine contingent fee arrangements when attorneys possess superior information about case quality relative to clients. The most closely related works from the classical litigation and settlement bargaining literature include [Bebchuk \[1984\]](#) and [Schweizer \[1989\]](#). For equilibrium selection, we employ the D1 criterion [[Cho and Kreps, 1987](#), [Cho and Sobel, 1990](#)]. Subsection 6.3 replaces it with the persuasiveness criterion of [Zeng \[2025\]](#). [Myerson \[1984\]](#) develops a neutral bargaining solution specific to bargaining under incomplete information. Applying it to our setting yields related results, but requires a separate derivation.

3 A Baseline Model of Litigation Finance

In this section, we develop a baseline multi-stage model of litigation financing followed by settlement bargaining under incomplete information. A plaintiff holds a litigation claim against a defendant. The plaintiff decides whether to finance the claim and, if so, chooses the share of future claim proceeds to sell to an investor. Subsequently, in the settlement bargaining, the defendant is privately informed about her liability. She makes a take-it-or-leave-it offer to the plaintiff, and the plaintiff decides whether to accept it. Upon rejection, the case proceeds to trial. The litigation claim consists of one indivisible issue, and the financial market is modeled as an uninformed representative investor.

To isolate the commitment effect of financing, the baseline model abstracts from multi-issue claims, financial market trading, price informativeness and fees. The resulting analysis provides building blocks for the general model in Section 4. In the following, we first describe the model, then characterize the settlement bargaining for a given financing choice, and finally turn to the financing stage.

3.1 Model

Settlement bargaining. A plaintiff P (he) holds a claim against a defendant D (she), which a court may adjudicate at trial. The case consists of one indivisible issue. Nature assigns the defendant a liability type $\theta \in \{\theta_g, \theta_b\} \subset (0, 1)$ with $\theta_g < \theta_b$. We refer to θ_g as the good defendant type and to θ_b as the bad defendant type. The defendant is the good type with probability $\psi \in (0, 1)$ and the bad type with probability $1 - \psi$. The defendant privately observes her type, whereas the plaintiff knows only these probabilities. If the case goes to trial, the court awards $\theta + J$, where J is the common court factor. Nobody observes J before trial. Both parties hold the common prior $J \sim \mathcal{N}(\mu_0, \sigma_0^2)$, with precision $\tau_0 \equiv 1/\sigma_0^2$. The common court factor is independent of θ . The defendant's liability type is thus her private information, while both litigants face uncertainty about the court factor. The Gaussian payoff is a tractable affine approximation to net case value and may be negative. We therefore use “non-recourse” only to mean that the plaintiff owes no fixed repayment outside the modeled claim payoff, not that the security payoff is truncated at zero.

The defendant proposes a transfer $x \in \mathbb{R}$ to the plaintiff, who chooses whether to accept it and may randomize between acceptance and rejection. We define $\pi(x)$ as the acceptance probability. Both litigants exhibit constant absolute risk aversion over their aggregate wealth, with $u_j(w) = -e^{-\rho_j w}$ for $j \in \{P, D\}$ and $\rho_j > 0$. While trial imposes no direct costs, the litigants are subject to the risk from the trial award.

Financing. Let Y denote the case proceeds from potential settlement or trial. Before the bargaining, the plaintiff publicly chooses the share sold $\gamma \in [0, 1]$ of the proceeds Y ; the retained share is $1 - \gamma$. The bargaining analysis below applies to $\gamma < 1$; full sale is treated separately under Assumption 1. The plaintiff makes a take-it-or-leave-it offer to an uninformed representative investor I , consisting of the share sold γ and a price p . The investor holds the same prior as the plaintiff and exhibits constant absolute risk aversion, with $u_I(w) = -e^{-\rho_I w}$ and $\rho_I > 0$.

Equilibrium concept. We analyze perfect Bayesian equilibria (PBE), which consist of a strategy profile and a belief system satisfying sequential rationality and belief consistency. Let $\hat{\psi}(x)$ denote the plaintiff's posterior probability that the defendant is the good type after the offer x . We apply the D1 criterion to select among these equilibria in the bargaining game [Cho and Kreps, 1987, Cho and Sobel, 1990]. In Subsection 6.3, we examine how financing affects equilibrium selection under the persuasiveness criterion of Zeng [2025].

3.2 Settlement Bargaining

We proceed by backward induction and characterize the settlement bargaining outcome for a given financing choice γ . Beliefs about the court factor remain at the prior throughout the baseline model, and we write $\mu_{\text{rep}} \equiv \mu_0$, $\sigma_{\text{rep}}^2 \equiv \sigma_0^2$ and $\tau_{\text{rep}} \equiv \tau_0$. The one-issue bargaining stage is a signaling game in which the defendant proposes a settlement transfer to the plaintiff. Like most signaling games, the stage exhibits equilibrium multiplicity.

For notational ease, we define the certainty equivalent transfers at which the plaintiff and defendant are indifferent between settlement and trial for a given type θ . Conditional on type, the trial award satisfies $\theta + J \sim \mathcal{N}(\theta + \mu_{\text{rep}}, \sigma_{\text{rep}}^2)$. Selling the share γ reduces the plaintiff's exposure to the case outcome, so that after financing his effective risk aversion on the stake he retains is $(1 - \gamma)\rho_P$. Under constant absolute risk aversion, the certainty equivalents take the following closed form.

Definition 1. *For a defendant of type θ , the plaintiff's and the defendant's certainty equivalents of trial are, respectively,*

$$\bar{x}_{P,\theta} = \theta + \mu_0 - \frac{1}{2}(1 - \gamma)\rho_P \sigma_{\text{rep}}^2, \quad \bar{x}_{D,\theta} = \theta + \mu_0 + \frac{1}{2}\rho_D \sigma_{\text{rep}}^2.$$

These are the plaintiff's separating minimum acceptable offer and the defendant's maximum acceptable offer, respectively. Importantly, settlement is efficient and, for certain offers, strictly preferred by both litigants, since $\bar{x}_{D,\theta} - \bar{x}_{P,\theta} = \frac{1}{2}(\rho_D + (1 - \gamma)\rho_P)\sigma_{\text{rep}}^2 > 0$, as both litigants are risk averse and the award is risky.

Separating equilibria. Each defendant type makes a distinct offer, denoted by x_g and x_b respectively. Upon observing the offer, the plaintiff fully infers the defendant's type, i.e., it holds that $\hat{\psi}(x_g) = 1$ and $\hat{\psi}(x_b) = 0$. Separation is achieved through the plaintiff's acceptance rule. While the bad type's offer is accepted with certainty $\pi_b = 1$, the good type's lower offer is accepted with probability less than one, $\pi_g < 1$. This imposes a signaling cost through the risk of trial in case of rejection. If, conversely, both transfers were accepted with certainty, both types would pool on the less costly offer and separation would fail.

The separating equilibrium offers are pinned down by the plaintiff's indifference between settlement and trial conditional on the inferred type. The bad type chooses offer $x_b = \bar{x}_{P,b}$, and the good type chooses $x_g = \bar{x}_{P,g}$, which are the smallest transfers the plaintiff is willing to accept with positive probability. The acceptance probability π_g is bounded by the incentive constraints of both types. For the bad type, trial must be likely enough to deter mimicking the good type's cheaper offer x_g , which requires $u_D(-\bar{x}_{P,b}) \geq \pi_g u_D(-\bar{x}_{P,g}) + (1 - \pi_g) u_D(-\bar{x}_{D,b})$. Rearranging this constraint yields an

upper bound on the acceptance probability,

$$\pi_g \leq \frac{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,b}}}{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,g}}} \equiv \bar{\pi}_g.$$

For the good type, trial cannot be too likely, as she would otherwise prefer the bad type's offer accepted with certainty. Hence, her incentive constraint provides the lower bound

$$\underline{\pi}_g = \frac{e^{\rho_D \bar{x}_{D,g}} - e^{\rho_D \bar{x}_{P,b}}}{e^{\rho_D \bar{x}_{D,g}} - e^{\rho_D \bar{x}_{P,g}}}.$$

Any equilibrium acceptance probability therefore must lie within $\pi_g \in [\max\{0, \underline{\pi}_g\}, \bar{\pi}_g]$. Off-path beliefs are chosen to maximally deter any deviations. The plaintiff attributes any deviations to the bad type, specifically $\hat{\psi} = 0$, everywhere.

The D1 criterion uniquely selects the separating equilibrium with acceptance probability $\bar{\pi}_g$. Intuitively, the criterion requires the plaintiff to attribute any off-path offer to the defendant type most willing to deviate to it in the respective equilibrium. Formally, the criterion compares the sets of plaintiff responses under which each type is willing to deviate. Because the payoff from a deviation is increasing in its acceptance probability, this reduces to comparing the lowest acceptance probability that makes the deviation profitable for each type. Equilibria with acceptance probability $\pi_g < \bar{\pi}_g$ are eliminated as follows. Consider an off-path offer slightly above $\bar{x}_{P,g}$. By continuity, the bad type's indifference threshold for the acceptance probability lies above $\bar{\pi}_g$, whereas the good type's lies below. D1 therefore requires the off-path belief $\hat{\psi} = 1$, which makes the deviation profitable. The separating equilibrium with acceptance probability $\bar{\pi}_g$, by contrast, survives. At $\bar{\pi}_g$, the bad type's incentive constraint binds, so in the neighborhood of $\bar{x}_{P,g}$ the types' thresholds on the acceptance probability converge. For offers just above, the flatter bad type's threshold lies below the good type's, making the bad type more willing to deviate. D1 therefore sets $\hat{\psi} = 0$ on $(\bar{x}_{P,g}, \bar{x}_{P,b})$. Outside this interval, the plaintiff's response does not depend on his belief, so any further restrictions by D1 are irrelevant.

Pooling and semi-separating equilibria. In a pooling equilibrium, both defendant types make the same offer x_{pool} . The plaintiff's posterior upon observing this offer is equal to the prior belief. Acceptance with positive probability requires the transfer to reach the plaintiff's pooled reservation $\bar{x}_{P,\psi}$, while the good type is willing to settle only up to $\bar{x}_{D,g}$, so pooling equilibria can exist whenever $\bar{x}_{P,\psi} \leq \bar{x}_{D,g}$ and are supported by off-path beliefs attributing any deviation to the bad type. Under the D1 criterion, all pooling equilibria are eliminated. To provide some intuition, we focus here on the case of certain acceptance, where both types obtain the same equilibrium payoff. Any downward deviation above $\bar{x}_{P,g}$ is more profitable for the good type, due to the smaller award she faces at trial. D1 therefore requires the off-path belief $\hat{\psi} = 1$, which makes the deviation profitable.

In a semi-separating equilibrium, both types make a common offer with positive probability. There cannot be more than one such offer, since otherwise both types would have to be indifferent across several offers simultaneously, and the indifference conditions cannot hold jointly. Any common offer reproduces the payoff structure of pooling, so the argument that eliminates pooling applies. No semi-separating equilibrium survives D1.

Proposition 1. *Let $\gamma \in [0, 1)$. The unique equilibrium outcome of the settlement bargaining game surviving D1 is separating.*

- *The bad type offers $x_b = \bar{x}_{P,b}$. The plaintiff accepts with probability 1.*
- *The good type offers $x_g = \bar{x}_{P,g}$. The plaintiff accepts with probability*

$$\pi_g = \frac{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,b}}}{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,g}}}.$$

The outcome is supported by the off-path beliefs $\hat{\psi}(x) = 0$ for all $x \notin \{x_g, x_b\}$.

[The proof can be found in Appendix A.](#)

The selected equilibrium also satisfies Pareto optimality within the set of separating equilibria, a common criterion in the bargaining literature. Proposition 1 characterizes the bargaining outcomes for a fixed share sold γ . Before turning to the financing stage, we need to understand how the financing affects these bargaining outcomes. The following lemma records these comparative statics.

Lemma 1. *Both equilibrium offers are strictly increasing in the share sold, $\partial_\gamma \bar{x}_{P,g} = \partial_\gamma \bar{x}_{P,b} = \frac{1}{2} \rho_P \sigma_{\text{rep}}^2 > 0$, whereas the plaintiff's acceptance probability is strictly decreasing and strictly concave, $\partial_\gamma \pi_g < 0$ and $\partial_\gamma^2 \pi_g < 0$.*

[The proof can be found in Appendix A.](#)

The defendant's equilibrium offers increase in the share sold γ . Selling a larger share lowers the plaintiff's effective risk aversion $(1 - \gamma)\rho_P$, and thereby increases the plaintiff's certainty-equivalent value of the risky trial outcome and, with it, the equilibrium offers. Intuitively, a less exposed plaintiff has a higher reservation transfer, which raises the defendant's equilibrium offer. The acceptance probability π_g decreases in the share sold. Recall that it is set by the bad type's binding incentive constraint. The acceptance probability is low enough to deter mimicking $\bar{x}_{P,g}$. A higher $\bar{x}_{P,b}$ requires a lower π_g , while a higher $\bar{x}_{P,g}$ requires a higher one. Both offers rise by the same amount as the plaintiff sells more, but the good type's offer is only paid with probability less than one. This makes mimicking more attractive. Hence, π_g must fall unconditionally.

This outcome is in line with the legal literature described in the introduction. The property $\partial_\gamma \pi_g < 0$ identifies a legal friction induced by financing. For every positive share sold, $\gamma > 0$, the probability of trial is higher than under full retention. The sign holds for

every positive share sold. Since trial is a costly mode of resolution, financing raises the cost of resolving the case.

Robustness of the bargaining protocol. The settlement stage assigns the entire proposal power to the defendant, who makes a take-it-or-leave-it offer. This protocol is chosen for tractability. However, it is not essential for the results. The channel through which financing operates is the plaintiff's disagreement value. Selling a share of the claim lowers his effective risk aversion and raises his certainty equivalent of trial. Any protocol in which the settlement terms improve for a litigant whose disagreement value rises transmits this shift in the same direction. In particular, the comparative statics of the offers in Lemma 1 are preserved under Nash bargaining, where the transfer divides the settlement surplus over the trial certainty equivalents according to fixed weights. Nash bargaining, however, requires a symmetric information version of our model and admits no rejection in equilibrium, so it is silent on the frequency of trial. The neutral bargaining solution of Myerson [1984], which extends the cooperative approach to bargaining under incomplete information, provides another possible protocol, but its trial comparative statics require a separate derivation. Furthermore, in Subsection 6.3, we consider persuasiveness from Zeng [2025] as an alternative selection criterion. The specified pooling equilibrium, in which the litigants settle with certainty, is more persuasive than the D1 separating equilibrium whenever the prior ψ on the good type exceeds a threshold. Financing raises this threshold, making that pooling outcome less prevalent.

3.3 Financing

Optimal financing offer. The representative investor evaluates the litigation asset under the same prior as the plaintiff after observing his financing choice γ . Let $Y(\gamma)$ denote the case proceeds per unit of the claim under the D1-selected separating bargaining outcome of Subsection 3.2,

$$Y(\gamma) = \begin{cases} \bar{x}_{P,b}(\gamma), & \text{with probability } 1 - \psi \quad (\text{settlement}), \\ \bar{x}_{P,g}(\gamma), & \text{with probability } \psi\pi_g(\gamma) \quad (\text{settlement}), \\ \theta_g + J, & \text{with probability } \psi(1 - \pi_g(\gamma)) \quad (\text{trial}), \end{cases}$$

where $\bar{x}_{P,\theta}(\gamma)$ are the equilibrium settlement transfers from Proposition 1. The plaintiff makes a take-it-or-leave-it offer $(\gamma_{\text{rep}}, p_{\text{rep}})$ to the investor. In equilibrium, the price is equal to the investor's certainty equivalent, leaving it indifferent between accepting and the outside option, which we normalize to zero,

$$p_{\text{rep}}(\gamma) = -\frac{1}{\rho_I \gamma} \log \mathbb{E} \left[e^{-\rho_I \gamma Y(\gamma)} \right].$$

Holding the distribution of proceeds fixed, greater investor exposure lowers the per-unit price. In equilibrium, higher settlement offers and the change in the trial probability also affect the price, so its total response to γ is not signed here. In order to evaluate the share γ_{rep} , we define the following benchmark.

Definition 2. *In the baseline model, holding the bargaining continuation distribution fixed, the risk-minimizing share is*

$$\gamma_{\text{rep}}^{\text{risk}} = \frac{\rho_P}{\rho_P + \rho_I}.$$

The risk-minimizing share is the fixed-continuation benchmark. It equalizes the plaintiff's and the investor's risk-adjusted exposures, $\rho_P(1 - \gamma_{\text{rep}}^{\text{risk}}) = \rho_I \gamma_{\text{rep}}^{\text{risk}}$, and implements the classical Borch rule for efficient risk sharing between them [Borch, 1962]. At $\gamma_{\text{rep}}^{\text{risk}}$, the plaintiff's effective risk aversion on his retained share $1 - \gamma_{\text{rep}}^{\text{risk}}$ equals the investor's risk aversion on its purchased share $\gamma_{\text{rep}}^{\text{risk}}$, so their preferences over settlement and trial coincide. The benchmark holds the bargaining continuation distribution fixed; the share sold also changes the probability of trial and hence the risk carried by the claim. Note that the plaintiff extracts the investor's entire certainty equivalent rather than selling at a market-clearing price, so he has no incentive to ration the share sold in order to raise the price, and any departure of γ_{rep} from $\gamma_{\text{rep}}^{\text{risk}}$ reflects the bargaining continuation and not market power in financing.

Before we derive the optimal share sold, we impose an assumption on bargaining in the limit of full sale.⁴

Assumption 1. *At $\gamma = 1$, the plaintiff retains no stake in the case proceeds and is indifferent among bargaining outcomes. We therefore define the bargaining outcome at full sale as the limit as $\gamma \uparrow 1$.*

The plaintiff maximizes his expected utility from the financing and bargaining outcomes, choosing the share sold γ of future cash flows:

$$\max_{\gamma \in [0,1]} \mathbb{E} \left[-e^{-\rho_P(\gamma p_{\text{rep}}(\gamma) + (1-\gamma)Y(\gamma))} \right].$$

The first term in the exponent captures revenue, reflecting how much the plaintiff values the gains from the certainty-equivalent price. The second term in the exponent captures the plaintiff's utility from the retained stake. Taking the certainty equivalent of this

⁴At $\gamma = 1$, every acceptance rule of the plaintiff is sequentially rational, so the bargaining game has multiple equilibria and the assumption acts as an equilibrium selection. The selected outcome is itself an equilibrium at full sale, since the defendant's incentive constraints hold in the limit, and it is the unique outcome that survives when the plaintiff retains an arbitrarily small stake.

objective, the plaintiff equivalently maximizes

$$\max_{\gamma \in [0,1]} U_{P,\text{rep}}(\gamma) \equiv -\frac{1}{\rho_I} \log \mathbb{E}[e^{-\rho_I \gamma Y(\gamma)}] - \frac{1}{\rho_P} \log \mathbb{E}[e^{-\rho_P(1-\gamma)Y(\gamma)}].$$

Taking the derivative of $U_{P,\text{rep}}(\gamma)$, we combine an exponential tilting argument with some adjustments for the change in the underlying probability distribution, when the acceptance probability π_g changes with the share sold γ . Define the two risk exposures $a_I(\gamma) \equiv \rho_I \gamma$ and $a_P(\gamma) \equiv \rho_P(1-\gamma)$, and for any random variable Z and exposure t the tilted expectation $\tilde{\mathbb{E}}_t[Z] \equiv \frac{\mathbb{E}[Ze^{-tY(\gamma)}]}{\mathbb{E}[e^{-tY(\gamma)}]}$, that is, the expectation under the risk-adjusted measure of a party with exposure t . Differentiating gives

$$\begin{aligned} U'_{P,\text{rep}}(\gamma) &= \underbrace{\tilde{\mathbb{E}}_{a_I}[Y(\gamma)] - \tilde{\mathbb{E}}_{a_P}[Y(\gamma)]}_{\text{risk allocation}} \\ &\quad + \underbrace{\gamma \tilde{\mathbb{E}}_{a_I}[\partial_\gamma Y(\gamma)] + (1-\gamma) \tilde{\mathbb{E}}_{a_P}[\partial_\gamma Y(\gamma)] - \left(\frac{1}{\rho_I} h_{a_I}(\gamma) + \frac{1}{\rho_P} h_{a_P}(\gamma) \right)}_{\text{commitment effect}}, \end{aligned}$$

where the effect of the change in the acceptance probability on party j 's valuation is

$$h_{a_j}(\gamma) \equiv \psi \partial_\gamma \pi_g(\gamma) \frac{e^{-a_j \bar{x}_{P,g}(\gamma)} - \mathbb{E}[e^{-a_j(\theta_g + J)}]}{\mathbb{E}[e^{-a_j Y(\gamma)}]}, \quad j \in \{I, P\}.$$

The risk-allocation term is governed by the Borch rule. It is positive below the risk-minimizing share and negative above it. At the risk-minimizing share, the fixed-continuation allocation maximizes joint risk-sharing surplus, and any departure from it is a loss of surplus. Specifically, when the plaintiff sells more than the risk-minimizing share, the discount at which the investor accepts an additional share exceeds the plaintiff's valuation of the risk transferred.

The commitment effect operates through bargaining. It is strictly positive below the risk-minimizing share and of ambiguous sign above it. By Lemma 1, a higher γ lowers the plaintiff's effective risk aversion, so he bargains more aggressively, which raises the settlement offers $\bar{x}_{P,\theta}(\gamma)$ and lowers the acceptance probability π_g . The first two terms capture the higher settlement offers from Lemma 1. They are strictly positive everywhere. The h terms capture the lower acceptance probability. Here $h_{a_P} = 0$ always holds, whereas h_{a_I} is negative below the risk-minimizing share and positive above it. The signs follow from the numerator of h_{a_j} , which compares settlement offer and risky trial, conditional on the good defendant and evaluated at the exposure a_j .

Proposition 2. *In the baseline model, the plaintiff always finances, and the plaintiff's optimal share γ_{rep} is unique and satisfies $\gamma_{\text{rep}}^{\text{risk}} < \gamma_{\text{rep}}$.*

The proof can be found in Appendix A.

The plaintiff oversells because the two channels operate at different orders. The risk-allocation penalty is second order, because the benchmark maximizes the risk-sharing surplus, so the surplus is flat there and a marginal sale beyond $\gamma_{\text{rep}}^{\text{risk}}$ costs the plaintiff only at second order. The bargaining gain, by contrast, is first order, since reducing the plaintiff's exposure raises his reservation transfers, and hence the defendant's equilibrium offers, at a first-order rate. The optimum may therefore occur at full sale. The plaintiff always finances because the baseline model has no fee, so risk sharing alone already makes a positive share optimal.

The main non-financial consequence of overselling is that it further raises the trial probability. The plaintiff sells beyond the risk-minimizing share in order to strengthen his bargaining position, which lowers the good type's acceptance probability π_g . Relative to the risk-minimizing benchmark, trial is therefore more likely. Overselling thus both forgoes risk-sharing surplus and raises the trial probability.

The mechanism is not tied to the baseline financing protocol. Overselling hardens the plaintiff's posture and so raises the value of the underlying claim. The force operates on the size of the asset, not on the division of surplus in the financing stage. The same distortion arises in the general model, where atomistic investors take the market-clearing price as given and the plaintiff receives the underwriter's break-even price. A similar distortion may arise if the investor holds the market power and sets both the price and the allocation, but establishing it requires solving that financing game. The result, however, does rest on the non-contractibility of the plaintiff's acceptance strategy in bargaining. This assumption is not made for analytical convenience but reflects the institutional fact described in Section 1. The investor buys cash flows, not decision rights. From a purely financial perspective, contractibility is naturally desirable. It would separate ownership from control, lead to commitment for the bargaining stage, and resolve the moral hazard. In our model, economic ownership is the only available commitment technology, which is second-best from the perspective of an investor with market power.

Full sale. The distortion is most pronounced at its limit. Selling the entire claim would leave the plaintiff with no financial exposure but undiminished bargaining authority, so that the separation of risk-bearing from control would be complete.

Proposition 3. *Take any cap $\bar{\gamma} \in (0, 1)$ on the share sold. There is a unique threshold $\bar{\rho}_I$ such that if $\rho_I \leq \bar{\rho}_I$, the plaintiff sells at the cap, $\gamma_{\text{rep}} = \bar{\gamma}$.*

The proof can be found in [Appendix A](#).

The same forces are at play for the case of full sale, as in Proposition 2. The risk allocation term is strictly negative at full sale and vanishes as $\rho_I \downarrow 0$. The plaintiff weighs the gain from selling the final unit of his claim against the price discount this last sale requires. The discount depends on how the investor prices the risk it absorbs. When the

investor is close to risk-neutral, the discount is very small. The commitment effect is strictly positive. The bargaining gain from higher offers persists. The negative contribution from the change in the acceptance probability also vanishes in this limit. By continuity, the marginal value remains positive near full sale for any sufficiently risk-tolerant investor. The investor’s risk aversion can equivalently be read as a lack of liquidity. A risk-tolerant investor absorbs quantity with little effect on the price. Figure 1 illustrates both the overselling result and the transition to full sale as investor risk aversion falls.

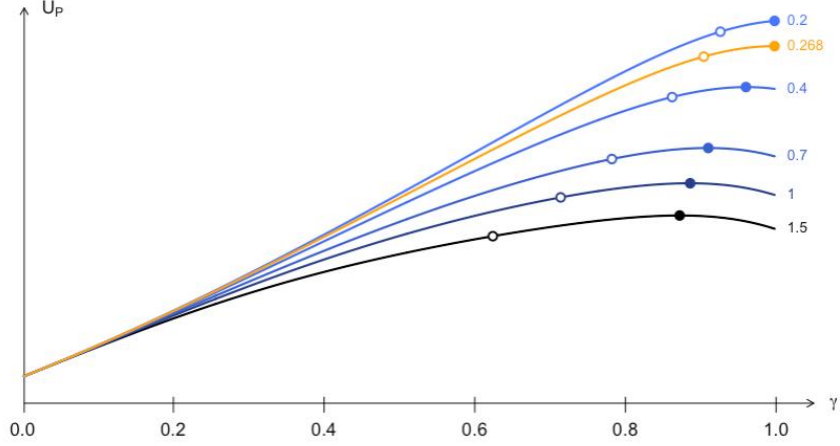


Figure 1: The plaintiff’s certainty equivalent U_P as a function of the share sold γ , for different values of investor risk aversion ρ_I . Open circles mark the risk-minimizing shares, and filled circles mark the plaintiff’s optimal shares.

4 A General Model of Public Markets for Litigation Finance

We now extend the baseline model of Section 3 to a general model with financial markets in order to examine the effect of informative prices. We add a risk-neutral, uninformed underwriter that buys a share of the claim from the plaintiff at a fixed price and places it on the market for a fee, and a continuum of informed investors, who trade on private signals in a noisy rational expectations equilibrium [Hellwig, 1980, Admati, 1985]. Our focus is on a public market, in which the price is observable to the litigants and thus informs their settlement bargaining. As a reference point, we use a private market, in which the price is not observable. In the following, we first describe the general model, then characterize settlement bargaining with a continuum of issues, and finally analyze financing in the public market and compare it to the private market.

In the general model, the legal case consists of a unit mass of infinitesimal issues, each a case of the baseline model. We study issue-wise perfect Bayesian equilibria, in which the litigants bargain over each issue separately, taking the outcome on all other issues

as given, restricting joint negotiation over the entire case. To motivate this equilibrium restriction, we refer to a dynamic version, in which new issues arrive over time and their resolution is not contractible ex ante, which rules out a package deal over all issues. The plaintiff knows the proportions of liability types across issues, but not the type on the issue being negotiated. All unresolved issues remain exposed to the common court factor, and settling an issue removes that exposure. The continuum also serves a technical purpose. Issue-specific uncertainty vanishes within the case, so the proceeds are normal while trials remain prevalent, as the noisy rational expectations equilibrium requires for a closed-form solution.

4.1 Model

Settlement bargaining. A plaintiff P (he) holds a claim against a defendant D (she), which a court may adjudicate at trial. Departing from the baseline model, the case now consists of a unit mass of infinitesimal issues $k \in [0, 1]$, which may be thought of as the counts of a complaint or the elements of damages in a single dispute. The liability type becomes issue-specific. On each issue k , Nature assigns the defendant a liability type $\theta_k \in \{\theta_g, \theta_b\} \subset (0, 1)$ with $\theta_g < \theta_b$. The prior probability on the defendant's liability becomes a proportion, with good-type issues having mass $\psi \in (0, 1)$ and bad-type issues comprising the remainder. The defendant privately observes her type, now on every issue, whereas the plaintiff knows only these proportions. We write $\bar{\theta} \equiv \psi\theta_g + (1 - \psi)\theta_b$ for average liability. The court factor, by contrast, is not issue-specific. If issue k is tried, the court awards $\theta_k + J$, where J is drawn once for the whole case and is common to all issues. As in the baseline model, nobody observes J before trial and all have the common prior $J \sim \mathcal{N}(\mu_0, \sigma_0^2)$, and J is independent of the liability types.

Issue by issue, the defendant proposes a transfer $x_k \in \mathbb{R}$ to the plaintiff. As in the baseline model, we represent the plaintiff's response by an acceptance rule $\pi : \mathbb{R} \rightarrow [0, 1]$, where $\pi(x)$ is the probability that he accepts offer x . We write $\pi_k \equiv \pi(x_k)$ for the acceptance probability on issue k . The plaintiff randomizes independently across issues. By the exact law of large numbers, each issue-level acceptance probability equals the realized acceptance fraction within its type.⁵ The total proceeds Y of the unit-size case and the mass T of issues tried are

$$Y = \int_0^1 [\pi_k x_k + (1 - \pi_k)\theta_k] dk + TJ, \quad \text{where} \quad T \equiv \int_0^1 (1 - \pi_k) dk.$$

Both litigants exhibit constant absolute risk aversion over their aggregate wealth, with $u_j(w) = -e^{-\rho_j w}$ for $j \in \{P, D\}$ and $\rho_j > 0$. Trial imposes no direct costs. The only aggregate payoff risk in the general model is the common court factor J .

⁵We use a continuum probability space supporting an exact law of large numbers, so issue-level randomization introduces no aggregate uncertainty; see Appendix A.

Public market financing. The plaintiff decides whether to finance his case. If he does not choose to finance, the game proceeds to the bargaining stage. If he chooses to finance, he uses an underwriter to access the market. Conditional on financing, the plaintiff makes a take-it-or-leave-it offer to an underwriter UW, consisting of the share sold $\gamma \in (0, 1]$ of the proceeds Y and a deterministic per-unit price p_{UW} ; the retained share is $1 - \gamma$. The underwriter is risk neutral and uninformed and holds the same prior as the plaintiff. It charges an exogenous fee $\phi \in [0, 1)$ on the transaction revenue. It accepts the plaintiff's offer when expected resale revenue covers the underwriting payment and its fee. It then places the share γ in the competitive market and bears the resulting price risk.

The market consists of a unit mass of investors, each with constant absolute risk aversion $u_I(w) = -e^{-\rho_I w}$, $\rho_I > 0$, and noise traders. Each investor i observes a private signal $s_i = J + e_i$ about the court factor, with $e_i \sim \mathcal{N}(0, 1/\tau_e)$. Taking the market price p as given, investor i chooses a demand $q_i(s_i, p) \in \mathbb{R}$ for units of the security, each paying the case proceeds Y . Her trading payoff is $q_i(s_i, p)(Y - p)$. The noise traders submit the price-inelastic aggregate demand $z \sim \mathcal{N}(0, 1/\tau_z)$ in units of exposure to J . The signal errors are independent of J , independent across investors, and independent of z . The signal and noise precisions are positive and finite, $\tau_e, \tau_z \in (0, \infty)$. Positive z denotes net buying by noise traders. The market clears at the publicly observed price p_{pub} . The litigants learn from the price before bargaining. We denote the mean, variance and precision of their posterior by $(\mu_{\text{pub}}, \sigma_{\text{pub}}^2, \tau_{\text{pub}})$.

Private market financing. As a reference point, we also consider a private market version. The private market has the same investors, signals, noise trading, underwriting and linear rational expectations equilibrium as the public market. The only difference is that neither litigant observes its price p_{pri} or the investors' signals. Bargaining therefore proceeds under the prior. We write

$$(\mu_{\text{pri}}, \sigma_{\text{pri}}^2, \tau_{\text{pri}}) \equiv (\mu_0, \sigma_0^2, \tau_0)$$

for its mean, variance and precision. Economically, this market is a standard syndication arrangement in which the price paid by the participating investors remains private. We keep its trading structure as close as possible to that of the public market so that the comparison isolates the effects of price informativeness.

Timeline. The game proceeds as follows:

- (i) *Types.* Nature assigns the liability types θ_k across $k \in [0, 1]$ and draws the court factor J . The defendant observes the type assignment. Neither party observes J .
- (ii) *Financing.* The plaintiff publicly chooses the share sold γ under the prior, or declines to finance.

- (iii) *Pricing.* The plaintiff makes a take-it-or-leave-it offer of the share sold γ and the deterministic underwriting price to the underwriter. The investors observe their signals, and the market clears at p_m .
- (iv) *Updating.* In the public market, both litigants observe p_{pub} and update to the posterior $(\mu_{\text{pub}}, \tau_{\text{pub}})$. In the private market, p_{pri} is not disclosed to them, and they retain the prior.
- (v) *Bargaining.* The defendant bargains over settlement with the plaintiff, issue by issue, with offers x_k and acceptance probabilities π_k . A tried issue pays $\theta_k + J$.

If the plaintiff declines to finance, stages (iii) and (iv) are skipped and bargaining proceeds under the prior.

Equilibrium concept. We combine symmetric issue-wise perfect Bayesian equilibria of settlement bargaining with a linear noisy rational expectations equilibrium of the financial market. In bargaining, given the litigants' information and the trial mass T , strategies and local beliefs $\hat{\psi}(x)$ form a PBE of the marginal game on each issue, and the resulting acceptance fractions, which equal the issue-level probabilities within each type, generate the same T . Conditional on the public information, the defendant's offer on an issue depends only on its type, and the plaintiff's response only on the offer. We apply D1 issue by issue and verify that neither litigant gains from a coordinated deviation on a positive mass of issues. For a share sold γ and a precision τ of the litigants' belief, we write $T(\gamma, \tau)$ for the equilibrium trial mass characterized below. Uniqueness of the bargaining outcome refers to this class. We do not establish an unrestricted PBE of the full continuum game.

In the financial market, the demands $q_i(s_i, p)$ maximize investors' expected utility conditional on their signals and the price, the market clears, and beliefs are consistent with the equilibrium price function, which is affine in J and z . Investors value the proceeds generated by subsequent bargaining. In the public market, the price also informs the litigants' bargaining decisions. The plaintiff chooses whether and how much to finance anticipating these continuations and the underwriter's acceptance condition.

4.2 Settlement Bargaining

Conditional on the public information, T is deterministic and common knowledge. Each litigant takes T as given when bargaining over an issue. A change in the litigant's incentives therefore comes only from the marginal mass moved from settlement to trial. Under a belief $J \sim \mathcal{N}(\mu, \sigma^2)$, if a mass ε of issues of type θ moves from settlement at the transfer x to trial, the plaintiff's certainty equivalent per unit of his retained share changes by

$$\varepsilon[\theta + \mu - x - a_P T \sigma^2] - \frac{1}{2} a_P \sigma^2 \varepsilon^2.$$

The second term is of second order in the mass moved and vanishes at the margin. The plaintiff's and the defendant's marginal certainty equivalents are therefore as follows.

Definition 3. *For a given trial mass T and an issue of type θ , the plaintiff's and the defendant's marginal certainty equivalents of trial are, respectively,*

$$\bar{x}_{P,\theta} = \theta + \mu - a_P T \sigma^2, \quad \bar{x}_{D,\theta} = \theta + \mu + \rho_D T \sigma^2.$$

The plaintiff's risk premium from trying one more issue is proportional to the exposure he already carries on the tried issues, and so is the defendant's. The reservation values therefore depend on the trial mass T , while T is itself determined by the acceptance fractions they induce. The bargaining outcome is thus a fixed point in the trial mass. The following lemma records this outcome for an arbitrary normal belief about the court factor, so that it applies under the prior, in the private market, and under the posterior induced by the public price.

Lemma 2. *Take some posterior belief $J \sim \mathcal{N}(\mu, \sigma^2)$ and restrict attention to symmetric issue-wise bargaining equilibria of the general model.*

- (i) *The unique equilibrium outcome in this class that survives issue-wise D1 is separating. The bad type offers $\bar{x}_{P,b}$ and is accepted with certainty, while the good type offers $\bar{x}_{P,g}$ and is accepted with fraction*

$$\pi_g = \frac{\bar{x}_{D,b} - \bar{x}_{P,b}}{\bar{x}_{D,b} - \bar{x}_{P,g}} = \frac{(\rho_D + (1 - \gamma)\rho_P)\sigma^2 T}{(\theta_b - \theta_g) + (\rho_D + (1 - \gamma)\rho_P)\sigma^2 T},$$

where the mass of issues tried is $T = T(\gamma, 1/\sigma^2) = \psi(1 - \pi_g)$, the unique positive root of

$$(\rho_D + (1 - \gamma)\rho_P)\sigma^2 T^2 + (\theta_b - \theta_g)T - \psi(\theta_b - \theta_g) = 0.$$

- (ii) *The distribution of the aggregate Y is normal, $Y \sim \mathcal{N}(\bar{\theta} + \mu - (1 - \gamma)\rho_P \sigma^2 T(1 - T), \sigma^2 T^2)$.*
- (iii) *The trial mass T strictly increases in the share sold γ and the belief precision $\tau = 1/\sigma^2$, while $(1 - \gamma)\rho_P T$ strictly decreases in γ .*

The proof can be found in [Appendix A](#).

In part (i), the structure of Proposition 1 survives issue by issue. The bad type offers the plaintiff's reservation value and is accepted, while the good type offers the plaintiff's lower reservation value. The fraction π_g of good-type issue mass accepted is the fraction at which the bad type is just deterred from mimicking.

In part (ii), the distribution of the cash flows is recorded. They are normal. The only risky outcome is trial, which enters the proceeds through the trial mass with variance $T^2\sigma^2$. This follows from the law of large numbers.

In part (iii), we present comparative statics to prepare our subsequent analysis. The trial mass is affected by the share sold and the belief precision only through the litigants' joint risk cost of trial, $(\rho_D + (1 - \gamma)\rho_P)/\tau$. This is the gap between their reservation values per unit of the trial mass. A larger share sold lowers this cost by reducing the plaintiff's exposure, while a more precise belief lowers it by reducing the trial risk. The bad type then loses less when her offer is rejected, so more rejections are required to deter her from mimicking the good type and the trial mass rises. This increase only partly offsets the plaintiff's lower exposure, so his risk-adjusted exposure to trial, $(1 - \gamma)\rho_P T$, falls in the share sold.

4.3 Financing

Market prices. The investors trade the security after observing their private signals s_i about the common court factor J . Their demands depend on their signals and on the price, and the price depends on their demands and on the noise traders' demand. The price reveals the statistic ξ . An investor who observes the price also observes that statistic. In the public market, the litigants observe it as well, which leads to different posterior distributions for the common court factor J across the public and private markets, and subsequently to different trial masses.

Lemma 3. *Fix γ . For $m \in \{\text{pri}, \text{pub}\}$, let $(\mu_m, \sigma_m^2, \tau_m)$ be the litigants' posterior beliefs on J in market m and let $T(\gamma, \tau_m)$ denote the trial mass of the continuation bargaining equilibrium. There is a unique linear rational expectations equilibrium. The equilibrium price is*

$$p_m = \bar{\theta} + (1 - T(\gamma, \tau_m))[\mu_m - a_P T(\gamma, \tau_m)\sigma_m^2] + T(\gamma, \tau_m)[\tilde{p}_m],$$

$$\tilde{p}_m = \frac{\tau_0\mu_0 + (\tau_e + \tau_\xi)\xi - \rho_I T(\gamma, \tau_m)\gamma}{\tau_0 + \tau_\xi + \tau_e},$$

where the revealed statistic is

$$\xi = J + \frac{\rho_I}{\tau_e} z \quad \text{with} \quad \tau_\xi \equiv \frac{\tau_e^2 \tau_z}{\rho_I^2} = \frac{1}{\text{Var}(\xi | J)}.$$

In the case of the public market, the posterior belief obtains as

$$(\mu_{\text{pub}}, \sigma_{\text{pub}}^2, \tau_{\text{pub}}) \equiv \left(\frac{\tau_{\text{pri}}\mu_{\text{pri}} + \tau_\xi \xi}{\tau_0 + \tau_\xi}, \frac{1}{\tau_0 + \tau_\xi}, \tau_0 + \tau_\xi \right).$$

The proof can be found in [Appendix A](#).

The price has three parts. First, the average liability is always paid, since it features in settlement and in trial, and is aggregated by the continuum of issues. Second, for the mass of issues being settled, the plaintiff's trial reservation value for his respective belief is obtained. Third, for the trial mass of issues, the common court factor is priced given the aggregated information, the investors' risk aversion and exposure, which is determined by the share of the case sold and the trial mass.

The price is informative. The investors trade on their signals, making their aggregate demand fully informative about the court factor itself. Due to the noise traders' demand, J is only partially revealed. The informativeness τ_ξ of the price rises with the precision of the investors' signals and with the precision of the noise. It also falls with the investors' risk aversion, since more risk-averse investors trade less aggressively on what they know and the price reflects their information less.

The litigants' posterior distribution changes in the public market version, while remaining unaffected and equal to the prior in the private market version. It is obtained by the standard Bayesian updating rules for normal distributions. The posterior distribution is normal. Its mean μ_{pub} weighs the prior and the statistic by their precisions and its precision τ_{pub} is the sum of the price informativeness and the prior precision.

Underwriting price. The plaintiff does not sell into the market himself. He sells to the underwriter before trading opens at a deterministic price. The underwriter accepts an offer when expected resale revenue covers the underwriting payment and its fee. Taking expectations of the price in Lemma 3 under the prior therefore gives the price the plaintiff can obtain.

Corollary 1. *Fix γ and $m \in \{\text{pri}, \text{pub}\}$. The underwriter accepts the offer (γ, p_{UW}) if and only if $p_{\text{UW}} \leq (1 - \phi)\mathbb{E}[p_m]$, where*

$$\mathbb{E}[p_m] = \bar{\theta} + \mu_0 - a_P T(\gamma, \tau_m) [1 - T(\gamma, \tau_m)] \sigma_m^2 - \frac{\rho_I}{\tau_0 + \tau_\xi + \tau_e} T(\gamma, \tau_m)^2 \gamma.$$

The plaintiff therefore offers $p_{\text{UW}} = (1 - \phi)\mathbb{E}[p_m]$.

The corollary follows immediately from the offer procedure of the model. The underwriter takes on the pricing risk.

Risk-minimizing shares. The risk-minimizing share remains a reference point for our analysis. It holds the bargaining continuation fixed. In the baseline model, the plaintiff was able to determine the price and extracted the representative investor's certainty equivalent. In the general model, the plaintiff is unable to determine the price unilaterally, in that the price charges the marginal risk premium on every unit sold. Moreover, the investors are now individually informed and value a unit of the claim differently from the

plaintiff. Hence, the definition of the risk-minimizing share needs to be adapted. Every unit the plaintiff retains exposes him to the trial risk, which costs him $\frac{1}{2}\rho_P(1-\gamma)^2T^2/\tau_m$. Every unit he sells lowers the price, with a total discount $\rho_I\gamma^2T^2/(\tau_0 + \tau_\xi + \tau_e)$. The new risk-minimizing share γ_m^{risk} is the share that minimizes the sum of the two costs.

Definition 4. *At a fixed trial mass, the risk-minimizing share γ_m^{risk} of market $m \in \{\text{pri}, \text{pub}\}$ minimizes the plaintiff's cost of trial risk,*

$$\gamma_m^{\text{risk}} = \frac{\rho_P}{\rho_P + \tilde{\rho}_I^m}, \quad \tilde{\rho}_I^m \equiv \rho_I \frac{2\tau_m}{\tau_0 + \tau_\xi + \tau_e}.$$

Unlike the baseline Borch allocation, this benchmark holds the trial mass and belief fixed, balances the investors' marginal-pricing discount against the plaintiff's retained trial risk, and abstracts from the fee and public news risk.

Public-market optimal share. The plaintiff's wealth in the public market is his revenue from the underwriter plus his retained stake, $\gamma p_{\text{UW}} + (1-\gamma)Y$. The revenue is deterministic. The retained stake carries two kinds of risk under the prior, at which the plaintiff decides. The first is the trial risk $T^2\sigma_{\text{pub}}^2$ that remains once the price is known. The second is news risk, the ex ante variance $\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2$ of the posterior mean μ_{pub} , which the price will resolve but which the plaintiff has not yet seen when he sells. Since the proceeds Y are normal now, we can write the plaintiff's certainty equivalent as

$$U_{P,\text{pub}}(\gamma) = \mathbb{E}Y - \frac{1}{2}[\tilde{\rho}_I^{\text{pub}}\gamma^2 + \rho_P(1-\gamma)^2]T^2\sigma_{\text{pub}}^2 - \frac{1}{2}\rho_P(1-\gamma)^2(\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2) - \phi\gamma\mathbb{E}[p_{\text{pub}}],$$

with $T = T(\gamma, \tau_{\text{pub}})$ the trial mass of the continuation game for the share sold γ and the public belief. Conditional on public financing, let

$$\gamma_{\text{pub}} \in \arg \max_{\gamma \in (0,1]} U_{P,\text{pub}}(\gamma).$$

If the argmax contains more than one share, γ_{pub} denotes a specified maximizer. Differentiating yields

$$\begin{aligned} U'_{P,\text{pub}}(\gamma) &= \underbrace{\sigma_{\text{pub}}^2 T((1-\gamma)\rho_P - \tilde{\rho}_I^{\text{pub}}\gamma)(T + \gamma \partial_\gamma T)}_{\text{risk allocation}} + \underbrace{\sigma_{\text{pub}}^2 (1-T)(\rho_P T - (1-\gamma)\rho_P \partial_\gamma T)}_{\text{commitment effect}} \\ &\quad + \underbrace{\rho_P(1-\gamma)(\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2)}_{\text{news-hedging benefit}} - \underbrace{\phi(\mathbb{E}[p_{\text{pub}}] + \gamma \partial_\gamma \mathbb{E}[p_{\text{pub}}])}_{\text{fee}}. \end{aligned}$$

For simplicity, we have slightly adapted the grouping of the terms relative to the baseline model, and added the new terms. The risk-allocation part still compares the plaintiff's

exposure $(1 - \gamma)\rho_P$ with the investors' $\tilde{\rho}_I^{\text{pub}}\gamma$, but also contains the change in risk from the trial mass. The commitment effect still subsumes the effect on the settlement offers, and also the remaining effect from the trial mass $\partial_\gamma T$, similar to the function $h(\cdot)$. The news-hedging benefit is the gain from reducing the plaintiff's exposure to the news risk generated by the revealed statistic ξ . The fee is just a simple cost on every unit sold.

Proposition 4. *If the plaintiff sells a share in the public market and $\phi \mathbb{E}[p_{\text{pub}}] \leq \rho_P(1 - \gamma_{\text{pub}}^{\text{risk}})(\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2)$, he oversells relative to the risk-minimizing share, $\gamma_{\text{pub}}^{\text{risk}} < \gamma_{\text{pub}}$.*

The proof can be found in [Appendix A](#).

The overselling motive of the baseline model is at work in the public market as well. At the risk-minimizing share, a larger share no longer improves the allocation of risk, but it still toughens the plaintiff's bargaining position, so the commitment part is strictly positive there, as in Proposition 2. Relative to the baseline model, the public market adds a cost and a benefit of selling that are both of first order. The fee taxes every unit sold, and at the benchmark it is the only force that pulls toward retaining. The news-hedging benefit favors selling, and it is largest where the plaintiff retains most. The condition of the proposition asks the news-hedging benefit to pay for the fee at the benchmark. The commitment gain then carries the plaintiff beyond it, and the proof shows that below the benchmark all forces point the same way, so that every optimal share exceeds it. The condition is satisfied in particular at a zero fee, and the more informative the price, the greater the news risk $\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2$ and the larger the fee the news-hedging benefit can offset. At a positive fee, the objective need not be single-peaked, which is why the proposition speaks of every optimal share and claims no uniqueness.

Private-market optimal share. In the private market, the plaintiff faces no news risk because the litigants do not observe the price. His certainty equivalent is

$$U_{P,\text{pri}}(\gamma) = \mathbb{E}Y - \frac{1}{2}[\tilde{\rho}_I^{\text{pri}}\gamma^2 + \rho_P(1 - \gamma)^2]T^2\sigma_{\text{pri}}^2 - \phi\gamma\mathbb{E}[p_{\text{pri}}],$$

with $T = T(\gamma, \tau_{\text{pri}})$. Conditional on private financing, let

$$\gamma_{\text{pri}} \in \arg \max_{\gamma \in (0,1]} U_{P,\text{pri}}(\gamma).$$

If the argmax contains more than one share, γ_{pri} denotes a specified maximizer. The no-financing option is $U_{P,\text{pri}}(0)$, which also equals $U_{P,\text{pub}}(0)$ because no price is observed when no security is issued. In market m , the plaintiff finances only if the selected conditional optimum strictly exceeds this value.

Price informativeness and the share sold. Evidence from litigation practice presented in the introduction suggests that funding conveys investors' assessment of expected

case proceeds. In the model, the relevant information concerns the common court factor J , not the defendant's private liability. This information reaches both litigants through the public price, and its informativeness τ_ξ is a primitive. This raises a natural question. Does a more informative public price reduce the plaintiff's incentive to derisk through selling shares, since the price itself resolves part of the uncertainty he would otherwise sell?

Price informativeness has two effects on the proceeds. On the one hand, a more informative price necessarily lowers the residual trial risk σ_{pub}^2 . On the other, more issues go to trial by Lemma 2, since trial risk is the cost of a settlement breakdown. The aggregated trial risk of the case, $T^2\sigma_{\text{pub}}^2$, falls, since the former dominates the latter. To examine the effect of price informativeness on the share sold, we must consider both the plaintiff and the investors. The plaintiff's commitment effect from selling is reduced. With a less risky trial, each unit sold removes less risk and buys less commitment. The plaintiff's news-hedging benefit from selling increases. A more informative price leads to greater reevaluation of the retained stake $\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2$. Every unit sold hedges this news risk. The plaintiff's price obtained from selling increases, since the investors appreciate the lower trial risk and demand a lower discount. We show in Proposition 5 that, when the plaintiff retains a sizeable stake, the news-hedging benefit dominates and a more informative price increases the share sold.

Holding price informativeness fixed, we can also change the composition of the noise present in the market. The same price informativeness can be generated by different combinations of signal precision and noise trading, and we parametrize them by the noise composition $\chi \equiv \tau_e/\tau_z$. At a fixed informativeness, a higher χ means more precise private signals and with them a lower risk discount required by investors. We show in Proposition 5 that this increases the share sold by the plaintiff. For $m \in \{\text{pri}, \text{pub}\}$, write γ_m for the selected conditional optimum in market m and define $T_m \equiv T(\gamma_m, \tau_m)$.

Proposition 5. *Let $\rho_I < \rho_P$, and γ_{pub} be an interior optimum with $U''_{P,\text{pub}}(\gamma_{\text{pub}}) < 0$.*

- (i) *At a fixed χ , the share is locally strictly increasing in the informativeness of the price, $\partial\gamma_{\text{pub}}/\partial\tau_\xi > 0$, if $\gamma_{\text{pub}} \leq (2 - T_{\text{pub}})/(2 + T_{\text{pub}})$.*
- (ii) *At a fixed τ_ξ , the share is locally strictly increasing in the noise composition, $\partial\gamma_{\text{pub}}/\partial\chi > 0$.*

The proof can be found in Appendix A.

To understand the effect of price informativeness on the share sold from part (i), observe that the only negative channel acts through the commitment effect. The sufficient condition caps the channel from the commitment. If few shares are sold relative to the amount of settlement in equilibrium, this implies that the commitment effect is small and a further reduction has little effect on the incentives to sell. It is a local argument, due to the

lack of uniqueness for some fees. To understand the effect of the noise composition on the share sold from part (ii), observe two facts. First, the public belief and the bargaining are unaffected by the noise composition and only respond to price informativeness, which we hold fixed. Second, as mentioned above, a higher χ requires the investors' private signals to be more informative, reducing their residual risk. The investors therefore demand a lower risk premium to take on exposure, which encourages the plaintiff to sell more.

The conclusion that, under the share restriction in Proposition 5, greater informativeness raises the share sold and, through Lemma 2(iii), the trial mass per filed case, rests on one modeling choice. In our setting, the trial imposes no cost on the plaintiff beyond the risk it carries, so a higher reservation transfer raises the defendant's equilibrium offer with no offsetting penalty when an issue fails to settle. Suppose instead that the plaintiff bears a court cost whenever an issue proceeds to trial. A more informative price then raises the rejection rate, and the higher expected court cost works against his incentive to raise his reservation transfer as trial grows less risky. The channel we describe survives only as long as this cost stays below a certain level, beyond which the plaintiff moderates his reservation transfer and the sign of the effect on the trial mass per filed case need no longer hold. The result should accordingly be read as accurate up to a bounded litigation cost rather than as unconditional.

4.4 Market Selection

In the analysis above, we took as exogenous the nature of the market available to the plaintiff. Suppose instead that the plaintiff can choose whether to finance with the public or the private market. To ensure comparability, we continue to assume that the markets retain the common underwriter, informed investors and noise trading of the general model and differ only in the observability of the price.

The two markets use the same investors but generate different bargaining outcomes. Because only the public price informs the litigants, it lowers the residual trial risk and sends more issues to trial by Lemma 2. At a fixed share, it also raises equilibrium offers in expectation: the posterior mean averages to the prior mean, while $T\sigma^2$ falls with precision. The latter follows from the fixed-point identity $(\rho_D + a_P)T^2/\tau = \Delta(\psi - T)$, which implies $T/\tau = \Delta(\psi/T - 1)/(\rho_D + a_P)$, decreasing as T rises with precision. A realized public offer need not exceed its private-market counterpart because the posterior mean can move in either direction. The investors price a given cash flow identically in either market, but the different bargaining continuation changes the underlying asset and hence its expected price. In addition, the plaintiff bears news risk only in the public market.

Proposition 6. *Take some cap $\bar{\gamma} \in (0, 1)$. If $\gamma_{\text{pub}} = \bar{\gamma}$, the plaintiff strictly prefers the private market whenever $\bar{\gamma}$ is sufficiently close to one.*

The proof can be found in Appendix A.

Near full sale the plaintiff retains almost nothing, so neither the trial risk nor the news risk on his retained stake matters in the limit, and his payoff in either market is the underwriter's price for the whole claim. With the same informed investors, the limiting price discount in either market is $\rho_I T^2 / (\tau_{\text{pub}} + \tau_e)$, where T is that market's limiting trial mass. The private price reveals the same statistic to investors as the public price, so their residual precision is the same. The public trial mass is larger, however, because revealing the price to the litigants lowers their risk cost of trial. Keeping the price private therefore lowers the discount and raises the price the underwriter accepts. Continuity extends this strict preference to common shares sufficiently close to one. When the public optimum is near full sale, the private optimum can only improve on the payoff from selling that same share.

Market selection matters for what follows. By Proposition 6, the plaintiff may prefer the private market, which raises the question of why we study the public market at all. The proposition, however, covers only shares close to one. When the plaintiff retains a sizeable stake, the public price does more than raise funds, since it also informs him about his own case. As shown above, this raises expected offers at a fixed share. An informative public price thus leads to less agreement. The market the plaintiff selects therefore shapes not only his own payoff, but also how many issues reach the courts, which we study next.

5 Effects on the Legal System

A common concern about litigation finance is that it may encourage frivolous lawsuits. The term frivolous, however, has no independent economic meaning in our model. A claim that goes to trial and yields positive case proceeds has merit, and financing may make pursuing such a claim privately worthwhile. Capturing the concern would require additional assumptions about how financing interacts with the legal system. For example, the model could admit rent-seeking plaintiffs who extract settlement payments by threatening defendants with high legal costs for claims with little merit. A common argument in favor of litigation financing is access to the legal system. Concerns for justice and inequality are prevalent. Allowing financing can alleviate some of those concerns and lead to more meritorious claims being filed. In addition, filing cases is socially valuable in its own right, since the credible prospect of trial deters unlawful conduct.

Within our model, trial risk discourages a plaintiff from filing a claim and from taking it to court. Financing reduces the plaintiff's exposure to this risk and thereby raises both the mass of cases filed and the trial mass per filed case. Specifically, on the extensive margin, by letting the plaintiff de-risk, financing raises the value of pursuing a claim and draws in cases that would otherwise be dropped. On the intensive margin, financing raises the plaintiff's reservation transfer and the good type's equilibrium offer, sending more good-type issues to trial, and trial consumes the resources of the litigants and the courts.

As previously discussed, this is costly from a welfare perspective. In our model, a full welfare analysis would take into account the mass of cases filed and total trial volume GT , but would also account for the risk and how it is spread. We refrain from performing such an analysis. On the one hand, it is difficult to weigh the social benefits of filing against the costs of trial. On the other hand, further comparing this against the cost of risk and its allocation is even less tractable. We instead focus on the differences across the two markets and the case without any financing. Throughout this section, we work in the general model of Section 4.

5.1 The Effect of Financing

To make the extensive margin tractable, we extend the general model with an initial filing decision. Before any financing, the plaintiff observes a nonnegative filing cost $c \in \mathbb{R}_+$, drawn from a cumulative distribution function G that is strictly increasing on $\mathbb{R}_+$, and decides whether to file the case. We assume that the certainty equivalents compared below are nonnegative. A case that is not filed pays nothing. A filed case can be financed in the market available to the plaintiff or left unfinanced. If the plaintiff declines to finance, no security is issued, no price is observed and beliefs remain at the prior. He finances only if this strictly raises his certainty equivalent. The plaintiff files if his certainty equivalent of the case, financed in the market available to him, covers the filing cost, so the mass of cases filed is the distribution function G evaluated at that certainty equivalent.

Recall from Subsection 4.3 the plaintiff's certainty equivalents $U_{P,\text{pri}}(\gamma)$ and $U_{P,\text{pub}}(\gamma)$ and the selected conditional maximizers γ_{pri} and γ_{pub} . He files if and only if his certainty equivalent covers c , so the mass of cases filed without, with private and with public financing is $G_0 \equiv G(U_{P,\text{pri}}(0))$, $G_{\text{pri}} \equiv G(U_{P,\text{pri}}(\gamma_{\text{pri}}))$ and $G_{\text{pub}} \equiv G(U_{P,\text{pub}}(\gamma_{\text{pub}}))$. Let T_0 denote the trial mass without financing, that is, at $\gamma = 0$ under the prior. The trial masses with private and public financing are T_{pri} and T_{pub} , respectively.

Proposition 7. *Suppose the plaintiff finances the case, privately or publicly. Financing then*

- (i) *increases the number of cases filed, $G_0 < G_{\text{pri}}, G_{\text{pub}}$,*
- (ii) *increases the share of issues that go to trial, $T_0 < T_{\text{pri}}, T_{\text{pub}}$.*

The proof can be found in Appendix A.

Conditional on financing, Part (i) is immediate. The plaintiff finances only if this strictly raises his certainty equivalent, so the filing cost he is willing to bear rises, and with it the mass of cases filed. Part (ii) follows from Lemma 2(iii). Financing lowers the joint risk cost of trial, $(\rho_D + (1 - \gamma)\rho_P)/\tau$, in either market, but through different channels. In the private market, the belief stays at the prior and the plaintiff's commitment alone

lowers the cost, since any positive share sold reduces his exposure. In the public market, the informative price alone lowers it, whatever the share sold, since the posterior precision exceeds the prior one. The realization of the public price does not enter, so the result holds case by case and not only on average.

5.2 Public versus Private Markets

Proposition 8. *Conditional on financing in both markets, the public trial mass per filed case exceeds the private trial mass per filed case, $T_{\text{pri}} < T_{\text{pub}}$,*

(i) *if and only if*

$$\frac{\rho_D + (1 - \gamma_{\text{pub}})\rho_P}{\tau_{\text{pub}}} < \frac{\rho_D + (1 - \gamma_{\text{pri}})\rho_P}{\tau_{\text{pri}}},$$

(ii) *if the price is sufficiently informative, $\tau_\xi > \tau_{\text{pri}} \rho_P / \rho_D$.*

The proof can be found in [Appendix A](#).

The comparison between the two markets is the comparison of the litigants' joint cost of risk. Part (i) follows immediately from the formula of π_g in Lemma 2, evaluated in each market. Both a larger share sold and a more informative price lower the joint risk cost of trial. Part (ii) is less obvious. The condition is derived by a comparison of the public market, where almost all is retained, and a private market, where almost all is sold. That is, the difference in the commitment effect is maximal. In this case, the informativeness must be sufficiently large to compensate for the difference in litigant risk aversion. Together with Proposition 7, a sufficiently informative public market thus has a larger trial mass per filed case than the private market, which in turn has a larger trial mass per filed case than full retention. The proposition does not rank total trial volume $G_m T_m$; that comparison also requires a ranking of G_{pub} and G_{pri} .

6 Extensions

6.1 A Cap on Financing

Regulation may limit the share of case proceeds that a plaintiff can sell. The proposed directive annexed to the European Parliament's 2022 resolution on responsible private funding of litigation sets a threshold of 40 percent for the funder's share. Absent exceptional circumstances, Article 14(4) would invalidate an agreement that leaves the claimant and intended beneficiaries with 60 percent or less of the total award, including damages, costs, fees and other expenses [[European Parliament, 2022](#), Annex, Article 14(4)]. We use our

model to study how such a cap should balance risk sharing against the additional trial exposure that financing creates.

We consider the private market with no fee, $\phi = 0$, and hold its investor mass fixed. A regulator chooses a cap $\bar{\gamma} \in [0, 1]$, anticipating the plaintiff's choice of the share sold on $[0, \bar{\gamma}]$, including the option not to finance. The regulator maximizes the sum of the plaintiff's and the defendant's certainty equivalents, conditional on a filed case. With $T = T(\gamma, \tau_{\text{pri}})$, the regulator's objective is

$$U_{P,\text{pri}}(\gamma) + U_{D,\text{pri}}(\gamma) = -\frac{T(\gamma, \tau_{\text{pri}})^2}{2\tau_{\text{pri}}} \left[\rho_P(1 - \gamma)^2 + \tilde{\rho}_I^{\text{pri}}\gamma^2 + \rho_D \right].$$

Expected case payments cancel between the litigants. The remaining terms are the plaintiff's retained risk, the investors' pricing discount borne by the plaintiff and the defendant's risk. The objective thus concerns the two litigants per filed case; it does not include investor welfare or the social value of additional filings.

Proposition 9. *In the private market with $\phi = 0$, the cap maximizing the sum of the litigants' certainty equivalents per filed case is unique and binding, and satisfies*

$$0 < \bar{\gamma}^* < \gamma_{\text{pri}}^{\text{risk}} < \gamma_{\text{pri}}.$$

It is the unique solution of

$$0 = \tilde{\rho}_I^{\text{pri}}\bar{\gamma}^* - \rho_P(1 - \bar{\gamma}^*) + \left[\rho_P(1 - \bar{\gamma}^*)^2 + \tilde{\rho}_I^{\text{pri}}(\bar{\gamma}^*)^2 + \rho_D \right] \frac{\partial_\gamma T}{T},$$

where the trial mass and its derivative are evaluated at the optimal cap. Holding the bargaining parameters fixed, the cap strictly decreases in $\tilde{\rho}_I^{\text{pri}}$.

The proof can be found in [Appendix A](#).

Some financing improves the allocation of risk enough to compensate for the additional trials, so the regulator does not prohibit it. At the risk-minimizing share of Definition 4, however, the gain from reallocating a fixed trial exposure is exhausted. A further sale still raises the trial mass and thereby the combined cost of trial risk and the pricing discount. The regulator therefore stops below that benchmark, taking into account the defendant's exposure as well as the costs borne by the plaintiff. The plaintiff instead benefits from the higher settlement offers that financing induces and would sell beyond the benchmark, so the cap binds. The proof establishes uniqueness by expressing the regulator's cost as a strictly convex function of the trial mass.

The optimal cap depends on the liquidity of the financing market. When investors absorb exposure at a smaller pricing discount, transferring risk to them becomes less

costly and the regulator permits a larger share to be sold. A uniform percentage cap therefore ignores differences in the market's capacity to bear risk. In our private market, these differences enter through $\tilde{\rho}_I^{\text{pri}}$, while the litigants continue to bargain under the prior. The next subsection shows how a larger investor mass lowers the discount through both risk bearing and information aggregation. The cap result holds that mass fixed; when the underwriter can attract additional investors, regulation must also account for its response to the cap.

6.2 Syndication in the Private Market

To understand the role of the underwriter in these markets better, we generalize the private market version of the general model by endogenizing the investor mass. The private market of Section 4 can be viewed as having an endowed unit mass of investors and a prohibitive cost of attracting any additional investors. In this subsection, we relax both restrictions. The underwriter intermediates between the plaintiff and a continuum of prospective informed investors. Let $\omega \in [0, \infty)$ denote the mass of investors the underwriter attracts into the deal. Attracting investors requires soliciting participation, onboarding investors, deploying information technology infrastructure, and facilitating the sharing of full confidential case details under non-disclosure agreements. We model these frictions through a cost function $\kappa : \mathbb{R}_+ \rightarrow \mathbb{R}_+$ with $\kappa'(\omega) > 0$. The uninformed underwriter of the private market thus also chooses the mass of investors with which it places the claim. It is compensated through the percentage fee $\phi \in (0, 1)$ on expected financing revenue and bears the cost of attracting investors. The plaintiff first chooses the share sold γ . The underwriter, observing the share sold, chooses the mass ω , and the investors then observe their signals and trade at a price that remains private to the litigants. Bargaining therefore follows under the prior. Fixing the endowed mass at $\omega = 1$ and prohibiting expansion recovers the private market of Section 4.

Pricing. A larger investor mass changes both risk bearing and price informativeness. Aggregating the investors' demands as in Lemma 3, the private price reveals the statistic with precision

$$\tau_\xi(\omega) \equiv \frac{\omega^2 \tau_e^2 \tau_z}{\rho_I^2}.$$

The investors' residual precision is $\tau_{\text{pri}} + \tau_e + \tau_\xi(\omega)$. With $T = T(\gamma, \tau_{\text{pri}})$ the trial mass under the litigants' prior, the expected private price is

$$\mathbb{E}[p_{\text{pri}}(\gamma, \omega)] = \mathbb{E}Y - \frac{\rho_I}{\omega(\tau_{\text{pri}} + \tau_e + \tau_\xi(\omega))} \gamma T^2.$$

The price rises with the mass for two reasons. Each investor absorbs less exposure, since risk tolerances add up across investors, and their aggregate demand makes the private price more informative. At a fixed trial mass, the risk-minimizing share $\gamma_{\text{sy}}^{\text{risk}}(\omega)$ of a market of mass ω minimizes the plaintiff's cost of trial risk,

$$\gamma_{\text{sy}}^{\text{risk}}(\omega) = \frac{\rho_P}{\rho_P + \tilde{\rho}_I(\omega)}, \quad \tilde{\rho}_I(\omega) \equiv \frac{2\rho_I\tau_{\text{pri}}}{\omega(\tau_{\text{pri}} + \tau_e + \tau_\xi(\omega))}.$$

It is strictly increasing in ω , equals at $\omega = 1$ the private risk-minimizing share $\gamma_{\text{pri}}^{\text{risk}}$ of Definition 4, and converges to one as the market becomes fully liquid.

A fixed-mass benchmark. To discern the effect of the underwriter on financing, we consider a non-strategic benchmark, similar to the private market, but with an exogenous investor mass ω . The plaintiff's take-it-or-leave-it offer to the risk-neutral underwriter carries the fraction $1 - \phi$ of expected resale revenue, so his fixed-mass objective is

$$U_{P,\text{pri}}^{\text{sy}}(\gamma; \omega) \equiv \mathbb{E}Y - \frac{1}{2} [\tilde{\rho}_I(\omega)\gamma^2 + \rho_P(1 - \gamma)^2] T^2 \sigma_{\text{pri}}^2 - \phi \gamma \mathbb{E}[p_{\text{pri}}(\gamma, \omega)],$$

and we write $\gamma_{\text{fix}}(\omega)$ for its maximizer on $[0, 1]$. At a fee small enough, the plaintiff oversells relative to the risk-minimizing share of his market, $\gamma_{\text{sy}}^{\text{risk}}(\omega) < \gamma_{\text{fix}}(\omega)$. Again, at the benchmark the risk-allocation gain is exhausted, while the commitment gain remains strictly positive.

Optimal investor attraction. We solve the financing stage backwards and begin with the underwriter, which observes the share sold and chooses the mass of investors it attracts. The best response is accordingly a function $\omega(\gamma)$. The underwriter collects the fee on the revenue its intermediation generates and bears the cost of attracting investors,

$$\max_{\omega \in \mathbb{R}_+} \Pi(\gamma; \omega) = \phi \gamma \mathbb{E}[p_{\text{pri}}(\gamma, \omega)] - \kappa(\omega).$$

Only the revenue depends on the mass, and it does so exactly as the plaintiff's utility does, since the retained stake is priced independently of ω . The marginal value of depth is

$$\partial_\omega (\gamma \mathbb{E}[p_{\text{pri}}(\gamma, \omega)]) = -\rho_I \gamma^2 T^2 \partial_\omega \left[\frac{1}{\omega(\tau_{\text{pri}} + \tau_e + \tau_\xi(\omega))} \right] > 0.$$

Any additional investor mass makes the price more informative and thereby lowers the investors' posterior variance and raises the expected market-clearing price. It also reduces each investor's exposure and thereby further raises the expected price. Both effects increase the underwriter's expected revenue, while the litigants' beliefs and trial risk remain at the prior. Expected revenue is strictly concave in the mass, and its marginal gain tends to zero as $\omega \rightarrow \infty$. By weak convexity in Assumption 2 below, κ' is nondecreasing and

strictly positive, so marginal cost is bounded away from zero and the optimal mass is finite. The best response is therefore unique, characterized by the first-order condition $\phi \partial_\omega (\gamma \mathbb{E}[p_{\text{pri}}]) = \kappa'(\omega)$. The fee scales the marginal value of depth, so the underwriter's best response coincides with the one a surplus-maximizing underwriter would choose at the inflated cost κ/ϕ .

The financing stage is solved by composing these definitions in the order of the timeline. The expected private price follows from market clearing, the mass rule $\omega(\gamma)$ is the underwriter's best response, maximizing $\Pi(\gamma; \cdot)$ for every γ , and the share sold $\gamma_{\text{pri}}^{\text{sy}}$ maximizes the plaintiff's utility once this rule is folded in, $U_{P,\text{pri}}^{\text{sy}}(\gamma; \omega(\gamma))$. We write $\omega_{\text{pri}}^{\text{sy}} \equiv \omega(\gamma_{\text{pri}}^{\text{sy}})$ for the resulting mass. The investors learn from the private price, but the litigants do not, so the bargaining continuation remains under the prior. We also make some regularity assumptions.

Assumption 2. *The cost of attracting investors is weakly convex and twice continuously differentiable. The underwriter can decline the transaction and receive zero. At the equilibrium share, underwriting at the optimal investor mass is strictly profitable, $\Pi(\gamma_{\text{pri}}^{\text{sy}}; \omega_{\text{pri}}^{\text{sy}}) > 0$. When no share is sold, $\omega(0) = 0$ and total financing revenue is zero. The per-unit price at $(\gamma, \omega) = (0, 0)$ is left undefined because there is no trade.*

An endogenous investor mass affects the share sold through a level effect and a response effect. At a fixed mass, greater risk-bearing and information-aggregation capacity encourages the plaintiff to sell more. Comparing $\gamma_{\text{pri}}^{\text{sy}}$ with the private-market optimum γ_{pri} at unit mass would therefore conflate this level effect with the plaintiff's anticipation of the underwriter's response. The benchmark $\gamma_{\text{fix}}(\omega_{\text{pri}}^{\text{sy}})$ instead holds the investor mass fixed at its equilibrium level and absorbs the level effect. The gap between $\gamma_{\text{pri}}^{\text{sy}}$ and $\gamma_{\text{fix}}(\omega_{\text{pri}}^{\text{sy}})$ thus isolates the response effect: a larger announced sale induces the underwriter to attract more investors in the subsequent stage. The following proposition formalizes this comparison.

Proposition 10. *Let the fee be small enough that the plaintiff oversells at the fixed-mass benchmark, $\gamma_{\text{fix}}(\omega_{\text{pri}}^{\text{sy}}) \geq \gamma_{\text{sy}}^{\text{risk}}(\omega_{\text{pri}}^{\text{sy}})$. If $\gamma_{\text{fix}}(\omega_{\text{pri}}^{\text{sy}}) < 1$, the plaintiff sells strictly beyond his fixed-mass optimum, $\gamma_{\text{pri}}^{\text{sy}} > \gamma_{\text{fix}}(\omega_{\text{pri}}^{\text{sy}})$.*

The proof can be found in [Appendix A](#).

Intermediation thus encourages overselling under the conditions of Proposition 10 and, with it, raises the share of issues that proceed to trial. Syndication of this kind, however, need not require a formal market. Litigation funds likewise spread their risk, both across a portfolio of claims and across their own investors, and can pool information from several participants. The mechanism identified here may therefore already be at work in private markets for legal claims.

6.3 Equilibrium Selection

Proposition 1 selects the separating equilibrium by D1, which restricts off-path beliefs at a fixed on-path belief. Zeng [2025] instead compares equilibria. An equilibrium η' is *more persuasive* than an equilibrium η if there is an offer on the path of η' such that every type who makes it in η' weakly prefers η' to η , at least one strictly, or such that the types who strictly prefer η unravel sequentially (Zeng, 2025, Definitions 2 and 3). With two types the unraveling test is simple. Suppose a defendant type strictly prefers η to η' . She blocks η' from being more persuasive if, after the plaintiff correctly attributes her offer in η to her alone, he has a best response that gives her at least her payoff under η' .

We compare the separating equilibrium of Proposition 1 with the pooling equilibrium in which both types offer the plaintiff's pooled reservation and he accepts with probability one. The pooled reservation is his certainty equivalent of the award under the belief about the defendant's type,

$$\bar{x}_{P,\psi} \equiv -\frac{1}{a_P} \log \left[\psi e^{-a_P \bar{x}_{P,g}} + (1 - \psi) e^{-a_P \bar{x}_{P,b}} \right],$$

and we write $\tilde{x}_g$ for the good type's certainty equivalent of her separating payoff,

$$e^{\rho_D \tilde{x}_g} \equiv \pi_g e^{\rho_D \bar{x}_{P,g}} + (1 - \pi_g) e^{\rho_D \bar{x}_{D,g}}.$$

We work in the baseline model of Section 3 and hold the share sold fixed.

Proposition 11. *Fix $\gamma \in [0, 1)$.*

- (i) *At a fixed belief about the court factor, there is a unique threshold $\psi^*(\gamma, \tau) \in (0, 1)$, the solution of $\bar{x}_{P,\psi} = \tilde{x}_g$. The pooling equilibrium is more persuasive than the separating equilibrium if and only if $\psi \geq \psi^*(\gamma, \tau)$. Conditional on the pooling equilibrium existing, the separating equilibrium is more persuasive if $\psi < \psi^*(\gamma, \tau)$; at lower priors for which $\bar{x}_{P,\psi} > \bar{x}_{D,g}$, the candidate pooling equilibrium does not exist.*
- (ii) *The threshold is strictly increasing in the share sold, $\partial_\gamma \psi^*(\gamma, \tau) > 0$.*
- (iii) *The threshold is strictly increasing in the precision τ of the court factor at trial, $\partial_\tau \psi^*(\gamma, \tau) > 0$.*

The proof can be found in Appendix A.

The good type's comparison of the two equilibria decides the selection. The bad type strictly prefers pooling, since the pooled reservation is below her separating offer. The good type weakly prefers pooling only if the pooled reservation is at most her separation value, which requires a sufficiently large prior on the good type. At and above the threshold, pooling is more persuasive and the parties settle with certainty. Below it, the

separating equilibrium of Proposition 1 is more persuasive whenever the candidate pooling equilibrium exists; at still lower priors, the candidate pooling equilibrium does not exist. Financing and a more precise trial distribution tilt the comparison toward separation. A less exposed plaintiff discounts the liability lottery less, so financing raises the pooled offer the good type would have to pay, and it lowers her separation premium relative to the low-type reservation transfer. Greater precision reduces the residual risk of trial. This lowers the same separation premium without changing the plaintiff’s premium for uncertainty about the defendant’s type. In either case, pooling persuades only at a larger prior on the good type.

The proposition compares the separating equilibrium with the pooling equilibrium at a fixed share sold, and we do not solve the financing stage under pooling. We therefore read it as a statement on the robustness of the selection. The forces that lower the probability of settlement under D1, the plaintiff’s commitment and the information in the price, also shrink the set of cases in which the equilibrium without trial is more persuasive.

7 Discussion

Disclosure. The regulatory debate on litigation finance also concerns transparency. Courts and legislators in the United States have moved toward mandatory disclosure of third-party funding arrangements, and similar initiatives are under discussion in the European Union.⁶ These initiatives, like the critique of [Beisner and Rubin \[2012\]](#), rest on the presumption that more information about who finances a claim, and on what terms, improves market outcomes. Our results can also speak to this debate due to the nature of the public price. They suggest a more cautious assessment. In the model, transparency operates through the public price. The price conveys the investors’ assessment of the claim to both litigants, and its informativeness τ_ξ measures how much the market reveals. When the plaintiff retains a sufficiently large share, Proposition 5 shows that a more informative price raises the share he sells rather than tempering it, and Propositions 7 and 8 show that it raises the trial mass per filed case, directly through the less risky trial and indirectly through the larger share sold. Transparency, in this sense, does not discipline the plaintiff. Within the model, additional disclosure lowers the probability of settlement. This result is robust to equilibrium selection. Under the persuasiveness criterion, a more informative statistic also shrink the set of cases in which the pooling equilibrium, in which the parties settle with certainty, is more persuasive than the separating equilibrium.

⁶In the United States, several federal district courts require disclosure of funding arrangements by standing order or local rule, and proposed federal legislation would extend disclosure to class actions. In the European Union, the Parliament’s 2022 resolution on responsible private funding of litigation recommends an authorization and disclosure regime for commercial funders.

Market information on liability. Consider an alternative version of the model in which the public price also conveys information about the composition of liability types. This requires making ψ uncertain before financing, since the plaintiff already knows the type proportions in our specification. In an extension of the baseline model, a public signal that changes only the probability of the two liability types has a simpler effect. Provided both types retain positive posterior probability and beliefs about J are unchanged, the D1 offers and type-specific acceptance probabilities in Proposition 1 are independent of that probability. The equilibrium probability of trial then changes only through the probability of meeting the good type. The only additional effect may therefore operate through the news-hedging motive. This result also extends to a continuous type space. When the support of θ is bounded, a separating equilibrium can still be constructed, with offers independent of the prior density.⁷ Public information changes beliefs over types, but neither the equilibrium offer schedule nor the rejection probability conditional on type.

In the general model, learning about the liability proportions does not reveal the type of an individual issue, so asymmetric information and the need for costly separation remain. However, the bargaining outcomes need not remain unchanged at a given financing share. A larger realized ψ raises the trial mass T . This increases aggregate exposure to the common court factor and, by Lemma 2, lowers both type-specific equilibrium offers, $\bar{x}_{P,\theta} = \theta + \mu - a_P T \sigma^2$. Thus, information about composition can affect bargaining directly through aggregate exposure. Uncertainty about the composition of liability types also introduces aggregate valuation risk that the plaintiff can hedge through financing.

Contracting with trial costs. Our financing contract assigns the investor the same share of settlement and trial proceeds and leaves settlement authority with the plaintiff. Adding trial costs creates a separate contractual margin if the investor's share of those costs differs from its share of proceeds. Suppose that trial entails a cost $\delta > 0$ and the investor bears the fraction $\beta \in [0, 1]$ of this cost while purchasing the share $\gamma < 1$ of gross proceeds. In the baseline model, the plaintiff's reservation offer becomes $\theta + \mu_0 - \frac{1}{2}(1 - \gamma)\rho_P\sigma_{\text{rep}}^2 - (1 - \beta)\delta/(1 - \gamma)$. Proportional cost sharing, $\beta = \gamma$, subtracts the constant δ and preserves the positive effect of financing on the reservation offer. If instead β is fixed, selling more raises the trial cost per unit retained, which can offset or reverse the commitment effect. The same distinction applies issue by issue in the general model, with the marginal risk premium $a_P T \sigma^2$ replacing $\frac{1}{2}a_P\sigma_{\text{rep}}^2$.

⁷For $\theta \in [\underline{\theta}, \bar{\theta}]$, $\gamma < 1$ and $\sigma^2 > 0$, take $x(\theta) = \theta + \mu - \frac{1}{2}a_P\sigma^2$ and $\pi(\theta) = \exp\{-\rho_D(\bar{\theta} - \theta)/[\exp\{\frac{1}{2}\rho_D(\rho_D + a_P)\sigma^2\} - 1]\}$. The plaintiff is indifferent at every on-path offer, and each defendant type optimally chooses its own offer. Offers below the equilibrium range are rejected and those above it are accepted.

8 Conclusion

Beyond litigation, our analysis speaks to a general property of markets attached to bargaining games. Whenever a negotiating party can sell exposure to competitive outsiders while keeping control of the negotiation, liquidity and price discovery become strategic goods. Market depth supports tougher bargaining, and information amplifies it. The empty creditor of [Bolton and Oehmke \[2011\]](#) and the leveraged firm of [Perotti and Spier \[1993\]](#), whose capital structure extracts surplus from its counterparties, are instances of the same principle. In standard settings, deeper and better-informed markets are unambiguous goods. In our case, because the asset's cash flows are themselves the object of a negotiation, deeper and better-informed markets gain an additional role and can have adverse effects.

The nearest institutional analogue is insurance. The negotiation of a payout between an insurer and its policyholder is a bargaining game over an uncertain claim, and reinsurance is the market on which the negotiating party sheds exposure while retaining settlement authority. The reinsurer occupies the investor's role, and a related mechanism may operate in this setting. Establishing it requires a model that accounts for the change from an asset to a liability and for the associated differences in information, proposal power, and control. The match, however, is not perfect. In practice, the transfer often takes the form of a loss portfolio transfer, in which the reinsurer assumes the reserves and, with them, control over the handling of the claims. Ownership and authority move together, and the reinsurer's position is complete except for a cap on the aggregate losses assumed. Reinsurance thus resembles the full assignment that champerty doctrine forbids more than the pure cash-flow sale we study. This is an avenue we leave to future research.

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A Proofs

Throughout, $\bar{\theta} \equiv \psi\theta_g + (1 - \psi)\theta_b$, $\tau_{\text{pri}} \equiv \tau_0$ and $\sigma_{\text{pri}}^2 \equiv \sigma_0^2$ are defined in the main text, and we abbreviate the gap between the two liability shares by $\Delta \equiv \theta_b - \theta_g > 0$.

Until Lemma 2 we are in the baseline model of litigation finance: the case consists of one issue, and the plaintiff and the representative investor share the prior about J . Thus, in the proofs of Propositions 1–3 and Lemma 1, we use the certainty equivalents $\bar{x}_{P,\theta} = \theta + \mu_0 - \frac{1}{2}(1 - \gamma)\rho_P\sigma_{\text{rep}}^2$ and $\bar{x}_{D,\theta} = \theta + \mu_0 + \frac{1}{2}\rho_D\sigma_{\text{rep}}^2$ from Definition 1. Four order facts about them are used repeatedly. For each type, there are offers at which both litigants strictly prefer settlement to trial,

$$\bar{x}_{D,\theta} - \bar{x}_{P,\theta} = \frac{1}{2}(\rho_D + (1 - \gamma)\rho_P)\sigma_{\text{rep}}^2 > 0, \quad (1)$$

the plaintiff's and the defendant's reservations are each ordered by the type,

$$\bar{x}_{P,b} - \bar{x}_{P,g} = \bar{x}_{D,b} - \bar{x}_{D,g} = \Delta > 0, \quad (2)$$

and, since the award $\theta + J$ is normal with mean $\theta + \mu_0$ and variance σ_{rep}^2 under the prior, $\bar{x}_{P,\theta}$ and $\bar{x}_{D,\theta}$ are the certainty equivalents of the award for the plaintiff's retained stake and for the defendant,

$$\mathbb{E}[e^{-(1-\gamma)\rho_P(\theta+J)}] = e^{-(1-\gamma)\rho_P\bar{x}_{P,\theta}}, \quad \mathbb{E}[e^{\rho_D(\theta+J)}] = e^{\rho_D\bar{x}_{D,\theta}}. \quad (3)$$

Write $a_P \equiv (1 - \gamma)\rho_P$.

Proof of Proposition 1

Fix $\gamma \in [0, 1)$. For the additive award, Definition 1 gives

$$\bar{x}_{P,\theta} = \theta + \mu_0 - \frac{1}{2}a_P\sigma_{\text{rep}}^2, \quad \bar{x}_{D,\theta} = \theta + \mu_0 + \frac{1}{2}\rho_D\sigma_{\text{rep}}^2.$$

Thus both reservation gaps equal $\theta_b - \theta_g > 0$. Under a posterior belief about the good type, the plaintiff's pooled reservation is

$$\bar{x}_{P,\hat{\psi}} = -\frac{1}{a_P} \log \left[\hat{\psi} e^{-a_P\bar{x}_{P,g}} + (1 - \hat{\psi}) e^{-a_P\bar{x}_{P,b}} \right].$$

He strictly prefers acceptance above this reservation, strictly prefers rejection below it, and may randomize at equality. For an interior belief, the pooled reservation lies strictly between the two type reservations.

At full sale, Assumption 1 selects the limit of the outcome proved below; D1 alone does not establish uniqueness when the plaintiff retains no stake.

Before we proceed with the proof, we provide a definition of D1 selection and show that in our setup the criterion reduces to a comparison of thresholds on the plaintiff's acceptance probabilities. Fix some equilibrium and an off-path offer x that no type makes in equilibrium, and let $D(\theta, x)$ denote the set of plaintiff acceptance probabilities, optimal under some belief at that offer, under which the deviating type weakly improves on her equilibrium payoff. D1 eliminates a type whenever every response in her weak-gain set makes the other type strictly better off than in equilibrium, provided the latter has a profitable response. For offers between the two type reservations, every acceptance probability is optimal under some belief. Below both reservations only rejection is optimal, and above both only acceptance is optimal. Write V_θ for type θ 's equilibrium payoff and let $\hat{\pi}_\theta(x)$ solve type θ 's indifference between deviating to x and her equilibrium payoff,

$$\hat{\pi}_\theta(x) u_D(-x) + (1 - \hat{\pi}_\theta(x)) u_D(-\bar{x}_{D,\theta}) = V_\theta.$$

This threshold depends on the fixed equilibrium only through the equilibrium payoff V_θ . Whenever we invoke it below, it is understood relative to the equilibrium under consideration. For $x < \bar{x}_{D,\theta}$ the deviation payoff on the left strictly increases in the acceptance probability. At offers between the two type reservations, the gain set is $D(\theta, x) = [\max\{0, \hat{\pi}_\theta(x)\}, 1]$, and is empty if the threshold exceeds one. For $x \geq \bar{x}_{D,\theta}$ type θ weakly prefers trial to settlement at x , so her deviation payoff is at most the trial payoff $u_D(-\bar{x}_{D,\theta})$, and $D(\theta, x)$ is empty whenever type θ strictly prefers her equilibrium payoff to trial. In the comparisons below, strictly ordered thresholds place the smaller weak-gain set inside the other type's strict-gain set. If the good type has the lower threshold, D1 therefore requires $\hat{\psi}(x) = 1$. The symmetric comparison forces $\hat{\psi}(x) = 0$. If both gain sets are empty, no type gains from the deviation under any response and D1 places no restriction. Every elimination below satisfies this weak-to-strict comparison.

(a) *Unique separating equilibrium under D1*

In any separating equilibrium, the bad type's offer is $x_b = \bar{x}_{P,b}$ and the plaintiff's acceptance probability is $\pi_b = 1$. The bad type prefers settlement under this offer to trial, since $\bar{x}_{D,b} > \bar{x}_{P,b}$,⁸ and the plaintiff is indifferent. If instead $x_b < \bar{x}_{P,b}$, the offer is rejected, while a deviation to $\bar{x}_{P,b} + \varepsilon$ is accepted under any belief and is profitable for small $\varepsilon > 0$, since $\bar{x}_{P,b} + \varepsilon < \bar{x}_{D,b}$. If instead $x_b > \bar{x}_{P,b}$, the offer is accepted, but the bad type can profitably lower the offer to any $x' \in (\bar{x}_{P,b}, x_b)$. Finally, if $x_b = \bar{x}_{P,b}$ but the plaintiff would instead accept with probability $\pi_b < 1$, the bad type can again profitably deviate to $\bar{x}_{P,b} + \varepsilon$.

In any separating equilibrium passing the D1 criterion, the good type's equilibrium offer is $x_g = \bar{x}_{P,g}$ and the plaintiff's acceptance probability is $\pi_g < 1$. The good type

⁸To verify this for any type θ , take the difference $\bar{x}_{D,\theta} - \bar{x}_{P,\theta} = \frac{1}{2}(\rho_D + (1 - \gamma)\rho_P)\sigma_{\text{rep}}^2 > 0$.

prefers settlement with this offer to trial, since $\bar{x}_{D,g} > \bar{x}_{P,g}$, and the plaintiff is indifferent. If instead $x_g > \bar{x}_{P,b}$, the offer would be accepted, but the good type would profitably deviate to the bad type's cheaper offer $\bar{x}_{P,b}$, which is accepted with certainty. If instead $x_g \in (\bar{x}_{P,g}, \bar{x}_{P,b})$, the offer is accepted, but the bad type would mimic this cheaper offer, failing separation. The same holds for $x_g = \bar{x}_{P,g}$, when the plaintiff accepts with probability $\pi_g = 1$. If instead $x_g < \bar{x}_{P,g}$, the offer is rejected, and an equilibrium can be sustained by off-path beliefs with $\hat{\psi}(x) = 0$ for all $x \in (\bar{x}_{P,g}, \bar{x}_{P,b})$ whenever $\bar{x}_{D,g} < \bar{x}_{P,b}$, i.e., the good type does not gain from deviating to the bad type's offer. However, these beliefs are eliminated by the D1 criterion. To see why, take an off-path offer $x' \in (\bar{x}_{P,g}, \bar{x}_{D,g})$, an interval that is nonempty and contained in $(\bar{x}_{P,g}, \bar{x}_{P,b})$ since $\bar{x}_{P,g} < \bar{x}_{D,g} < \bar{x}_{P,b}$. The two types enter the D1 comparison with different equilibrium payoffs. The good type's offer is rejected, so her equilibrium payoff is the trial payoff, $V_g = u_D(-\bar{x}_{D,g})$. Since $x' < \bar{x}_{D,g}$, deviating to x' leaves her at least as well off under every acceptance probability, so $\hat{\pi}_g(x') = 0$ and $D(\theta_g, x') = [0, 1]$. The bad type settles at $\bar{x}_{P,b}$, so her equilibrium payoff $V_b = u_D(-\bar{x}_{P,b})$ strictly exceeds her trial payoff $u_D(-\bar{x}_{D,b})$, since $\bar{x}_{P,b} < \bar{x}_{D,b}$. Deviating to x' therefore requires a strictly positive acceptance probability to compensate her for the risk of trial, so $\hat{\pi}_b(x') > 0$ and $D(\theta_b, x') = [\hat{\pi}_b(x'), 1] \subsetneq [0, 1] = D(\theta_g, x')$. D1 thus forces $\hat{\psi}(x') = 1$. Under this belief the plaintiff accepts the offer, since $x' > \bar{x}_{P,g}$, and the good type strictly prefers the accepted offer to trial, since $x' < \bar{x}_{D,g}$. This profitable deviation eliminates every separating equilibrium with $x_g < \bar{x}_{P,g}$.

The acceptance probability π_g is pinned down by the litigants' incentive compatibility and the D1 criterion. The bad type's incentive constraint not to mimic the good type is stated in the main text and rearranges to $\pi_g \leq \bar{\pi}_g$, with $\bar{\pi}_g$ as defined in Section 3. The good type's incentive constraint not to mimic the bad type is $u_D(-\bar{x}_{P,b}) \leq \pi_g u_D(-\bar{x}_{P,g}) + (1 - \pi_g) u_D(-\bar{x}_{D,g})$. Substituting $u_D(-x) = -e^{\rho D x}$ and solving for π_g , this holds if and only if

$$\pi_g \geq \frac{e^{\rho D \bar{x}_{D,g}} - e^{\rho D \bar{x}_{P,b}}}{e^{\rho D \bar{x}_{D,g}} - e^{\rho D \bar{x}_{P,g}}} = \underline{\pi}_g,$$

the denominator being positive because $\bar{x}_{D,g} > \bar{x}_{P,g}$. It remains to check that $\underline{\pi}_g < \bar{\pi}_g$, so that the feasible interval is nonempty. Both thresholds are values of the map $v \mapsto (v - e^{\rho D \bar{x}_{P,b}}) / (v - e^{\rho D \bar{x}_{P,g}})$, with $\underline{\pi}_g$ its value at $v = e^{\rho D \bar{x}_{D,g}}$ and $\bar{\pi}_g$ its value at $v = e^{\rho D \bar{x}_{D,b}}$. Its derivative $(e^{\rho D \bar{x}_{P,b}} - e^{\rho D \bar{x}_{P,g}}) / (v - e^{\rho D \bar{x}_{P,g}})^2$ is strictly positive, since $\bar{x}_{P,b} > \bar{x}_{P,g}$ by the reservation ordering above, so the map is strictly increasing. As $\bar{x}_{D,b} > \bar{x}_{D,g}$ gives $e^{\rho D \bar{x}_{D,b}} > e^{\rho D \bar{x}_{D,g}}$, it follows that $\bar{\pi}_g > \underline{\pi}_g$. Hence, any $\pi_g \in [\max\{0, \underline{\pi}_g\}, \bar{\pi}_g]$ can be sustained in a separating equilibrium.

The upper bound $\bar{\pi}_g$ is strictly between zero and one, since its numerator is positive and smaller than its denominator.

In any separating equilibrium satisfying the D1 criterion, it must hold that $\pi_g = \bar{\pi}_g$. We

show the D1 criterion eliminates all separating equilibria with $\pi_g < \bar{\pi}_g$. The equilibrium payoffs are $V_b = -e^{\rho_D \bar{x}_{P,b}}$ and $V_g = -(\pi_g e^{\rho_D \bar{x}_{P,g}} + (1-\pi_g) e^{\rho_D \bar{x}_{D,g}})$, so solving the indifference equations for $x' < \bar{x}_{D,g}$ gives

$$\hat{\pi}_b(x') = \frac{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,b}}}{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D x'}}, \quad \hat{\pi}_g(x') = \pi_g \frac{e^{\rho_D \bar{x}_{D,g}} - e^{\rho_D \bar{x}_{P,g}}}{e^{\rho_D \bar{x}_{D,g}} - e^{\rho_D x'}}.$$

For x' close enough to $\bar{x}_{P,g}$ we have $x' < \bar{x}_{P,b} < \bar{x}_{D,b}$, so $\hat{\pi}_b(x') \in (0, 1)$ and the bad type's gain set is nonempty. As $x' \downarrow \bar{x}_{P,g}$ we have $\hat{\pi}_g(x') \rightarrow \pi_g < \bar{\pi}_g$ and $\hat{\pi}_b(x') \rightarrow \bar{\pi}_g$, so for offers near $\bar{x}_{P,g}$ the thresholds are ordered $\hat{\pi}_g(x') < \hat{\pi}_b(x')$, i.e. $D(\theta_b, x') \subsetneq D(\theta_g, x')$, and D1 places belief one on the good type. The plaintiff then accepts the deviation to the offer x' with certainty. The good type prefers to deviate, since she strictly prefers the accepted offer to her equilibrium lottery. Hence, every separating equilibrium with $\pi_g < \bar{\pi}_g$ fails D1, and we obtain uniqueness.

In the unique separating equilibrium satisfying the D1 criterion, the off-path beliefs can be taken to be $\hat{\psi}(x) = 0$ everywhere. That is, the plaintiff always believes the bad type is deviating. Consider first an off-path offer $x' \in (\bar{x}_{P,g}, \bar{x}_{P,b})$. If $x' \geq \bar{x}_{D,g}$, which occurs on part of the interval when $\bar{x}_{D,g} < \bar{x}_{P,b}$, then since $\bar{\pi}_g > 0$ the good type strictly prefers her equilibrium payoff to trial. In this case, the good type's gain set is empty. If the bad type's gain set is nonempty, then $D(\theta_g, x') \subsetneq D(\theta_b, x')$ and D1 forces belief one on the bad type; if it is empty as well, D1 places no restriction and the belief $\hat{\psi}(x') = 0$ is admissible. For $x' < \bar{x}_{D,g}$, substitute $\pi_g = \bar{\pi}_g$ into $\hat{\pi}_g(x')$, and rewrite $\hat{\pi}_b(x') < \hat{\pi}_g(x')$ as

$$\frac{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,b}}}{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D x'}} < \frac{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,b}}}{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,g}}} \frac{e^{\rho_D \bar{x}_{D,g}} - e^{\rho_D \bar{x}_{P,g}}}{e^{\rho_D \bar{x}_{D,g}} - e^{\rho_D x'}}.$$

Rearranging yields,

$$(e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,g}})(e^{\rho_D \bar{x}_{D,g}} - e^{\rho_D x'}) < (e^{\rho_D \bar{x}_{D,g}} - e^{\rho_D \bar{x}_{P,g}})(e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D x'}),$$

and,

$$(e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{D,g}})(e^{\rho_D \bar{x}_{P,g}} - e^{\rho_D x'}) < 0,$$

which holds because $\bar{x}_{D,b} > \bar{x}_{D,g}$ and $x' > \bar{x}_{P,g}$, so D1 again places belief one on the bad type. The criterion therefore requires $\hat{\psi}(x) = 0$ at every off-path offer $x \in (\bar{x}_{P,g}, \bar{x}_{P,b})$. Below the good type's reservation, rejection is the only optimal response and both types strictly lose relative to their equilibrium payoffs. Above the bad type's reservation, acceptance is the only optimal response and both types again strictly lose. Thus both gain sets are empty outside the interval, and D1 leaves those off-path beliefs unrestricted.

The unique separating equilibrium under D1 exists. Under these off-path beliefs, the plaintiff's acceptance rule is sequentially rational, since he is indifferent between

accepting and rejecting at both equilibrium offers. Neither defendant type gains from mimicking the other, since both incentive constraints established above hold at $\pi_g = \bar{\pi}_g$. Every other deviation is unprofitable under the worst possible belief $\hat{\psi}(x) = 0$, since it is either rejected and leads to trial or accepted at a cost above $\bar{x}_{P,b}$. Hence, we obtain the main part of the result, and can now proceed to eliminate the other equilibrium families.

(b) *Elimination of pooling and semi-separating equilibria under D1.*

In any pooling equilibrium, both types offer x_{pool} , which the plaintiff accepts with probability π_{pool} under the belief equal to the prior, $\hat{\psi}(x_{\text{pool}}) = \psi$. The plaintiff's acceptance requires $x_{\text{pool}} \geq \bar{x}_{P,\psi}$. The good type requires $x_{\text{pool}} \leq \bar{x}_{D,g}$, and both types require $x_{\text{pool}} \leq \bar{x}_{P,b}$, since any transfer above $\bar{x}_{P,b}$ could be profitably undercut by an offer that is accepted under every belief. In the case of $\pi_{\text{pool}} = 1$, we get

$$x_{\text{pool}} \in [\bar{x}_{P,\psi}, \min\{\bar{x}_{P,b}, \bar{x}_{D,g}\}].$$

Since $\bar{x}_{P,\psi} \leq \bar{x}_{P,b}$, this interval is nonempty if and only if $\bar{x}_{P,\psi} \leq \bar{x}_{D,g}$. Every such pooling equilibrium can be supported by off-path beliefs assigning probability one to the bad type everywhere. Any accepted deviation costs at least $\bar{x}_{P,b} \geq x_{\text{pool}}$. Any rejected deviation yields the trial payoff, which is at most $u_D(-\bar{x}_{D,g}) \leq u_D(-x_{\text{pool}})$ for the good type, and even worse for the bad type. Hence no deviation is profitable. In the case of $\pi_{\text{pool}} \in (0, 1)$, the plaintiff's indifference forces $x_{\text{pool}} = \bar{x}_{P,\psi}$. Existence of such equilibria requires $x_{\text{pool}} \leq \bar{x}_{D,g}$ and thus $\bar{x}_{P,\psi} \leq \bar{x}_{D,g}$. The precise set of supportable π_{pool} is immaterial, because the D1 criterion eliminates every pooling profile with $\pi_{\text{pool}} \in (0, 1]$ by the same argument as in part (a). Consider a deviation $x' \in (\bar{x}_{P,g}, x_{\text{pool}})$. This interval is nonempty, since $x_{\text{pool}} \geq \bar{x}_{P,\psi} > \bar{x}_{P,g}$, where the second inequality holds because the pooled reservation lies strictly between the type reservations by the reservation ordering above. Solving each type's indifference between the deviation and her equilibrium lottery gives the acceptance thresholds

$$\hat{\pi}_\theta(x') = \pi_{\text{pool}} \frac{e^{\rho_D \bar{x}_{D,\theta}} - e^{\rho_D x_{\text{pool}}}}{e^{\rho_D \bar{x}_{D,\theta}} - e^{\rho_D x'}}, \quad \theta \in \{\theta_g, \theta_b\},$$

both lying in $[0, 1]$ since $x' < x_{\text{pool}} \leq \bar{x}_{D,g} < \bar{x}_{D,b}$, with $\hat{\pi}_g(x') = 0$ exactly when $x_{\text{pool}} = \bar{x}_{D,g}$, so both gain sets are nonempty. Apart from the common factor π_{pool} , both thresholds are values of the map $v \mapsto (v - e^{\rho_D x_{\text{pool}}}) / (v - e^{\rho_D x'})$, which is strictly increasing because $x' < x_{\text{pool}}$, so $\bar{x}_{D,g} < \bar{x}_{D,b}$ yields $\hat{\pi}_g(x') < \hat{\pi}_b(x')$, i.e. $D(\theta_b, x') \subsetneq D(\theta_g, x')$, and D1 places belief one on the good type. The plaintiff then accepts $x' > \bar{x}_{P,g}$ with certainty, and the good type strictly gains, since the certain transfer x' lies below x_{pool} and hence below the certainty equivalent of her equilibrium lottery. A pooling offer rejected with certainty cannot be an equilibrium either. The bad type would deviate to a transfer just above $\bar{x}_{P,b}$,

which is accepted under every belief and lies below $\bar{x}_{D,b}$, so the deviation improves on her trial payoff. Every pooling equilibrium therefore fails D1.

There exists no semi-separating equilibrium under D1. To see why, first observe that, in any semi-separating equilibrium under D1, each defendant type mixes over at most one common and at most one type-exclusive offer. Firstly, there cannot be more than one common offer. Suppose for contradiction that two such offers exist. Mixing requires both types to be jointly indifferent between those offers, which can only be achieved by the plaintiff's rejection with certainty of both offers, since the types differ in their trial payoffs. In this case, the bad type could profitably deviate to a transfer just above $\bar{x}_{P,b}$, which is accepted under every belief. Secondly, neither can a type mix across distinct type-exclusive offers. Any such offer carries a degenerate belief. The plaintiff generically accepts or rejects with certainty, and only randomizes at his certainty equivalent offer. Two accepted offers trivially fail indifference. If one or both offers are rejected, and indifference leaves the type with her trial payoff, there are profitable deviations. The bad type deviates to a transfer just above $\bar{x}_{P,b}$. The good type is eliminated by the D1 argument applied above to $x_g < \bar{x}_{P,g}$, provided the bad type's equilibrium payoff strictly exceeds her trial payoff, which is necessary for equilibrium. In the non-generic case, the plaintiff randomizes acceptance at his certainty equivalent offer for the given type, $\bar{x}_{P,g}$ or $\bar{x}_{P,b}$. For the bad type, again, there is a profitable deviation to a transfer just above $\bar{x}_{P,b}$. For the good type, the other offer x_{ss} in the mixing support must be accepted with certainty and lie between $\bar{x}_{P,g}$ and $\min\{\bar{x}_{D,g}, \bar{x}_{P,b}\}$, which violates the bad type's incentive constraint.

Now, denote the common offer by x_{ss} . Bayes' rule requires $\hat{\psi}(x_{ss}) \in (0, 1)$. The common offer x_{ss} is accepted with positive probability, $\pi_{ss} > 0$. If instead $\pi_{ss} = 0$, then the bad type could again profitably deviate. By the plaintiff's sequential rationality for $\pi_{ss} > 0$, and the reservation ordering above, we get $\bar{x}_{P,g} < \bar{x}_{P,\hat{\psi}(x_{ss})} \leq x_{ss}$; the good type's willingness to settle at the common offer further gives $x_{ss} \leq \bar{x}_{D,g}$. The respective type's equilibrium payoffs are $V_\theta = \pi_{ss} u_D(-x_{ss}) + (1 - \pi_{ss}) u_D(-\bar{x}_{D,\theta})$. The type-exclusive offers do not matter for this proof.

The common offer thus satisfies the two properties on which the pooling argument rested, namely $\bar{x}_{P,g} < x_{ss} \leq \bar{x}_{D,g}$ and $\pi_{ss} > 0$, and both types' equilibrium payoffs are the payoffs of the lottery at that offer. The same D1 argument therefore applies. Consider a deviation $x' \in (\bar{x}_{P,g}, x_{ss})$, an interval that is nonempty by the bound just established. Solving each type's indifference between the deviation and her equilibrium payoff gives the acceptance thresholds

$$\hat{\pi}_\theta(x') = \pi_{ss} \frac{e^{\rho_D \bar{x}_{D,\theta}} - e^{\rho_D x_{ss}}}{e^{\rho_D \bar{x}_{D,\theta}} - e^{\rho_D x'}}, \quad \theta \in \{\theta_g, \theta_b\},$$

both lying in $[0, 1)$ since $x' < x_{ss} \leq \bar{x}_{D,g} < \bar{x}_{D,b}$, so both gain sets are nonempty. Apart from

the common factor π_{ss} , both thresholds are values of the map $v \mapsto (v - e^{\rho_D x_{ss}}) / (v - e^{\rho_D x'})$, which is strictly increasing because $x' < x_{ss}$, so $\bar{x}_{D,g} < \bar{x}_{D,b}$ yields $\hat{\pi}_g(x') < \hat{\pi}_b(x')$. D1 places belief one on the good type. The plaintiff then accepts $x' > \bar{x}_{P,g}$ with certainty, and the good type strictly gains, since the certain transfer x' lies below x_{ss} . $\square$

Proof of Lemma 1

Differentiating the plaintiff's reservation value gives

$$\partial_\gamma \bar{x}_{P,\theta} = \frac{1}{2} \rho_P \sigma_{\text{rep}}^2 > 0 \quad \theta \in \{\theta_g, \theta_b\}.$$

The derivative is positive because risk aversion and the variance are strictly positive.

Rewriting the rejection probability from Proposition 1 using (1) and (2) yields

$$\begin{aligned} 1 - \pi_g &= \frac{e^{\rho_D \bar{x}_{P,b}} - e^{\rho_D \bar{x}_{P,g}}}{e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,g}}} \\ &= \frac{e^{-\rho_D(\bar{x}_{D,b} - \bar{x}_{P,b})} - e^{-\rho_D(\bar{x}_{D,b} - \bar{x}_{P,g})}}{1 - e^{-\rho_D(\bar{x}_{D,b} - \bar{x}_{P,g})}} \\ &= \frac{e^{-\frac{1}{2}\rho_D(\rho_D + a_P)\sigma_{\text{rep}}^2} (1 - e^{-\rho_D \Delta})}{1 - e^{-\rho_D \Delta - \frac{1}{2}\rho_D(\rho_D + a_P)\sigma_{\text{rep}}^2}}. \end{aligned}$$

It lies strictly between zero and one by Proposition 1, so

$$\begin{aligned} \log(1 - \pi_g) &= -\frac{1}{2}\rho_D(\rho_D + a_P)\sigma_{\text{rep}}^2 + \log(1 - e^{-\rho_D \Delta}) \\ &\quad - \log\left(1 - e^{-\rho_D \Delta - \frac{1}{2}\rho_D(\rho_D + a_P)\sigma_{\text{rep}}^2}\right). \end{aligned}$$

Because $\partial_\gamma a_P = -\rho_P$, the chain rule gives

$$\begin{aligned} \partial_\gamma \log(1 - \pi_g) &= \frac{\frac{1}{2}\rho_D \rho_P \sigma_{\text{rep}}^2}{1 - e^{-\rho_D \Delta - \frac{1}{2}\rho_D(\rho_D + a_P)\sigma_{\text{rep}}^2}} > 0, \\ \partial_\gamma^2 \log(1 - \pi_g) &= \frac{\left(\frac{1}{2}\rho_D \rho_P \sigma_{\text{rep}}^2\right)^2 e^{-\rho_D \Delta - \frac{1}{2}\rho_D(\rho_D + a_P)\sigma_{\text{rep}}^2}}{\left(1 - e^{-\rho_D \Delta - \frac{1}{2}\rho_D(\rho_D + a_P)\sigma_{\text{rep}}^2}\right)^2} > 0. \end{aligned}$$

Both derivatives are positive because the exponential lies strictly between zero and one.

Differentiating the rejection probability itself gives

$$\begin{aligned} \partial_\gamma \pi_g &= -(1 - \pi_g) \partial_\gamma \log(1 - \pi_g) < 0, \\ \partial_\gamma^2 \pi_g &= -(1 - \pi_g) \left[(\partial_\gamma \log(1 - \pi_g))^2 + \partial_\gamma^2 \log(1 - \pi_g) \right] < 0. \end{aligned}$$

The inequalities follow from $1 - \pi_g > 0$ and the two signs above. $\square$

Proof of Proposition 2

Throughout the proof, we write Y for $Y(\gamma)$ to ease notation.

(a) *Write the objective.* By Proposition 1, the proceeds per unit of the claim are

$$Y(\gamma) = \begin{cases} \bar{x}_{P,\theta}(\gamma), & \text{if settlement occurs,} \\ \theta + J, & \text{if the case goes to trial,} \end{cases}$$

settlement occurring with probability 1 for θ_b and with probability $\pi_g(\gamma)$ for θ_g . The plaintiff's take-it-or-leave-it offer prices the share at the representative investor's certainty equivalent $p_{\text{rep}} = -\frac{1}{\rho_I \gamma} \log \mathbb{E}[e^{-\rho_I \gamma Y(\gamma)}]$, so the plaintiff maximizes

$$U_{P,\text{rep}}(\gamma) = -\frac{1}{\rho_I} \log \mathbb{E}[e^{-\rho_I \gamma Y(\gamma)}] - \frac{1}{\rho_P} \log \mathbb{E}[e^{-a_P Y(\gamma)}].$$

Write $a_I(\gamma) \equiv \rho_I \gamma$ for the investors' exposure alongside the plaintiff's $a_P = (1 - \gamma)\rho_P$, and for a random variable Z and an exposure t let $\tilde{\mathbb{E}}_t[Z] \equiv \mathbb{E}[Ze^{-tY}]/\mathbb{E}[e^{-tY}]$ be the tilted expectation, with $\tilde{\text{Cov}}_t$ and $\tilde{\text{Var}}_t$ the associated second moments. The effect of the change in the acceptance probability on party j 's valuation is

$$h_{a_j}(\gamma) \equiv \psi \partial_\gamma \pi_g(\gamma) \frac{e^{-a_j \bar{x}_{P,g}(\gamma)} - \mathbb{E}[e^{-a_j(\theta_g + J)}]}{\mathbb{E}[e^{-a_j Y}]}, \quad j \in \{I, P\}.$$

Throughout, $\partial_\gamma Y$ denotes differentiation holding the settlement or trial branch fixed; changes in branch probabilities are accounted for separately. Finally, the share at which the two exposures coincide, $a_I = a_P$, is the risk-minimizing share $\gamma_{\text{rep}}^{\text{risk}} = \rho_P/(\rho_P + \rho_I)$ of Definition 2.

(b) *Sign the derivative at the benchmark.* We evaluate $U_{P,\text{rep}}'$ at the risk-minimizing share and sign it, which tells us on which side of $\gamma_{\text{rep}}^{\text{risk}}$ the optimal share lies. Recall

$$U_{P,\text{rep}}'(\gamma) = \tilde{\mathbb{E}}_{a_I}[Y] - \tilde{\mathbb{E}}_{a_P}[Y] + \gamma \tilde{\mathbb{E}}_{a_I}[\partial_\gamma Y] + (1 - \gamma) \tilde{\mathbb{E}}_{a_P}[\partial_\gamma Y] - \frac{1}{\rho_I} h_{a_I}(\gamma) - \frac{1}{\rho_P} h_{a_P}(\gamma).$$

At the risk-minimizing share, the exposures coincide, $a_I(\gamma_{\text{rep}}^{\text{risk}}) = a_P(\gamma_{\text{rep}}^{\text{risk}})$. It follows that the plaintiff's and the investor's terms are equal. Hence, the first two tilted Y -terms cancel out. The subsequent two terms can be combined. The last two terms are equal to zero by the indifference condition on the plaintiff accepting the offer. It follows that

$$U_{P,\text{rep}}'(\gamma_{\text{rep}}^{\text{risk}}) = \tilde{\mathbb{E}}_{a_P}[\partial_\gamma Y].$$

In order to sign this expression, we write its components in terms of the primitives and

the bargaining outcomes.

$$\begin{aligned}\mathbb{E}[e^{-a_P Y}] &= \psi[\pi_g(\gamma)e^{-a_P \bar{x}_{P,g}(\gamma)} + (1 - \pi_g(\gamma))\mathbb{E}[e^{-a_P(\theta_g + J)}]] \\ &\quad + (1 - \psi)e^{-a_P \bar{x}_{P,b}(\gamma)} \\ \mathbb{E}[\partial_\gamma Y e^{-a_P Y}] &= \psi\pi_g(\gamma)e^{-a_P \bar{x}_{P,g}(\gamma)}\partial_\gamma \bar{x}_{P,g}(\gamma) \\ &\quad + (1 - \psi)e^{-a_P \bar{x}_{P,b}(\gamma)}\partial_\gamma \bar{x}_{P,b}(\gamma).\end{aligned}$$

It follows that

$$U_{P,\text{rep}}'(\gamma_{\text{rep}}^{\text{risk}}) = \lambda_g(a_P) \partial_\gamma \bar{x}_{P,g} + \lambda_b(a_P) \partial_\gamma \bar{x}_{P,b},$$

where, for notational brevity, we used

$$\lambda_g(t) \equiv \frac{\psi\pi_g e^{-t\bar{x}_{P,g}}}{\mathbb{E}[e^{-tY}]}, \quad \lambda_b(t) \equiv \frac{(1 - \psi) e^{-t\bar{x}_{P,b}}}{\mathbb{E}[e^{-tY}]}.$$

This is strictly positive, since $\partial_\gamma \bar{x}_{P,g} > 0$ and $\partial_\gamma \bar{x}_{P,b} > 0$ by Lemma 1 and all other factors are positive. A marginal increase in γ away from the risk-minimizing share therefore strictly raises the objective, so $\gamma_{\text{rep}}^{\text{risk}}$ is not optimal.

(c) *Compute the second derivative.* To conclude that γ_{rep} is the unique maximizer, we show $U_{P,\text{rep}}(\gamma)$ strictly concave above $\gamma_{\text{rep}}^{\text{risk}}$ and also strictly increasing until $\gamma_{\text{rep}}^{\text{risk}}$. Let $\tilde{\text{Cov}}_t[\cdot]$, $\tilde{\text{Var}}_t[\cdot]$ denote the exponentially tilted moments with respect to risk aversion parameter t . We obtain

$$\begin{aligned}U_{P,\text{rep}}''(\gamma) &= 2\tilde{\mathbb{E}}_{a_I}[\partial_\gamma Y] + \gamma \tilde{\mathbb{E}}_{a_I}[\partial_\gamma^2 Y] \\ &\quad - \rho_I \left(\tilde{\text{Var}}_{a_I}(Y) + 2\gamma \tilde{\text{Cov}}_{a_I}(Y, \partial_\gamma Y) + \gamma^2 \tilde{\text{Var}}_{a_I}(\partial_\gamma Y) \right) \\ &\quad - 2\tilde{\mathbb{E}}_{a_P}[\partial_\gamma Y] + (1 - \gamma) \tilde{\mathbb{E}}_{a_P}[\partial_\gamma^2 Y] \\ &\quad - \rho_P \left(\tilde{\text{Var}}_{a_P}(Y) - 2(1 - \gamma) \tilde{\text{Cov}}_{a_P}(Y, \partial_\gamma Y) + (1 - \gamma)^2 \tilde{\text{Var}}_{a_P}(\partial_\gamma Y) \right) \\ &\quad + H_{a_I}[Y] + \gamma H_{a_I}[\partial_\gamma Y] - H_{a_P}[Y] + (1 - \gamma) H_{a_P}[\partial_\gamma Y] \\ &\quad - \frac{1}{\rho_I} \frac{d}{d\gamma} h_{a_I}(\gamma) - \frac{1}{\rho_P} \frac{d}{d\gamma} h_{a_P}(\gamma)\end{aligned}$$

where the last two lines describe the effect of the change in the good type's acceptance probability $\pi_g(\gamma)$, with the terms

$$H_{a_j}[Z] \equiv \frac{\psi \partial_\gamma \pi_g(\gamma)}{\mathbb{E}[e^{-a_j Y}]} \left(Z_g^S e^{-a_j \bar{x}_{P,g}} - \mathbb{E}[Z_g^T e^{-a_j(\theta_g + J)}] \right) - \tilde{\mathbb{E}}_{a_j}[Z] h_{a_j}(\gamma),$$

where Z_g^S and Z_g^T denote the values of Z on the good type's settlement and trial branches: $(Z_g^S, Z_g^T) = (\bar{x}_{P,g}, \theta_g + J)$ for $Z = Y$, and $(\partial_\gamma \bar{x}_{P,g}, 0)$ for $Z = \partial_\gamma Y$. Note that these terms enter $U_{P,\text{rep}}''$ through the change in valuation by the investor, since the plaintiff is

indifferent between accepting and rejecting at each point. The term $H_{a_j}[Z]$ comes from the change in the tilted expectations with respect to the good-type acceptance probability $\pi_g(\gamma)$, where the quotient rule is applied to the tilted ratio. In order to sign $U_{P,\text{rep}}''$, we rewrite the bracketed second-moment terms as the tilted variance of the sums of the respective random variables.

The term $-\frac{1}{\rho_P} \frac{d}{d\gamma} h_{a_P}$ vanishes because $h_{a_P} \equiv 0$ at every γ . The H_{a_P} terms cancel, since $h_{a_P} = 0$ and differentiating the plaintiff's indifference identity $e^{-a_P \bar{x}_{P,g}} = \mathbb{E}[e^{-a_P(\theta_g + J)}]$, which is (3), in γ , with $a'_P = -\rho_P$, gives $\bar{x}_{P,g} e^{-a_P \bar{x}_{P,g}} - \mathbb{E}[(\theta_g + J) e^{-a_P(\theta_g + J)}] = (1 - \gamma) \partial_\gamma \bar{x}_{P,g} e^{-a_P \bar{x}_{P,g}}$. Hence,

$$\begin{aligned} U_{P,\text{rep}}''(\gamma) &= 2\tilde{\mathbb{E}}_{a_I}[\partial_\gamma Y] - 2\tilde{\mathbb{E}}_{a_P}[\partial_\gamma Y] \\ &\quad + \gamma \tilde{\mathbb{E}}_{a_I}[\partial_\gamma^2 Y] + (1 - \gamma) \tilde{\mathbb{E}}_{a_P}[\partial_\gamma^2 Y] \\ &\quad - \rho_I \tilde{\text{Var}}_{a_I}(Y + \gamma \partial_\gamma Y) - \rho_P \tilde{\text{Var}}_{a_P}(Y - (1 - \gamma) \partial_\gamma Y) \\ &\quad + H_{a_I}[Y] + \gamma H_{a_I}[\partial_\gamma Y] - \frac{1}{\rho_I} \frac{d}{d\gamma} h_{a_I}(\gamma) \end{aligned}$$

(d) *Sign the second derivative.* We sign the four lines of the expression above in turn. Integrating the identity $\partial_t \tilde{\mathbb{E}}_t[Z] = -\tilde{\text{Cov}}_t(Z, Y)$ in the exposure from a_P to a_I , the first line of $U_{P,\text{rep}}''$ becomes

$$2(\tilde{\mathbb{E}}_{a_I}[\partial_\gamma Y] - \tilde{\mathbb{E}}_{a_P}[\partial_\gamma Y]) = -2 \int_{a_P}^{a_I} \tilde{\text{Cov}}_t(\partial_\gamma Y, Y) dt.$$

In the overselling case, the investor is the more exposed party, $a_I > a_P$, so the first line carries the opposite sign of the tilted covariance $\tilde{\text{Cov}}_t(\partial_\gamma Y, Y)$ integrated over $[a_P, a_I]$. We sign this covariance, evaluated at some arbitrary tilt $t \in [a_P, a_I]$.

Define the offer gap $\Delta \bar{x} \equiv \bar{x}_{P,b} - \bar{x}_{P,g}$, which by (2) is the constant Δ . The tilted branch weights are $\lambda_g(t) \equiv \frac{\psi \pi_g e^{-t \bar{x}_{P,g}}}{\mathbb{E}[e^{-tY}]}$, $\lambda_b(t) \equiv \frac{(1-\psi) e^{-t \bar{x}_{P,b}}}{\mathbb{E}[e^{-tY}]}$, and $\lambda_T(t) \equiv 1 - \lambda_g(t) - \lambda_b(t) \geq 0$ for the good type's trial branch. Its conditional tilted mean is

$$\tilde{\mathbb{E}}_t^{g,\text{tr}}[Y] \equiv \tilde{\mathbb{E}}_t[Y \mid \text{good-type trial}] \equiv \frac{\mathbb{E}[(\theta_g + J) e^{-t(\theta_g + J)}]}{\mathbb{E}[e^{-t(\theta_g + J)}]} = \theta_g + \mu_0 - t \sigma_{\text{rep}}^2.$$

We rearrange as follows

$$\begin{aligned}
\tilde{\text{Cov}}_t(\partial_\gamma Y, Y) &= \mathbb{E} \left[\partial_\gamma Y (Y - \tilde{\mathbb{E}}_t[Y]) e^{-tY} \right] \frac{1}{\mathbb{E}[e^{-tY}]} \\
&= \frac{\psi \pi_g e^{-t\bar{x}_{P,g}}}{\mathbb{E}[e^{-tY}]} \partial_\gamma \bar{x}_{P,g} (\bar{x}_{P,g} - \tilde{\mathbb{E}}_t[Y]) + \frac{(1-\psi) e^{-t\bar{x}_{P,b}}}{\mathbb{E}[e^{-tY}]} \partial_\gamma \bar{x}_{P,b} (\bar{x}_{P,b} - \tilde{\mathbb{E}}_t[Y]) \\
&= \sum_{j \in \{g,b\}} \lambda_j(t) \partial_\gamma \bar{x}_{P,j} (\bar{x}_{P,j} - \tilde{\mathbb{E}}_t[Y]) \\
&= \lambda_g(t) \partial_\gamma \bar{x}_{P,g} (\bar{x}_{P,g} - \lambda_g(t) \bar{x}_{P,g} - \lambda_b(t) \bar{x}_{P,b} - \lambda_T(t) \tilde{\mathbb{E}}_t^{g,\text{tr}}[Y]) \\
&\quad + \lambda_b(t) \partial_\gamma \bar{x}_{P,b} (\bar{x}_{P,b} - \lambda_g(t) \bar{x}_{P,g} - \lambda_b(t) \bar{x}_{P,b} - \lambda_T(t) \tilde{\mathbb{E}}_t^{g,\text{tr}}[Y]) \\
&= \lambda_g(t) \partial_\gamma \bar{x}_{P,g} \left[-\lambda_b(t) \Delta \bar{x} + \lambda_T(t) (\bar{x}_{P,g} - \tilde{\mathbb{E}}_t^{g,\text{tr}}[Y]) \right] \\
&\quad + \lambda_b(t) \partial_\gamma \bar{x}_{P,b} \left[\lambda_g(t) \Delta \bar{x} + \lambda_T(t) (\bar{x}_{P,b} - \tilde{\mathbb{E}}_t^{g,\text{tr}}[Y]) \right] \\
&= \lambda_g(t) \lambda_b(t) (\bar{x}_{P,b} - \bar{x}_{P,g}) \\
&\quad \times (\partial_\gamma \bar{x}_{P,b} - \partial_\gamma \bar{x}_{P,g}) \\
&\quad + \lambda_T(t) \sum_{j \in \{g,b\}} \lambda_j(t) \partial_\gamma \bar{x}_{P,j} (\bar{x}_{P,j} - \tilde{\mathbb{E}}_t^{g,\text{tr}}[Y]),
\end{aligned}$$

where the last two steps decompose the tilted mean over the three branches, $\tilde{\mathbb{E}}_t[Y] = \lambda_g(t) \bar{x}_{P,g} + \lambda_b(t) \bar{x}_{P,b} + \lambda_T(t) \tilde{\mathbb{E}}_t^{g,\text{tr}}[Y]$. The first term is now zero, because the additive award makes the two plaintiff reservation transfers move at the same rate, $\partial_\gamma \bar{x}_{P,b} = \partial_\gamma \bar{x}_{P,g} = \frac{1}{2} \rho_P \sigma_{\text{rep}}^2$ by Lemma 1. The second term is positive since $\bar{x}_{P,g} - \tilde{\mathbb{E}}_t^{g,\text{tr}}[Y] = (t - \frac{a_P}{2}) \sigma_{\text{rep}}^2 > 0$, and a fortiori $\bar{x}_{P,b} - \tilde{\mathbb{E}}_t^{g,\text{tr}}[Y] = \Delta + (t - \frac{a_P}{2}) \sigma_{\text{rep}}^2 > 0$, for every $t \geq a_P$ with $t > 0$. At the endpoint $t = a_P = 0$, which arises only at $\gamma = 1$, the second term and hence the covariance remain strictly positive, since the bad type's settlement exceeds the tilted trial mean by $\Delta > 0$. By $\psi \in (0, 1)$ and $\pi_g \in (0, 1)$, all three branch weights are strictly positive, so $\tilde{\text{Cov}}_t(\partial_\gamma Y, Y) > 0$ at every tilt $t \in (a_P, a_I]$ for $\gamma > \gamma_{\text{rep}}^{\text{risk}}$, and the integral over $[a_P, a_I]$ is strictly positive whether or not the single endpoint $t = a_P = 0$ contributes. Thus, the first line is strictly negative.

The second line is zero because each settlement offer is affine in γ . Differentiating $\bar{x}_{P,\theta}(\gamma)$ twice in γ gives

$$\partial_\gamma \bar{x}_{P,\theta} = \frac{1}{2} \rho_P \sigma_{\text{rep}}^2, \quad \partial_\gamma^2 \bar{x}_{P,\theta} = 0.$$

Hence $\partial_\gamma^2 Y \equiv 0$, so both terms $\gamma \tilde{\mathbb{E}}_{a_I}[\partial_\gamma^2 Y] + (1-\gamma) \tilde{\mathbb{E}}_{a_P}[\partial_\gamma^2 Y]$ equal zero.

The third line is obviously strictly negative, by the definition of a variance and the nondegenerate joint distribution of Y and $\partial_\gamma Y$.

It remains to sign the fourth line,

$$H_{a_I}[Y] + \gamma H_{a_I}[\partial_\gamma Y] - \frac{1}{\rho_I} \frac{d}{d\gamma} h_{a_I},$$

which is nonpositive on the overselling region $a_I > a_P$, without any auxiliary curvature condition. A quick sign check does not settle it. The bracket in $H_{a_I}[Y]$ has no fixed sign, since under overselling the trial branch carries the heavier weight and the weight gap can beat the value gap, and the derivative $\frac{d}{d\gamma}h_{a_I}$ picks up further terms once the dependence of the investor's exposure $a_I = \rho_I\gamma$ on γ is retained. We proceed in three stages. We first rewrite the fourth line as a sum of three terms of known sign, one negative, one positive, one nonpositive. We then show that the negative term alone outweighs the positive one, which reduces the whole question to a single scalar inequality in the acceptance probability π_g . We finally certify that inequality, the curvature of π_g being generated at a strictly steeper scale than the level term it must dominate.

Differentiating $h_{a_I} = \psi \partial_\gamma \pi_g (e^{-a_I \bar{x}_{P,g}} - \mathbb{E}[e^{-a_I(\theta_g+J)}]) / \mathbb{E}[e^{-a_I Y}]$ in γ by the product and quotient rules, keeping the pieces from the moving exposure $a_I = \rho_I\gamma$ and from the tilt in the denominator, and adding $H_{a_I}[Y] + \gamma H_{a_I}[\partial_\gamma Y]$, a collection of terms gives

$$\begin{aligned} & H_{a_I}[Y] + \gamma H_{a_I}[\partial_\gamma Y] - \frac{1}{\rho_I} \frac{d}{d\gamma} h_{a_I} \\ &= - \frac{\psi \partial_\gamma^2 \pi_g}{\rho_I} \frac{e^{-a_I \bar{x}_{P,g}} - \mathbb{E}[e^{-a_I(\theta_g+J)}]}{\mathbb{E}[e^{-a_I Y}]} \\ & \quad + \frac{1}{\rho_I} h_{a_I}^2 \\ & \quad + \frac{2\psi \partial_\gamma \pi_g}{\mathbb{E}[e^{-a_I Y}]} \left[e^{-a_I \bar{x}_{P,g}} (\bar{x}_{P,g} + \gamma \partial_\gamma \bar{x}_{P,g} - \tilde{\mathbb{E}}_{a_I}[Y + \gamma \partial_\gamma Y]) \right. \\ & \quad \left. + \mathbb{E}[e^{-a_I(\theta_g+J)}] (\tilde{\mathbb{E}}_{a_I}[Y + \gamma \partial_\gamma Y] - \theta_g - \mu_0 + a_I \sigma_{\text{rep}}^2) \right]. \end{aligned}$$

The first term is negative: $\partial_\gamma^2 \pi_g < 0$ by Lemma 1 and $e^{-a_I \bar{x}_{P,g}} < \mathbb{E}[e^{-a_I(\theta_g+J)}]$ under overselling, so the product of these two negative factors is positive and the leading minus sign makes the term negative. The second term is a square and hence positive. The third term is nonpositive. The tilted average $\tilde{\mathbb{E}}_{a_I}[Y + \gamma \partial_\gamma Y]$ is a convex combination of the good type's settlement value $\bar{x}_{P,g} + \gamma \partial_\gamma \bar{x}_{P,g}$, the bad type's settlement value $\bar{x}_{P,b} + \gamma \partial_\gamma \bar{x}_{P,b}$, which is strictly larger by (2), the two slopes now being equal, so that the two settlement values differ by exactly $\Delta > 0$, and the good type's tilted trial value $\theta_g + \mu_0 - a_I \sigma_{\text{rep}}^2$, which falls short of the good type's settlement value by $(a_I - \frac{a_P}{2}) \sigma_{\text{rep}}^2 + \gamma \partial_\gamma \bar{x}_{P,g} > 0$. The average therefore never drops below the trial value. If the average is at most the settlement value, both summands in the bracket are nonnegative. If it exceeds the settlement value, the average exceeds the trial value by at least its excess over the settlement value. Since $\mathbb{E}[e^{-a_I(\theta_g+J)}] > e^{-a_I \bar{x}_{P,g}}$, the bracket is then at least $(\mathbb{E}[e^{-a_I(\theta_g+J)}] - e^{-a_I \bar{x}_{P,g}})$ times the excess of the average over the settlement value, which is positive. Either way the bracket is nonnegative, and multiplied by $\partial_\gamma \pi_g < 0$ the third term is nonpositive.

It remains to show that the first term dominates the second. The two share the positive

factor $\psi(\mathbb{E}[e^{-a_I(\theta_g+J)}] - e^{-a_I\bar{x}_{P,g}})/(\rho_I \mathbb{E}[e^{-a_I Y}])$, so it suffices to show the following inequality

$$\psi(\partial_\gamma \pi_g)^2 (\mathbb{E}[e^{-a_I(\theta_g+J)}] - e^{-a_I\bar{x}_{P,g}}) \leq |\partial_\gamma^2 \pi_g| \mathbb{E}[e^{-a_I Y}].$$

Two facts from the proof of Lemma 1 deliver it. Write $Z \equiv e^{-\rho_D(\bar{x}_D, b - \bar{x}_{P,g})} \in (0, 1)$ and $r \equiv \frac{1}{2}\rho_D\rho_P\sigma_{\text{rep}}^2/(1-Z) > 0$. That proof gives $\partial_\gamma \log(1 - \pi_g) = r$ and $\partial_\gamma^2 \log(1 - \pi_g) = r^2 Z$, so that

$$|\partial_\gamma \pi_g| = (1 - \pi_g) r, \quad |\partial_\gamma^2 \pi_g| = (1 - \pi_g)(r^2 + r^2 Z) = (1 - \pi_g) r^2(1 + Z).$$

Bounding $\mathbb{E}[e^{-a_I Y}]$ from below by the good type's trial branch alone, $\mathbb{E}[e^{-a_I Y}] \geq \psi(1 - \pi_g) \mathbb{E}[e^{-a_I(\theta_g+J)}]$,

$$\begin{aligned} \psi(\partial_\gamma \pi_g)^2 (\mathbb{E}[e^{-a_I(\theta_g+J)}] - e^{-a_I\bar{x}_{P,g}}) &< \psi(\partial_\gamma \pi_g)^2 \mathbb{E}[e^{-a_I(\theta_g+J)}] \\ &\leq \frac{(\partial_\gamma \pi_g)^2}{1 - \pi_g} \mathbb{E}[e^{-a_I Y}] \\ &= (1 - \pi_g) r^2 \mathbb{E}[e^{-a_I Y}] \\ &< |\partial_\gamma^2 \pi_g| \mathbb{E}[e^{-a_I Y}]. \end{aligned}$$

The first inequality drops the positive term $e^{-a_I\bar{x}_{P,g}}$. The second is the branch bound. The equality inserts $|\partial_\gamma \pi_g| = (1 - \pi_g)r$. The last inequality is $|\partial_\gamma^2 \pi_g| = (1 - \pi_g)r^2(1 + Z)$ with $Z > 0$. The first term therefore strictly dominates the second, and the fourth line is strictly negative.

Together with the first three lines, $U_{P,\text{rep}}'' < 0$ throughout $(\gamma_{\text{rep}}^{\text{risk}}, 1)$, so $U_{P,\text{rep}}$ is strictly concave there and the maximizer is unique.

(e) *Show that the objective increases below the benchmark.* Finally, we show that $U_{P,\text{rep}}$ is increasing in γ for $\gamma < \gamma_{\text{rep}}^{\text{risk}}$. The plaintiff's own term vanishes for every γ , $h_{a_P} \equiv 0$. Pricing the good type's trial payoff at his own exposure a_P makes the certainty equivalent $\bar{x}_{P,g}$ worth exactly the trial itself, so the gap h_{a_P} measures is identically zero. The three remaining terms are each strictly positive for $\gamma \in (0, \gamma_{\text{rep}}^{\text{risk}})$. At $\gamma = 0$, the third term vanishes with the tilt $a_I = 0$, while the first two remain strictly positive, so the conclusion below is unaffected. First, the tilted mean of the proceeds falls as the exposure that sets the tilt rises: its derivative is minus the tilted variance, $\partial_t \tilde{\mathbb{E}}_t[Y] = -\tilde{\text{Var}}_t(Y) < 0$, so the less-exposed investor ($a_I < a_P$) discounts the proceeds less heavily, $\tilde{\mathbb{E}}_{a_I}[Y] > \tilde{\mathbb{E}}_{a_P}[Y]$. Second, a larger share can only raise the proceeds. Every plaintiff reservation transfer increases in γ at a strictly positive rate (Lemma 1) while the good type's trial payoff is unchanged, so the proceeds rise branch by branch and hence so does their average under either tilt. Third, the same under-exposure signs the investor's term. $\bar{x}_{P,g}$ is set at the plaintiff's high exposure, but at the investor's lower exposure the good type's trial payoff is

worth strictly more than that fixed amount, so the gap inside h_{a_I} is positive. Since selling more lowers the plaintiff's probability of accepting the good type's offer ($\partial_\gamma \pi_g(\gamma) < 0$, Lemma 1), h_{a_I} itself is negative and, entering the plaintiff's marginal value with a minus sign, contributes positively, $-\frac{1}{\rho_I} h_{a_I} > 0$. Thus $U_{P,\text{rep}}'(\gamma) > 0$ for every $\gamma \in [0, \gamma_{\text{rep}}^{\text{risk}})$, and since the derivative is still positive at $\gamma_{\text{rep}}^{\text{risk}}$, the objective is strictly increasing up to that point and no $\gamma \leq \gamma_{\text{rep}}^{\text{risk}}$ can be optimal.

(f) *Conclude.* Collecting steps (b) to (e), $U_{P,\text{rep}}$ is strictly increasing on $[0, \gamma_{\text{rep}}^{\text{risk}}]$ and strictly concave on $(\gamma_{\text{rep}}^{\text{risk}}, 1)$. With its value at one defined by continuous extension, its maximizer γ_{rep} on $[0, 1]$ is therefore unique and lies strictly above $\gamma_{\text{rep}}^{\text{risk}}$. Hence $\gamma_{\text{rep}}^{\text{risk}} < \gamma_{\text{rep}} \leq 1$, which is the statement of the proposition. That the plaintiff always finances is then trivial. Risk sharing alone makes a positive share optimal, $\gamma_{\text{rep}}^{\text{risk}} = \rho_P/(\rho_P + \rho_I) > 0$, so $\gamma_{\text{rep}} > \gamma_{\text{rep}}^{\text{risk}} > 0$. $\square$

Proof of Proposition 3

Fix a cap $\bar{\gamma} \in (0, 1)$ and maximize the plaintiff's objective over the capped interval. We first derive the threshold from the limiting marginal value of selling, then use its sign to locate the capped optimum.

(a) *Compute the limiting marginal value.* Under Assumption 1, the bargaining outcome at full sale is defined by continuous extension. We use $U_{P,\text{rep}}'(1)$ only as the limit of the marginal value as the share approaches one from below. Recall from step (b) of the proof of Proposition 2 that

$$U_{P,\text{rep}}'(\gamma) = \tilde{\mathbb{E}}_{a_I}[Y] - \tilde{\mathbb{E}}_{a_P}[Y] + \gamma \tilde{\mathbb{E}}_{a_I}[\partial_\gamma Y] + (1 - \gamma) \tilde{\mathbb{E}}_{a_P}[\partial_\gamma Y] - \frac{1}{\rho_I} h_{a_I}(\gamma) - \frac{1}{\rho_P} h_{a_P}(\gamma).$$

Considering the convergence of $\gamma \rightarrow 1$ for each term individually, we find the following, using the fact that as $a_I \rightarrow \rho_I$, $a_P \rightarrow 0$, and that $h_{a_P} \equiv 0$ at every share, by step (c) of that proof,

$$\begin{aligned} \tilde{\mathbb{E}}_{a_I}[Y] - \tilde{\mathbb{E}}_{a_P}[Y] &\longrightarrow \tilde{\mathbb{E}}_{\rho_I}[Y] - \mathbb{E}[Y], \\ \gamma \tilde{\mathbb{E}}_{a_I}[\partial_\gamma Y] &\longrightarrow \tilde{\mathbb{E}}_{\rho_I}[\partial_\gamma Y], \\ (1 - \gamma) \tilde{\mathbb{E}}_{a_P}[\partial_\gamma Y] &\longrightarrow 0, \\ h_{a_I}(\gamma) &\longrightarrow h_{a_I}(1) = \psi \partial_\gamma \pi_g(1) \frac{e^{-\rho_I \bar{x}_{P,g}(1)} - \mathbb{E}[e^{-\rho_I(\theta_g + J)}]}{\mathbb{E}[e^{-\rho_I Y}]}. \end{aligned}$$

We can therefore write

$$U_{P,\text{rep}}'(1) = \underbrace{\tilde{\mathbb{E}}_{\rho_I}[Y] - \mathbb{E}[Y]}_{< 0} + \tilde{\mathbb{E}}_{\rho_I}[\partial_\gamma Y] - \frac{1}{\rho_I} h_{a_I}(1),$$

and more explicitly

$$\begin{aligned}
& \frac{1}{\mathbb{E}[e^{-\rho_I Y}]} \\
& \times \left[(1 - \psi)(\bar{x}_{P,b} + \partial_\gamma \bar{x}_{P,b}) e^{-\rho_I \bar{x}_{P,b}} \right. \\
& \quad + \psi \pi_g (\bar{x}_{P,g} + \partial_\gamma \bar{x}_{P,g}) e^{-\rho_I \bar{x}_{P,g}} \\
& \quad \left. + \psi(1 - \pi_g) \mathbb{E}[(\theta_g + J) e^{-\rho_I(\theta_g + J)}] \right] \\
& - \left[(1 - \psi) \bar{x}_{P,b} + \psi \pi_g \bar{x}_{P,g} + \psi(1 - \pi_g) \mathbb{E}[\theta_g + J] \right] \\
& - \frac{\psi \partial_\gamma \pi_g(1)}{\rho_I} \frac{e^{-\rho_I \bar{x}_{P,g}} - \mathbb{E}[e^{-\rho_I(\theta_g + J)}]}{\mathbb{E}[e^{-\rho_I Y}]}.
\end{aligned}$$

(b) *Locate the threshold.* The sign of the limiting marginal value depends on investor risk aversion. We locate its unique zero in ρ_I . Since the investor plays no role in the bargaining stage, none of the primitives entering this expression, the offers $\bar{x}_{P,\theta}(1)$, the acceptance probability π_g and its slope $\partial_\gamma \pi_g(1)$, and hence the distribution of Y , depends on ρ_I . Holding all other primitives fixed, the limit derivative $U_{P,\text{rep}}'(1)$ therefore varies only through ρ_I , and we look for a threshold on it. In the limit, the plaintiff retains no exposure, $a_P = 0$, so the offers reduce to the conditional means, $\bar{x}_{P,\theta}(1) = \theta + \mu_0$. In particular, the good type's offer coincides with the expected trial award, $\bar{x}_{P,g} = \mathbb{E}[\theta_g + J]$, the offer gap $\bar{x}_{P,b} - \bar{x}_{P,g} = \Delta$ is strictly positive without further assumption, and the slopes remain $\partial_\gamma \bar{x}_{P,\theta} = \frac{1}{2} \rho_P \sigma_{\text{rep}}^2$. Since the trial award is conditionally normal, $\mathbb{E}[e^{-\rho_I(\theta_g + J)}] = e^{-\rho_I(\theta_g + \mu_0) + \sigma_{\text{rep}}^2 \rho_I^2 / 2}$ and $\mathbb{E}[(\theta_g + J) e^{-\rho_I(\theta_g + J)}] = (\theta_g + \mu_0 - \sigma_{\text{rep}}^2 \rho_I) e^{-\rho_I(\theta_g + \mu_0) + \sigma_{\text{rep}}^2 \rho_I^2 / 2}$. Multiplying the explicit expression above by the positive factor $\mathbb{E}[e^{-\rho_I Y}] e^{\rho_I(\theta_g + \mu_0)}$, which leaves the sign of $U_{P,\text{rep}}'(1)$ unchanged, and collecting the three branches therefore gives

$$\begin{aligned}
& \mathbb{E}[e^{-\rho_I Y}] e^{\rho_I(\theta_g + \mu_0)} U_{P,\text{rep}}'(1) \\
& = (1 - \psi) \left[\psi \Delta + \frac{1}{2} \rho_P \sigma_{\text{rep}}^2 \right] e^{-\rho_I \Delta} \\
& \quad + \psi \pi_g \left[\frac{1}{2} \rho_P \sigma_{\text{rep}}^2 - (1 - \psi) \Delta \right] \\
& \quad - \psi(1 - \pi_g) \left[\sigma_{\text{rep}}^2 \rho_I + (1 - \psi) \Delta \right] e^{\sigma_{\text{rep}}^2 \rho_I^2 / 2} \\
& \quad + \frac{\psi \partial_\gamma \pi_g(1)}{\rho_I} \left(e^{\sigma_{\text{rep}}^2 \rho_I^2 / 2} - 1 \right),
\end{aligned}$$

where the last term is nonpositive since $\partial_\gamma \pi_g(1) < 0$ by Lemma 1. This rescaled derivative is strictly decreasing in ρ_I . Differentiating term by term,

$$\begin{aligned}
& \frac{d}{d\rho_I} \left(\mathbb{E}[e^{-\rho_I Y}] e^{\rho_I(\theta_g + \mu_0)} U_{P,\text{rep}}'(1) \right) \\
& = -(1 - \psi) \Delta \left[\psi \Delta + \frac{1}{2} \rho_P \sigma_{\text{rep}}^2 \right] e^{-\rho_I \Delta}
\end{aligned}$$

$$\begin{aligned}
& -\psi(1-\pi_g)\sigma_{\text{rep}}^2\left[1+\sigma_{\text{rep}}^2\rho_I^2+(1-\psi)\Delta\rho_I\right]e^{\sigma_{\text{rep}}^2\rho_I^2/2} \\
& +\psi\partial_\gamma\pi_g(1)\frac{e^{\sigma_{\text{rep}}^2\rho_I^2/2}(\sigma_{\text{rep}}^2\rho_I^2-1)+1}{\rho_I^2}.
\end{aligned}$$

The first two terms are strictly negative. In the third, the fraction is nonnegative. The function $e^z(2z-1)+1$ vanishes at $z=0$ and increases on $z\geq 0$, its derivative being $e^z(2z+1)>0$, and the numerator is its value at $z=\sigma_{\text{rep}}^2\rho_I^2/2$. The sign of $\partial_\gamma\pi_g(1)$ then makes the third term nonpositive as well, and the rescaled derivative decreases throughout. This last term is precisely the one whose sign is inaccessible before the rescaling. Clearing the tilting denominator $\mathbb{E}[e^{-\rho_I Y}]$ first reduces the acceptance channel to the elementary one-variable bound just used. As $\rho_I\rightarrow 0^+$, the acceptance term is of order ρ_I and vanishes, so

$$\lim_{\rho_I\rightarrow 0^+}\mathbb{E}[e^{-\rho_I Y}]e^{\rho_I(\theta_g+\mu_0)}U_{P,\text{rep}}'(1)=\frac{1}{2}\rho_P\sigma_{\text{rep}}^2(1-\psi+\psi\pi_g)=\mathbb{E}[\partial_\gamma Y]>0,$$

where the Δ -terms cancel across the three branches since $\psi=\psi\pi_g+\psi(1-\pi_g)$: a risk-neutral investor absorbs the whole claim at no discount, and only the first-order bargaining gain remains. As $\rho_I\rightarrow\infty$, the Gaussian trial branch dominates and the rescaled derivative diverges to $-\infty$, as the tilted valuation of the unbounded trial award collapses. A strictly decreasing function with these limits crosses zero exactly once. There is hence a unique $\bar{\rho}_I$ such that $U_{P,\text{rep}}'(1)>0$ for $\rho_I<\bar{\rho}_I$, $U_{P,\text{rep}}'(1)=0$ at $\rho_I=\bar{\rho}_I$, and $U_{P,\text{rep}}'(1)<0$ for $\rho_I>\bar{\rho}_I$.

(c) *Locate the capped optimum.* We now maximize over $[0,\bar{\gamma}]$. By the proof of Proposition 2, $U_{P,\text{rep}}'>0$ on $[0,\gamma_{\text{rep}}^{\text{risk}}]$ and $U_{P,\text{rep}}$ is strictly concave on $(\gamma_{\text{rep}}^{\text{risk}},1)$, so $U_{P,\text{rep}}'$ is strictly decreasing there. $U_{P,\text{rep}}'$ is continuous on $[0,1]$, its value at one being the limit computed above.

Suppose $\rho_I\leq\bar{\rho}_I$. The limiting marginal value is nonnegative. Strict decrease of the derivative above the risk-minimizing share gives

$$U_{P,\text{rep}}'(\gamma)>U_{P,\text{rep}}'(1)\geq 0, \quad \gamma\in(\gamma_{\text{rep}}^{\text{risk}},1).$$

The strict inequality follows from strict concavity above the risk-minimizing share.

The weak inequality follows from the threshold characterization in step (b).

Below and at the risk-minimizing share, the derivative is positive by the proof of Proposition 2. Thus the objective is strictly increasing throughout $[0,1)$. Its unique maximizer on the capped interval is therefore $\gamma_{\text{rep}}=\bar{\gamma}$, including at the threshold. $\square$

Proof of Lemma 2

From here on we are in the general model of litigation finance, with a continuum of informed investors in both markets. Only the observability of the market price to the litigants differs.

We work within the class of symmetric issue-wise bargaining equilibria; the continuum of issues is part of the model rather than a limit of finite games. The case is a unit mass of infinitesimal issues $k \in [0, 1]$. Its proceeds are Y ; with financing revenue sunk at the bargaining stage, the plaintiff's retained cash flow is $(1 - \gamma)Y$ and the defendant's is $-Y$. Conditional on the share sold and the belief about the common court factor J , the defendant's offer depends only on the issue's type and the plaintiff's acceptance probability only on the offer, with both rules common across issues. The exact law of large numbers on the maintained Fubini extension [Sun, 2006] makes all aggregates, including the trial mass T , deterministic conditional on public information. A single issue has measure zero, so both litigants take T as given on every issue. The proceeds are

$$Y = \int_0^1 [\pi_k x_k + (1 - \pi_k) \theta_k] dk + TJ.$$

Thus, Y is normal with variance $T^2 \sigma^2$. Because the sale revenue is sunk at the bargaining stage, for $\gamma < 1$ the plaintiff ranks outcomes by the certainty equivalent of his retained stake per unit retained:

$$\frac{(1 - \gamma) \mathbb{E}Y - \frac{1}{2} \rho_P (1 - \gamma)^2 T^2 \sigma^2}{1 - \gamma} = \mathbb{E}Y - \frac{1}{2} a_P T^2 \sigma^2.$$

The defendant's certainty equivalent is $-\mathbb{E}Y - \frac{1}{2} \rho_D T^2 \sigma^2$. The argument below covers $\gamma < 1$; at $\gamma = 1$, Assumption 1 selects its limit, so the conclusions extend to full sale.

We next derive the issue-level payoffs. Moving a mass $\varepsilon > 0$ of type- θ issues from settlement at x to trial raises the trial mass to $T + \varepsilon$ and changes the plaintiff's certainty equivalent by

$$\begin{aligned} & \left[\mathbb{E}Y + \varepsilon(\theta + \mu - x) - \frac{1}{2} a_P (T + \varepsilon)^2 \sigma^2 \right] - \left[\mathbb{E}Y - \frac{1}{2} a_P T^2 \sigma^2 \right] \\ &= \varepsilon(\theta + \mu - x) - \frac{1}{2} a_P (2T\varepsilon + \varepsilon^2) \sigma^2 \\ &= \varepsilon \left[\theta + \mu - x - a_P T \sigma^2 \right] - \frac{1}{2} a_P \sigma^2 \varepsilon^2. \end{aligned}$$

The defendant's certainty equivalent changes by

$$\begin{aligned} & \left[-\mathbb{E}Y - \varepsilon(\theta + \mu - x) - \frac{1}{2} \rho_D (T + \varepsilon)^2 \sigma^2 \right] - \left[-\mathbb{E}Y - \frac{1}{2} \rho_D T^2 \sigma^2 \right] \\ &= \varepsilon \left[x - \theta - \mu - \rho_D T \sigma^2 \right] - \frac{1}{2} \rho_D \sigma^2 \varepsilon^2. \end{aligned}$$

A single issue leaves aggregates unchanged, so its payoff is the limiting change per unit of mass. The first-order terms vanish at

$$\begin{aligned}\bar{x}_{P,\theta} &= \theta + \mu - a_P T \sigma^2, \\ \bar{x}_{D,\theta} &= \theta + \mu + \rho_D T \sigma^2.\end{aligned}$$

Thus, on an issue the plaintiff values settlement at the transfer and trial at $\bar{x}_{P,\theta}$, while the defendant pays the transfer on settlement and $\bar{x}_{D,\theta}$ at trial. The same calculation applies to $\varepsilon < 0$; the negative second-order terms imply that strict local preferences survive small positive-mass moves and that either litigant strictly loses from any positive-mass move when the first-order term vanishes. If the plaintiff attributes an offer to the good type with probability $\hat{\psi}$, Bayes' rule identifies this posterior with the good-type fraction among the issues receiving the offer. His value of trial on such an issue is the corresponding average of his two reservation values, since the type uncertainty is cross-sectional and carries no aggregate risk premium.

Fix $T > 0$. On each issue, the litigants play the bargaining game of Proposition 1 with the linear payoffs just derived. Its reservation values are ordered as follows.

$$\begin{aligned}\bar{x}_{D,\theta} - \bar{x}_{P,\theta} &= (\rho_D + a_P) T \sigma^2 > 0, \\ \bar{x}_{P,b} - \bar{x}_{P,g} &= \bar{x}_{D,b} - \bar{x}_{D,g} = \Delta > 0.\end{aligned}$$

These are the order facts (1) and (2) of the baseline model, with $T\sigma^2$ in place of half the variance. Since the pooled reservation lies strictly between the type reservations, the proof of Proposition 1 applies with linear instead of exponential defendant payoffs. The unique issue-wise outcome surviving D1 is therefore separating: the bad type offers $\bar{x}_{P,b}$ and is accepted, while the good type offers $\bar{x}_{P,g}$ and is accepted with the fraction that makes the bad type indifferent to mimicking:

$$-\bar{x}_{P,b} = \pi_g(-\bar{x}_{P,g}) + (1 - \pi_g)(-\bar{x}_{D,b}) \iff \pi_g = \frac{\bar{x}_{D,b} - \bar{x}_{P,b}}{\bar{x}_{D,b} - \bar{x}_{P,g}} = \frac{(\rho_D + a_P) T \sigma^2}{\Delta + (\rho_D + a_P) T \sigma^2}.$$

Since $T > 0$, $\pi_g \in (0, 1)$. Equilibrium requires the trial mass to equal the mass of rejected good issues:

$$T = \psi(1 - \pi_g) = \frac{\psi \Delta}{\Delta + (\rho_D + a_P) \sigma^2 T}.$$

Hence,

$$(\rho_D + a_P) \sigma^2 T^2 + \Delta T - \psi \Delta = 0. \tag{4}$$

Its roots have opposite signs, and the positive root is

$$\begin{aligned} T &= \frac{-\Delta + \sqrt{\Delta^2 + 4\psi\Delta(\rho_D + a_P)\sigma^2}}{2(\rho_D + a_P)\sigma^2} \\ &= \frac{2\psi\Delta}{\Delta + \sqrt{\Delta^2 + 4\psi\Delta(\rho_D + a_P)\sigma^2}}. \end{aligned}$$

Because the square root exceeds Δ , this root lies in $(0, \psi)$ and supports the separating equilibrium above. If $T = 0$, every issue settles; incentive compatibility then requires both types to make the same offer x , while sequential rationality requires $x \geq \bar{\theta} + \mu$. The good type's willingness to settle requires $x \leq \theta_g + \mu < \bar{\theta} + \mu$, a contradiction. This proves (i).

It remains to rule out deviations of positive mass. It suffices to consider deterministic profiles, since a random deviation cannot outperform the best profile in its support. Write the induced trial mass as $T + \varepsilon$. If the defendant deviates to offers x_k that are accepted with fractions π_k , her certainty equivalent is

$$\begin{aligned} & - \int_0^1 [\pi_k x_k + (1 - \pi_k)(\theta_k + \mu)] dk - \frac{1}{2} \rho_D (T + \varepsilon)^2 \sigma^2 \\ &= - \int_0^1 [\pi_k x_k + (1 - \pi_k)(\theta_k + \mu)] dk - \rho_D T \sigma^2 (T + \varepsilon) + \frac{1}{2} \rho_D T^2 \sigma^2 - \frac{1}{2} \rho_D \sigma^2 \varepsilon^2 \\ &= - \int_0^1 [\pi_k x_k + (1 - \pi_k) \bar{x}_{D, \theta_k}] dk + \frac{1}{2} \rho_D T^2 \sigma^2 - \frac{1}{2} \rho_D \sigma^2 \varepsilon^2. \end{aligned}$$

By the issue-level optimality established above, the negative integrand is at most its value at the type's equilibrium offer, and the final term is nonpositive; both bounds are attained by the equilibrium profile. If instead the plaintiff deviates to acceptance rates π_k , each on-path offer reveals the issue's type and equals the corresponding plaintiff reservation value, so his certainty equivalent per unit retained is

$$\begin{aligned} & \int_0^1 [\pi_k \bar{x}_{P, \theta_k} + (1 - \pi_k)(\theta_k + \mu)] dk - \frac{1}{2} a_P (T + \varepsilon)^2 \sigma^2 \\ &= \int_0^1 [\pi_k \bar{x}_{P, \theta_k} + (1 - \pi_k)(\theta_k + \mu)] dk - a_P T \sigma^2 (T + \varepsilon) + \frac{1}{2} a_P T^2 \sigma^2 - \frac{1}{2} a_P \sigma^2 \varepsilon^2 \\ &= \int_0^1 \bar{x}_{P, \theta_k} dk + \frac{1}{2} a_P T^2 \sigma^2 - \frac{1}{2} a_P \sigma^2 \varepsilon^2. \end{aligned}$$

Only the final term depends on the deviation, and it is nonpositive. Hence neither litigant gains from a positive-mass deviation.

For the distribution of proceeds, the good type settles on mass $\psi\pi_g$, the bad type on mass $1 - \psi$, and the remaining mass T is tried, so

$$Y = \psi\pi_g \bar{x}_{P, g} + (1 - \psi) \bar{x}_{P, b} + T(\theta_g + J).$$

Inserting the reservation values above, and using that the settled and the tried good issues together have mass ψ , gives

$$Y = \bar{\theta} + (1 - T)\mu - a_P T \sigma^2 (1 - T) + T J. \quad (5)$$

Equation (5) yields the normal distribution and moments in part (ii).

For the comparative static in the share sold, implicit differentiation of (4), using $\partial_\gamma a_P = -\rho_P$, gives

$$\partial_\gamma T = \frac{\rho_P \sigma^2 T^2}{\Delta + 2(\rho_D + a_P) \sigma^2 T} = \frac{\rho_P}{\rho_D + a_P} \frac{T(\psi - T)}{2\psi - T} > 0.$$

Here the second equality uses (4), and the sign follows from $0 < T < \psi$. The increase in the trial mass only partly offsets the plaintiff's lower exposure. The first expression for the derivative gives

$$\begin{aligned} a_P \partial_\gamma T &= \frac{a_P \rho_P \sigma^2 T^2}{\Delta + 2(\rho_D + a_P) \sigma^2 T} < \frac{1}{2} \rho_P T, \\ \partial_\gamma (a_P T) &= -\rho_P T + a_P \partial_\gamma T < -\frac{1}{2} \rho_P T < 0. \end{aligned}$$

The first inequality follows because $2a_P \sigma^2 T < \Delta + 2(\rho_D + a_P) \sigma^2 T$; the remaining signs follow from $T, \rho_P > 0$.

For the comparative static in belief precision, hold the share fixed and use $\tau = 1/\sigma^2$ and $\partial_\tau \sigma^2 = -\sigma^4$ in (4) to obtain

$$\partial_\tau T = \frac{(\rho_D + a_P) \sigma^4 T^2}{\Delta + 2(\rho_D + a_P) \sigma^2 T} = \sigma^2 \frac{T(\psi - T)}{2\psi - T} > 0.$$

Here the second equality uses (4), and the sign follows from $0 < T < \psi$ and $\sigma^2 > 0$. These two comparative statics prove (iii). $\square$

Proof of Lemma 3

Fix $m \in \{\text{pri}, \text{pub}\}$ and write $p = p_m$, $T = T_m$, $\mu = \mu_m$ and $\sigma^2 = \sigma_m^2$. By Lemma 2, the security pays $Y = \bar{\theta} + (1 - T)\mu - a_P T(1 - T)\sigma^2 + T J$, so informed investors absorb the exposure $T\gamma - z$. We seek an affine, non-revealing price that clears the market; full revelation would make residual variance zero and demand indeterminate. Define the price per unit of exposure by $\tilde{p} \equiv (p - \bar{\theta} - (1 - T)\mu + a_P T(1 - T)\sigma^2)/T$. Since investor i 's trading gain is $T q_i(s_i, p)(J - \tilde{p})$, CARA-normal demand is

$$T q_i(s_i, p) = \frac{\mathbb{E}[J \mid s_i, p] - \tilde{p}}{\rho_I \text{Var}[J \mid s_i, p]}.$$

To establish existence, conjecture that the price is affine and strictly increasing in $\xi = J + \frac{\rho_I}{\tau_e} z$. Then observing p is equivalent to observing ξ , where $\xi | J \sim \mathcal{N}(J, 1/\tau_\xi)$ and $\tau_\xi = \tau_e^2 \tau_z / \rho_I^2$. Normal updating gives

$$\mathbb{E}[J | s_i, \xi] = \frac{\tau_{\text{pri}}\mu_0 + \tau_e s_i + \tau_\xi \xi}{\tau_{\text{pub}} + \tau_e}, \quad \text{Var}[J | s_i, \xi] = \frac{1}{\tau_{\text{pub}} + \tau_e},$$

using $\tau_{\text{pub}} = \tau_{\text{pri}} + \tau_\xi$. Integrating demand, using $\int s_i di = J$, and imposing clearing yields

$$\frac{1}{\rho_I} \left[\tau_{\text{pri}}\mu_0 + \tau_e J + \tau_\xi \xi - (\tau_{\text{pub}} + \tau_e) \tilde{p} \right] = T\gamma - z.$$

Since $\tau_e J + \rho_I z = \tau_e \xi$, this gives

$$\tilde{p} = \frac{\tau_{\text{pri}}\mu_0 + (\tau_e + \tau_\xi)\xi}{\tau_{\text{pub}} + \tau_e} - \frac{\rho_I}{\tau_{\text{pub}} + \tau_e} T\gamma,$$

and the posterior is $J | \xi \sim \mathcal{N}(\mu_{\text{pub}}, 1/\tau_{\text{pub}})$, where $\mu_{\text{pub}} = (\tau_{\text{pri}}\mu_0 + \tau_\xi \xi)/\tau_{\text{pub}}$ and $\tau_{\text{pub}} = \tau_{\text{pri}} + \tau_\xi$. Substitution gives $\partial_\xi p = (1 - T)\tau_\xi/\tau_{\text{pub}} + T(\tau_e + \tau_\xi)/(\tau_{\text{pub}} + \tau_e) > 0$ in the public market and $\partial_\xi p = T(\tau_e + \tau_\xi)/(\tau_{\text{pub}} + \tau_e) > 0$ in the private market, confirming the conjecture. Given γ , T is fixed by the litigants' belief.

For uniqueness, let $p = a_1 + a_2 J + a_3 z$ be any linear equilibrium price. If $a_2 = 0$, aggregate demand still contains $\tau_e J / \rho_I$, so clearing makes p depend on J , a contradiction. Thus $a_2 \neq 0$; non-revelation requires $a_3 \neq 0$, and the price reveals $\zeta \equiv J + (a_3/a_2)z$, with precision $\tau_\zeta = \tau_z a_2^2 / a_3^2$. Repeating the clearing calculation gives

$$(\tau_{\text{pri}} + \tau_e + \tau_\zeta) \tilde{p} = \tau_{\text{pri}}\mu_0 + \tau_e J + \rho_I z + \tau_\zeta \zeta - \rho_I T\gamma.$$

Because the price depends only on ζ , $\tau_e J + \rho_I z$ must be proportional to $J + (a_3/a_2)z$. Hence $a_3/a_2 = \rho_I/\tau_e$, so $\zeta = \xi$, and the construction above uniquely determines (a_1, a_2, a_3) .

Finally, since $\mathbb{E}\xi = \mu_0$, we have $\mathbb{E}\mu_m = \mu_0$ and $\mathbb{E}\tilde{p}_m = \mu_0 - \rho_I T_m \gamma / (\tau_{\text{pub}} + \tau_e)$. Thus

$$\begin{aligned} \mathbb{E}[p_m] &= \bar{\theta} + (1 - T_m)(\mu_0 - a_P T_m \sigma_m^2) + T_m \left(\mu_0 - \frac{\rho_I}{\tau_{\text{pub}} + \tau_e} T_m \gamma \right) \\ &= \bar{\theta} + \mu_0 - a_P T_m (1 - T_m) \sigma_m^2 - \frac{\rho_I}{\tau_{\text{pub}} + \tau_e} T_m^2 \gamma. \end{aligned}$$

By the fee rule, the plaintiff receives $(1 - \phi)\mathbb{E}[p_m]$ per unit and the underwriter's expected profit is $\phi\gamma\mathbb{E}[p_m]$, which completes the proof. $\square$

Proof of Proposition 4

By Lemma 3, p_{UW} is deterministic and Y is normal under the prior. Its variance is

$$\begin{aligned}\text{Var}(Y) &= \mathbb{E}[\text{Var}(Y \mid p_{\text{pub}})] + \text{Var}(\mathbb{E}[Y \mid p_{\text{pub}}]) \\ &= T^2 \sigma_{\text{pub}}^2 + \text{Var}(\mu_{\text{pub}}) = T^2 \sigma_{\text{pub}}^2 + \sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2.\end{aligned}$$

This equality follows from the law of total variance and Lemma 2(ii). The normal certainty equivalent is therefore

$$\begin{aligned}U_{P,\text{pub}}(\gamma) &= \gamma p_{\text{UW}} + (1 - \gamma) \mathbb{E}Y - \frac{1}{2} \rho_P (1 - \gamma)^2 \text{Var}(Y) \\ &= (1 - \phi) \gamma \mathbb{E}[p_{\text{pub}}] + (1 - \gamma) \mathbb{E}Y - \frac{1}{2} \rho_P (1 - \gamma)^2 [T^2 \sigma_{\text{pub}}^2 + \sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2] \\ &= \mathbb{E}Y - \frac{1}{2} [\tilde{\rho}_I^{\text{pub}} \gamma^2 + \rho_P (1 - \gamma)^2] T^2 \sigma_{\text{pub}}^2 \\ &\quad - \frac{1}{2} \rho_P (1 - \gamma)^2 (\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2) - \phi \gamma \mathbb{E}[p_{\text{pub}}].\end{aligned}$$

Here Lemma 3 gives $p_{\text{UW}} = (1 - \phi) \mathbb{E}[p_{\text{pub}}]$ and $\mathbb{E}[p_{\text{pub}}] = \mathbb{E}Y - \frac{1}{2} \tilde{\rho}_I^{\text{pub}} \sigma_{\text{pub}}^2 T^2 \gamma$. We next record the properties of the trial mass. Lemma 2(i),(iii) and the derivation of the comparative static in the share sold in its proof give $T \in (0, \psi)$, $\partial_\gamma T > 0$, and

$$\rho_P T - a_P \partial_\gamma T > \frac{1}{2} \rho_P T > 0.$$

Using Lemma 2(ii), differentiating the objective and substituting the expected-price formula gives

$$\begin{aligned}U_{P,\text{pub}}'(\gamma) &= \sigma_{\text{pub}}^2 T (a_P - \tilde{\rho}_I^{\text{pub}} \gamma) (T + \gamma \partial_\gamma T) + \sigma_{\text{pub}}^2 (1 - T) (\rho_P T - a_P \partial_\gamma T) \\ &\quad + \rho_P (1 - \gamma) (\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2) - \phi (\mathbb{E}[p_{\text{pub}}] + \gamma \partial_\gamma \mathbb{E}[p_{\text{pub}}]) \\ &= \sigma_{\text{pub}}^2 T (a_P - \tilde{\rho}_I^{\text{pub}} \gamma) (T + (1 - \phi) \gamma \partial_\gamma T) \\ &\quad + (1 - \phi \gamma) \sigma_{\text{pub}}^2 (1 - T) (\rho_P T - a_P \partial_\gamma T) + \frac{1}{2} \phi \tilde{\rho}_I^{\text{pub}} \gamma \sigma_{\text{pub}}^2 T^2 \\ &\quad + \rho_P (1 - \gamma) (\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2) - \phi \mathbb{E}[p_{\text{pub}}].\end{aligned}$$

At $\gamma_{\text{pub}}^{\text{risk}}$, the exposures coincide and the risk-allocation term vanishes. Evaluating the remaining terms there gives

$$\begin{aligned}U_{P,\text{pub}}'(\gamma_{\text{pub}}^{\text{risk}}) &= (1 - \phi \gamma_{\text{pub}}^{\text{risk}}) \sigma_{\text{pub}}^2 (1 - T) (\rho_P T - a_P \partial_\gamma T) + \frac{1}{2} \phi \tilde{\rho}_I^{\text{pub}} \gamma_{\text{pub}}^{\text{risk}} \sigma_{\text{pub}}^2 T^2 \\ &\quad + \bar{\phi}_{\text{risk}} - \phi \mathbb{E}[p_{\text{pub}}] \\ &\geq (1 - \phi \gamma_{\text{pub}}^{\text{risk}}) \sigma_{\text{pub}}^2 (1 - T) (\rho_P T - a_P \partial_\gamma T) > 0.\end{aligned}$$

Here $\bar{\phi}_{\text{risk}} \equiv \rho_P (1 - \gamma_{\text{pub}}^{\text{risk}}) (\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2)$. The hypothesis makes the news-hedging benefit cover the fee, while the trial-mass bound makes the commitment term strictly positive.

It remains to rule out optima below the benchmark. Because the fee bound is imposed only at $\gamma_{\text{pub}}^{\text{risk}}$, fix $\gamma < \gamma_{\text{pub}}^{\text{risk}}$ and decompose the expected price as

$$\begin{aligned}\mathbb{E}[p_{\text{pub}}] &= \bar{\theta} + \mu_0 - a_P T(1 - T)\sigma_{\text{pub}}^2 - \frac{1}{2}\tilde{\rho}_I^{\text{pub}}\gamma\sigma_{\text{pub}}^2 T^2 \\ &= \bar{\theta} + \mu_0 - \sigma_{\text{pub}}^2 a_P T(1 - \frac{1}{2}T) + \frac{1}{2}\sigma_{\text{pub}}^2(a_P - \tilde{\rho}_I^{\text{pub}}\gamma)T^2.\end{aligned}$$

The last term vanishes at the benchmark; the preceding term increases in the share because

$$\begin{aligned}\partial_\gamma \{a_P T(1 - \frac{1}{2}T)\} &= -\rho_P T(1 - \frac{1}{2}T) + a_P(1 - T)\partial_\gamma T \\ &= -(1 - T)(\rho_P T - a_P \partial_\gamma T) - \frac{1}{2}\rho_P T^2 < 0.\end{aligned}$$

The inequality follows from the trial-mass bound. Thus the larger news hedge below the benchmark and the maximal increase in the expected price satisfy

$$\begin{aligned}\rho_P(1 - \gamma)(\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2) - \phi\mathbb{E}[p_{\text{pub}}] \\ \geq \bar{\phi}_{\text{risk}} - \phi\mathbb{E}[p_{\text{pub}}]_{\gamma_{\text{pub}}^{\text{risk}}} - \frac{1}{2}\phi\sigma_{\text{pub}}^2(a_P - \tilde{\rho}_I^{\text{pub}}\gamma)T^2 \\ \geq -\frac{1}{2}\phi\sigma_{\text{pub}}^2(a_P - \tilde{\rho}_I^{\text{pub}}\gamma)T^2.\end{aligned}$$

Here the last inequality is the proposition's hypothesis. Substitution into the derivative above gives

$$\begin{aligned}U_{P,\text{pub}}'(\gamma) &\geq \sigma_{\text{pub}}^2 T(a_P - \tilde{\rho}_I^{\text{pub}}\gamma)(T + (1 - \phi)\gamma\partial_\gamma T) \\ &\quad + (1 - \phi\gamma)\sigma_{\text{pub}}^2(1 - T)(\rho_P T - a_P \partial_\gamma T) \\ &\quad + \frac{1}{2}\phi\tilde{\rho}_I^{\text{pub}}\gamma\sigma_{\text{pub}}^2 T^2 \\ &\quad - \frac{1}{2}\phi\sigma_{\text{pub}}^2(a_P - \tilde{\rho}_I^{\text{pub}}\gamma)T^2 \\ &\geq (1 - \frac{1}{2}\phi)\sigma_{\text{pub}}^2 T^2(a_P - \tilde{\rho}_I^{\text{pub}}\gamma) \\ &\quad + (1 - \phi\gamma)\sigma_{\text{pub}}^2(1 - T)(\rho_P T - a_P \partial_\gamma T) > 0.\end{aligned}$$

This follows because $a_P - \tilde{\rho}_I^{\text{pub}}\gamma = (\rho_P + \tilde{\rho}_I^{\text{pub}})(\gamma_{\text{pub}}^{\text{risk}} - \gamma) > 0$, $\partial_\gamma T > 0$, and the trial-mass bound signs the second term.

Finally, the continuously extended objective attains a maximum on $[0, 1]$. The value at zero is only the continuous extension conditional on public financing and not the no-financing payoff, under which no public price is generated. The preceding arguments show that it strictly increases through $\gamma_{\text{pub}}^{\text{risk}} < 1$, so every optimum satisfies $\gamma_{\text{pub}} > \gamma_{\text{pub}}^{\text{risk}}$. $\square$

Proof of Proposition 5

At the interior optimum, the implicit function theorem and the assumed negative second derivative give

$$\begin{aligned}\frac{\partial \gamma_{\text{pub}}}{\partial \tau_\xi} &= -\frac{\partial^2 U_{P,\text{pub}} / \partial \gamma \partial \tau_\xi}{\partial_\gamma^2 U_{P,\text{pub}}}, \\ \frac{\partial \gamma_{\text{pub}}}{\partial \chi} &= -\frac{\partial^2 U_{P,\text{pub}} / \partial \gamma \partial \chi}{\partial_\gamma^2 U_{P,\text{pub}}}.\end{aligned}$$

Here the first derivative holds χ fixed and the second holds τ_ξ fixed. Each has the sign of its cross-partial at γ_{pub} . Throughout, T is the public trial mass and $\tilde{\rho}_I^{\text{pub}}$ is defined as in the proof of Proposition 4.

(a) *Write the objective.* By Lemmas 2 and 3,

$$\begin{aligned}U_{P,\text{pub}} &= \mathbb{E}Y - \frac{1}{2}[\tilde{\rho}_I^{\text{pub}}\gamma^2 + \rho_P(1-\gamma)^2]T^2\sigma_{\text{pub}}^2 \\ &\quad - \frac{1}{2}\rho_P(1-\gamma)^2(\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2) - \phi\gamma\mathbb{E}[p_{\text{pub}}] \\ &= (1-\phi\gamma)\mathbb{E}Y - (1-\phi)\frac{\rho_I\gamma^2T^2}{\tau_{\text{pub}} + \tau_e} \\ &\quad - \frac{1}{2}\rho_P(1-\gamma)^2T^2\sigma_{\text{pub}}^2 - \frac{1}{2}\rho_P(1-\gamma)^2(\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2).\end{aligned}$$

Here the second equality uses $\tilde{\rho}_I^{\text{pub}} = 2\rho_I\tau_{\text{pub}}/(\tau_0 + \tau_\xi + \tau_e)$ and Lemma 3. We also use $\mathbb{E}Y = \bar{\theta} + \mu_0 - a_PT(1-T)\sigma_{\text{pub}}^2$.

(b) *Recall the derivatives of the trial mass.* Lemma 2 gives $T \in (0, \psi)$ and, since $\tau_{\text{pub}} = \tau_{\text{pri}} + \tau_\xi$,

$$\begin{aligned}\partial_\gamma T &= \frac{\rho_P}{\rho_D + a_P} \frac{T(\psi - T)}{2\psi - T}, \\ \frac{\partial T}{\partial \tau_\xi} &= \sigma_{\text{pub}}^2 \frac{T(\psi - T)}{2\psi - T}.\end{aligned}$$

Both derivatives are strictly positive, and

$$\frac{\psi - T}{2\psi - T} < \frac{1}{2}, \quad \frac{\psi - T}{2\psi - T} < \frac{1 - T}{2 - T}.$$

The two bounds reduce to $T > 0$ and $T(1 - \psi) > 0$.

(c) *Fix the informativeness.* The signal precision satisfies

$$\begin{aligned}\tau_\xi &= \frac{\tau_e^2 \tau_z}{\rho_I^2} \\ &= \frac{\tau_e^3}{\chi \rho_I^2}\end{aligned}$$

$$\Longleftrightarrow \tau_e = (\rho_I^2 \chi \tau_\xi)^{1/3}.$$

This follows from Lemma 3 and $\tau_z = \tau_e/\chi$. Thus τ_e increases in both parameters. At fixed τ_ξ , neither τ_{pub} nor T moves with χ , which enters the objective only through the investors' premium.

(d) *Sign the premium effect.* Differentiating the premium gives

$$\begin{aligned} \frac{\partial U_{P,\text{pub}}}{\partial \tau_e} &= (1 - \phi) \frac{\rho_I \gamma^2 T^2}{(\tau_{\text{pub}} + \tau_e)^2}, \\ \frac{\partial^2 U_{P,\text{pub}}}{\partial \gamma \partial \tau_e} &= (1 - \phi) \frac{2\rho_I \gamma T(T + \gamma \partial_\gamma T)}{(\tau_{\text{pub}} + \tau_e)^2} > 0, \\ \frac{\partial^2 U_{P,\text{pub}}}{\partial \gamma \partial \chi} &= \frac{\partial^2 U_{P,\text{pub}}}{\partial \gamma \partial \tau_e} \frac{\partial \tau_e}{\partial \chi} > 0. \end{aligned}$$

The inequalities hold because $\phi < 1$, the optimum is interior, and T , $\partial_\gamma T$, and $\partial_\chi \tau_e$ are positive. Hence $\partial \gamma_{\text{pub}}/\partial \chi > 0$, proving part (ii).

(e) *Split the fee.* Fix χ and vary τ_ξ . Separating the fee in the objective gives

$$\begin{aligned} U_{P,\text{pub}} &= (1 - \phi) \gamma \mathbb{E}[p_{\text{pub}}] + (1 - \gamma) \mathbb{E}Y - \frac{1}{2} \rho_P (1 - \gamma)^2 \text{Var}(Y) \\ &= (1 - \phi) \left[\gamma \mathbb{E}[p_{\text{pub}}] + (1 - \gamma) \mathbb{E}Y - \frac{1}{2} \rho_P (1 - \gamma)^2 \text{Var}(Y) \right] \\ &\quad + \phi \left[(1 - \gamma) \mathbb{E}Y - \frac{1}{2} \rho_P (1 - \gamma)^2 \text{Var}(Y) \right] \\ &= (1 - \phi) U_{P,\text{pub}}|_{\phi=0} + \phi \left[(1 - \gamma) \mathbb{E}Y - \frac{1}{2} \rho_P (1 - \gamma)^2 \text{Var}(Y) \right]. \end{aligned}$$

The second equality adds and subtracts ϕ times the certainty equivalent of the retained stake. By Lemmas 2 and 3, neither bracket depends on ϕ . It therefore suffices to show that their cross-partial derivatives are positive at γ_{pub} .

(f) *Differentiate the retained stake.* Using the moments from step (a),

$$\begin{aligned} (1 - \gamma) \mathbb{E}Y - \frac{1}{2} \rho_P (1 - \gamma)^2 \text{Var}(Y) \\ = (1 - \gamma) (\bar{\theta} + \mu_0) - \frac{1}{2} \rho_P (1 - \gamma)^2 \left[\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2 (1 - T)^2 \right]. \end{aligned}$$

Only the last bracket depends on τ_ξ , and step (b) gives

$$\begin{aligned} \frac{\partial}{\partial \tau_\xi} \left[\sigma_{\text{pub}}^2 (1 - T)^2 \right] &= -\sigma_{\text{pub}}^4 (1 - T)^2 - 2\sigma_{\text{pub}}^2 (1 - T) \frac{\partial T}{\partial \tau_\xi} \\ &= -\sigma_{\text{pub}}^4 (1 - T) \left[(1 - T) + \frac{2T(\psi - T)}{2\psi - T} \right] \\ &= -\sigma_{\text{pub}}^4 (1 - T) \left[1 - \frac{T^2}{2\psi - T} \right]. \end{aligned}$$

Here $\partial_{\tau_\xi} \sigma_{\text{pub}}^2 = -\sigma_{\text{pub}}^4$. Both $1 - T$ and the bracket are positive and strictly decreasing in

T , because $T^2 < T < 2\psi - T$ and $T^2/(2\psi - T)$ increases in T . Hence

$$\begin{aligned}
& \frac{\partial^2}{\partial \gamma \partial \tau_\xi} \left[(1 - \gamma) \mathbb{E}Y - \frac{1}{2} \rho_P (1 - \gamma)^2 \text{Var}(Y) \right] \\
&= \frac{\partial}{\partial \gamma} \left\{ -\frac{1}{2} \rho_P (1 - \gamma)^2 \sigma_{\text{pub}}^4 (1 - T) \left[1 - \frac{T^2}{2\psi - T} \right] \right\} \\
&= \rho_P (1 - \gamma) \sigma_{\text{pub}}^4 (1 - T) \left[1 - \frac{T^2}{2\psi - T} \right] \\
&\quad - \frac{1}{2} \rho_P (1 - \gamma)^2 \sigma_{\text{pub}}^4 \partial_\gamma T \frac{\partial}{\partial T} \left\{ (1 - T) \left[1 - \frac{T^2}{2\psi - T} \right] \right\} > 0.
\end{aligned}$$

The first term is positive at an interior share, while the second subtracts a negative derivative times $\partial_\gamma T > 0$.

(g) *Differentiate the news risk and the trial risk.* At zero fee, the news term satisfies

$$\begin{aligned}
& \frac{\partial}{\partial \tau_\xi} \left[-\frac{1}{2} \rho_P (1 - \gamma)^2 (\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2) \right] = -\frac{1}{2} \rho_P (1 - \gamma)^2 \sigma_{\text{pub}}^4, \\
& \frac{\partial^2}{\partial \gamma \partial \tau_\xi} \left[-\frac{1}{2} \rho_P (1 - \gamma)^2 (\sigma_{\text{pri}}^2 - \sigma_{\text{pub}}^2) \right] = \rho_P (1 - \gamma) \sigma_{\text{pub}}^4.
\end{aligned}$$

A more informative price thus adds news risk to the retained stake, while selling reduces it. The settlement discount and trial risk combine as

$$\begin{aligned}
& -a_P T (1 - T) \sigma_{\text{pub}}^2 - \frac{1}{2} \rho_P (1 - \gamma)^2 T^2 \sigma_{\text{pub}}^2 \\
&= -\frac{1}{2} \rho_P (1 - \gamma) \left[2 \sigma_{\text{pub}}^2 T - (1 + \gamma) \sigma_{\text{pub}}^2 T^2 \right].
\end{aligned}$$

Here we use $a_P = (1 - \gamma) \rho_P$. Its two building blocks satisfy

$$\begin{aligned}
& \frac{\partial(\sigma_{\text{pub}}^2 T)}{\partial \tau_\xi} = -\sigma_{\text{pub}}^4 T + \sigma_{\text{pub}}^2 \frac{\partial T}{\partial \tau_\xi} \\
&= -\sigma_{\text{pub}}^4 \frac{\psi T}{2\psi - T}, \\
& \frac{\partial(\sigma_{\text{pub}}^2 T^2)}{\partial \tau_\xi} = -\sigma_{\text{pub}}^4 T^2 + 2\sigma_{\text{pub}}^2 T \frac{\partial T}{\partial \tau_\xi} \\
&= -\sigma_{\text{pub}}^4 \frac{T^3}{2\psi - T}.
\end{aligned}$$

This follows from step (b). Therefore,

$$\begin{aligned}
& \frac{\partial^2}{\partial \gamma \partial \tau_\xi} \left\{ -\frac{1}{2} \rho_P (1 - \gamma) \left[2 \sigma_{\text{pub}}^2 T - (1 + \gamma) \sigma_{\text{pub}}^2 T^2 \right] \right\} \\
&= \frac{\partial}{\partial \gamma} \left\{ \frac{1}{2} \rho_P (1 - \gamma) \sigma_{\text{pub}}^4 \frac{2\psi T - (1 + \gamma) T^3}{2\psi - T} \right\}
\end{aligned}$$

$$\begin{aligned}
&= \frac{1}{2} \rho_P \sigma_{\text{pub}}^4 \left\{ -\frac{2\psi T - (1 + \gamma)T^3}{2\psi - T} - \frac{(1 - \gamma)T^3}{2\psi - T} \right. \\
&\quad \left. + (1 - \gamma) \partial_\gamma T \frac{\partial}{\partial T} \left[\frac{2\psi T - (1 + \gamma)T^3}{2\psi - T} \right] \right\} \\
&= \rho_P \sigma_{\text{pub}}^4 \left\{ -\frac{T(\psi - \gamma T^2)}{2\psi - T} + (1 - \gamma) \partial_\gamma T \frac{2\psi^2 - (1 + \gamma)T^2(3\psi - T)}{(2\psi - T)^2} \right\}.
\end{aligned}$$

Here the negative first term is the loss of commitment value and the second is the acceptance response.

(h) *Bound the premium.* At zero fee, steps (b) and (c) give

$$\begin{aligned}
\frac{\partial}{\partial \tau_\xi} \left[-\frac{\rho_I \gamma^2 T^2}{\tau_{\text{pub}} + \tau_e} \right] &= \rho_I \gamma^2 T^2 \frac{1 + \partial \tau_e / \partial \tau_\xi}{(\tau_{\text{pub}} + \tau_e)^2} - \frac{2\rho_I \gamma^2 T}{\tau_{\text{pub}} + \tau_e} \frac{\partial T}{\partial \tau_\xi} \\
&= \rho_I \frac{1 + \partial \tau_e / \partial \tau_\xi}{(\tau_{\text{pub}} + \tau_e)^2} \gamma^2 T^2 - \frac{2\rho_I \sigma_{\text{pub}}^2}{\tau_{\text{pub}} + \tau_e} \gamma^2 T^2 \frac{\psi - T}{2\psi - T}.
\end{aligned}$$

Here the first term is the precision effect and the second the trial effect. Differentiating in the share yields

$$\begin{aligned}
\frac{\partial}{\partial \gamma} [\gamma^2 T^2] &= 2\gamma T(T + \gamma \partial_\gamma T), \\
\frac{\partial}{\partial \gamma} \left[\gamma^2 T^2 \frac{\psi - T}{2\psi - T} \right] &= 2\gamma T^2 \frac{\psi - T}{2\psi - T} + \gamma^2 \partial_\gamma T \frac{T(4\psi^2 - 7\psi T + 2T^2)}{(2\psi - T)^2} \\
&\leq 2\gamma T^2 \frac{\psi - T}{2\psi - T} + \gamma^2 \partial_\gamma T \frac{2T(\psi - T)}{2\psi - T} \\
&= 2\gamma T(T + \gamma \partial_\gamma T) \frac{\psi - T}{2\psi - T}.
\end{aligned}$$

Here the inequality uses $4\psi^2 - 7\psi T + 2T^2 = 2(\psi - T)(2\psi - T) - \psi T$ and $\partial_\gamma T > 0$.

Dropping the nonnegative $\partial_{\tau_\xi} \tau_e$ and factoring gives

$$\begin{aligned}
&\frac{\partial^2}{\partial \gamma \partial \tau_\xi} \left[-\frac{\rho_I \gamma^2 T^2}{\tau_{\text{pub}} + \tau_e} \right] \\
&\geq 2\rho_I \gamma T(T + \gamma \partial_\gamma T) \left[\frac{1}{(\tau_{\text{pub}} + \tau_e)^2} - \frac{2\sigma_{\text{pub}}^2}{\tau_{\text{pub}} + \tau_e} \frac{\psi - T}{2\psi - T} \right] \\
&= 2\rho_I \gamma T(T + \gamma \partial_\gamma T) \sigma_{\text{pub}}^4 \frac{\tau_{\text{pub}}}{\tau_{\text{pub}} + \tau_e} \left[\frac{\tau_{\text{pub}}}{\tau_{\text{pub}} + \tau_e} - \frac{2(\psi - T)}{2\psi - T} \right] \\
&\geq -2\rho_I \gamma T(T + \gamma \partial_\gamma T) \sigma_{\text{pub}}^4 \frac{(\psi - T)^2}{(2\psi - T)^2} \\
&> -2\rho_P \gamma T(T + \gamma \partial_\gamma T) \sigma_{\text{pub}}^4 \frac{(\psi - T)^2}{(2\psi - T)^2}.
\end{aligned}$$

The equality uses $\sigma_{\text{pub}}^2 \tau_{\text{pub}} = 1$, the second inequality completes the square in $\tau_{\text{pub}}/(\tau_{\text{pub}} + \tau_e)$, and the last uses $\rho_I < \rho_P$.

(i) Show that the news effect dominates. Adding the news and trial effects from step (g) to the premium bound from step (h) gives

$$\begin{aligned} \frac{1}{\rho_P \sigma_{\text{pub}}^4} \frac{\partial^2 U_{P,\text{pub}}|_{\phi=0}}{\partial \gamma \partial \tau_\xi} &> (1 - \gamma) - \frac{T(\psi - \gamma T^2)}{2\psi - T} \\ &\quad + (1 - \gamma) \partial_\gamma T \frac{2\psi^2 - (1 + \gamma)T^2(3\psi - T)}{(2\psi - T)^2} \\ &\quad - 2\gamma T(T + \gamma \partial_\gamma T) \frac{(\psi - T)^2}{(2\psi - T)^2}. \end{aligned}$$

The condition $2(1 - \gamma) \geq (1 + \gamma)T$ implies

$$\begin{aligned} 1 - \gamma - \gamma T &\geq \frac{1}{2}(1 + \gamma)T - \gamma T \\ &= \frac{1}{2}(1 - \gamma)T > 0. \end{aligned}$$

Hence the news effect net of the loss of commitment satisfies

$$\begin{aligned} (1 - \gamma) - \frac{T(\psi - \gamma T^2)}{2\psi - T} &= (1 - T)(1 - \gamma - \gamma T) + \frac{T(\psi - T)}{2\psi - T}(1 - 2\gamma T) \\ &> \frac{\psi - T}{2\psi - T} \left[(2 - T)(1 - \gamma - \gamma T) + T(1 - 2\gamma T) \right] \\ &= \frac{\psi - T}{2\psi - T} \left[2(1 - \gamma) - \gamma T - \gamma T^2 \right] \\ &\geq \frac{\psi - T}{2\psi - T} \left[(1 + \gamma)T - \gamma T - \gamma T^2 \right] \\ &= \frac{T(\psi - T)}{2\psi - T}(1 - \gamma T). \end{aligned}$$

Here the first inequality uses $1 - T > (2 - T)(\psi - T)/(2\psi - T)$ and the positive factor above, and the second uses the condition.

The trial-mass slope further satisfies

$$\begin{aligned} (1 - \gamma) \partial_\gamma T &= \frac{a_P}{\rho_D + a_P} \frac{T(\psi - T)}{2\psi - T} \\ &< \frac{T(\psi - T)}{2\psi - T}, \\ \gamma \partial_\gamma T &< \frac{\gamma}{1 - \gamma} \frac{T(\psi - T)}{2\psi - T} \\ &\leq \frac{2\gamma}{1 + \gamma} \frac{\psi - T}{2\psi - T} \\ &< \frac{\gamma}{1 + \gamma}. \end{aligned}$$

These inequalities follow from step (b), $\rho_D > 0$, the condition, and $(\psi - T)/(2\psi - T) < 1/2$.

If $(1 + \gamma)T \leq 1$, the acceptance response is nonnegative:

$$2\psi^2 - (1 + \gamma)T^2(3\psi - T) = 2\psi^2[1 - (1 + \gamma)T] + (1 + \gamma)T(\psi - T)(2\psi - T) \geq 0.$$

Bounding the premium and adding the preceding inequalities gives

$$\begin{aligned} 2\gamma T(T + \gamma \partial_\gamma T) \frac{(\psi - T)^2}{(2\psi - T)^2} &< \gamma T \left(T + \frac{\gamma}{1 + \gamma} \right) \frac{\psi - T}{2\psi - T}, \\ \frac{1}{\rho_P \sigma_{\text{pub}}^4} \frac{\partial^2 U_{P,\text{pub}}|_{\phi=0}}{\partial \gamma \partial \tau_\xi} &> \frac{T(\psi - T)}{2\psi - T} \left[1 - 2\gamma T - \frac{\gamma^2}{1 + \gamma} \right] \\ &\geq \frac{T(\psi - T)}{2\psi - T} \left[1 - \frac{4\gamma(1 - \gamma)}{1 + \gamma} - \frac{\gamma^2}{1 + \gamma} \right] \\ &= \frac{T(\psi - T)}{2\psi - T} \frac{3(\gamma - \frac{1}{2})^2 + \frac{1}{4}}{1 + \gamma} > 0. \end{aligned}$$

Here the first inequality uses the bounds on $\gamma \partial_\gamma T$ and $(\psi - T)/(2\psi - T)$, and the third uses $\gamma T \leq 2\gamma(1 - \gamma)/(1 + \gamma)$.

If $(1 + \gamma)T > 1$, the condition implies $\gamma < 1/2$. Combining the acceptance response with the slope-dependent part of the premium yields

$$\begin{aligned} (1 - \gamma) \partial_\gamma T \frac{2\psi^2 - (1 + \gamma)T^2(3\psi - T)}{(2\psi - T)^2} - 2\gamma^2 T \partial_\gamma T \frac{(\psi - T)^2}{(2\psi - T)^2} \\ = -(1 - \gamma) \partial_\gamma T \frac{2\psi^2}{(2\psi - T)^2} [(1 + \gamma)T - 1] \\ + T \partial_\gamma T \frac{\psi - T}{2\psi - T} \left[1 - \gamma^2 - 2\gamma^2 \frac{\psi - T}{2\psi - T} \right] \\ > -\frac{2T(\psi - T)}{2\psi - T} [(1 + \gamma)T - 1]. \end{aligned}$$

The inequality uses the first slope bound and $\psi < 2\psi - T$, and drops the second term because its bracket exceeds $1 - 2\gamma^2 > 0$. Adding the bounds gives

$$\begin{aligned} \frac{1}{\rho_P \sigma_{\text{pub}}^4} \frac{\partial^2 U_{P,\text{pub}}|_{\phi=0}}{\partial \gamma \partial \tau_\xi} &> \frac{T(\psi - T)}{2\psi - T} \left[(1 - \gamma T) - 2((1 + \gamma)T - 1) - 2\gamma T \frac{\psi - T}{2\psi - T} \right] \\ &= \frac{T(\psi - T)}{2\psi - T} \left[3 - 2T - 3\gamma T - 2\gamma T \frac{\psi - T}{2\psi - T} \right] \\ &> \frac{T(\psi - T)}{2\psi - T} \left[3 - 2T - \gamma T \frac{8 - 5T}{2 - T} \right] \\ &\geq \frac{T(\psi - T)}{2\psi - T} \left[3 - 2T - \frac{T(8 - 5T)}{2 + T} \right] \\ &= \frac{T(\psi - T)}{2\psi - T} \frac{3(1 - T)(2 - T)}{2 + T} > 0. \end{aligned}$$

The second inequality uses $(\psi - T)/(2\psi - T) < (1 - T)/(2 - T)$, and the third uses $\gamma \leq (2 - T)/(2 + T)$.

(j) *Conclude.* In both cases, the zero-fee cross-partial is positive at γ_{pub} , as is the retained-stake cross-partial by step (f). Their weighted sum in step (e) is therefore positive, so the implicit function theorem gives $\partial\gamma_{\text{pub}}/\partial\tau_\xi > 0$, proving part (i). $\square$

Proof of Proposition 6

Rationalizing the positive root of the quadratic in Lemma 2 gives

$$T(\gamma, \tau) = \frac{2\psi\Delta}{\Delta + \sqrt{\Delta^2 + 4(\rho_D + a_P)\psi\Delta/\tau}},$$

$$\lim_{\gamma \rightarrow 1} T(\gamma, \tau) = \frac{2\psi\Delta}{\Delta + \sqrt{\Delta^2 + 4\rho_D\psi\Delta/\tau}}.$$

The limiting denominator strictly decreases in precision, and $\tau_{\text{pub}} > \tau_{\text{pri}}$. Thus

$$0 < \lim_{\gamma \rightarrow 1} T(\gamma, \tau_{\text{pri}}) < \lim_{\gamma \rightarrow 1} T(\gamma, \tau_{\text{pub}}).$$

We now compare the plaintiff's limiting payoffs. Lemma 3 prices both markets at the same residual precision, although the litigants' beliefs and hence their trial masses differ. Because underwriting revenue is deterministic and the retained cash flow is normal,

$$U_{P,m}(\gamma) = (1 - \phi)\gamma\mathbb{E}[p_m] + (1 - \gamma)\mathbb{E}[Y] \\ - \frac{1}{2}\rho_P(1 - \gamma)^2 \text{Var}(Y), \quad m \in \{\text{pri}, \text{pub}\}.$$

Lemma 2 and the variance calculation at the start of the proof of Proposition 4 imply that the mean and variance of proceeds remain bounded as $\gamma \rightarrow 1$. The retained-stake terms therefore vanish, and Lemma 3 yields

$$\lim_{\gamma \rightarrow 1} U_{P,m}(\gamma) = (1 - \phi) \left(\bar{\theta} + \mu_0 - \frac{\rho_I}{\tau_{\text{pub}} + \tau_e} \left[\lim_{\gamma \rightarrow 1} T(\gamma, \tau_m) \right]^2 \right),$$

$$\lim_{\gamma \rightarrow 1} [U_{P,\text{pri}}(\gamma) - U_{P,\text{pub}}(\gamma)] = \frac{(1 - \phi)\rho_I}{\tau_{\text{pub}} + \tau_e} \left(\left[\lim_{\gamma \rightarrow 1} T(\gamma, \tau_{\text{pub}}) \right]^2 - \left[\lim_{\gamma \rightarrow 1} T(\gamma, \tau_{\text{pri}}) \right]^2 \right) \\ > 0.$$

The strict inequality follows from the ordering of the limiting trial masses.

Finally, fix the signal and noise precisions. The strict limiting gap makes the private payoff larger at every common share sufficiently close to one. For any cap in this interval,

$$\max_{\gamma \in [0, \bar{\gamma}]} U_{P,\text{pri}}(\gamma) \geq U_{P,\text{pri}}(\bar{\gamma})$$

$$\begin{aligned}
&> U_{P,\text{pub}}(\bar{\gamma}) \\
&= \max_{\gamma \in [0, \bar{\gamma}]} U_{P,\text{pub}}(\gamma).
\end{aligned}$$

The first inequality uses feasibility of $\bar{\gamma}$ in the private market, and the equality uses $\gamma_{\text{pub}} = \bar{\gamma}$. Hence the plaintiff strictly prefers the private market. The required proximity of the cap to one may depend on the fixed market parameters. $\square$

Proof of Proposition 7

If the plaintiff finances in the public market, the tie-breaking rule implies that this strictly raises his certainty equivalent over the unfinanced case. Hence,

$$\begin{aligned}
G_{\text{pub}} &= G(U_{P,\text{pub}}(\gamma_{\text{pub}})) \\
&> G(U_{P,\text{pri}}(0)) \\
&= G_0.
\end{aligned}$$

Here the inequality uses the strict monotonicity of G .

The same argument gives $G_0 < G_{\text{pri}}$, proving part (i). Moreover, private financing implies $\gamma_{\text{pri}} > 0$, since selling nothing is equivalent to not financing.

To prove part (ii), fix γ and a belief of precision τ , and let $R(\gamma, \tau) \equiv (\rho_D + (1 - \gamma)\rho_P)/\tau$ denote the litigants' joint risk cost of trial. Lemma 2, with $\sigma^2 = 1/\tau$, gives

$$\begin{aligned}
T &= \psi(1 - \pi_g) \\
&= \frac{\psi\Delta}{\Delta + (\rho_D + a_P)T\sigma^2} \\
&= \frac{\psi\Delta}{\Delta + RT} \\
\iff 0 &= RT^2 + \Delta T - \psi\Delta.
\end{aligned}$$

Thus γ and τ affect T only through R ; the posterior mean, and hence the realization of the public price, does not affect it.

Treating R as a parameter of this quadratic,

$$\partial_T [RT^2 + \Delta T - \psi\Delta] = 2RT + \Delta > 0.$$

Since the quadratic is negative at zero and unbounded above, it has a unique positive root, at which the implicit function theorem gives

$$\frac{\partial T}{\partial R} = -\frac{\partial_R [RT^2 + \Delta T - \psi\Delta]}{\partial_T [RT^2 + \Delta T - \psi\Delta]}$$

$$= -\frac{T^2}{2RT + \Delta} < 0.$$

Hence T is strictly decreasing in R .

It remains to compare each market with no financing. In the private market, $\gamma_{\text{pri}} > 0$ implies

$$\begin{aligned} R(\gamma_{\text{pri}}, \tau_{\text{pri}}) &= \frac{\rho_D + \rho_P}{\tau_{\text{pri}}} - \frac{\gamma_{\text{pri}} \rho_P}{\tau_{\text{pri}}} \\ &< \frac{\rho_D + \rho_P}{\tau_{\text{pri}}} \\ &= R(0, \tau_{\text{pri}}). \end{aligned}$$

In the public market, $\gamma_{\text{pub}} \geq 0$ and $\tau_{\text{pub}} = \tau_{\text{pri}} + \tau_\xi > \tau_{\text{pri}}$ imply

$$R(\gamma_{\text{pub}}, \tau_{\text{pub}}) = \frac{\rho_D + (1 - \gamma_{\text{pub}})\rho_P}{\tau_{\text{pub}}} \leq \frac{\rho_D + \rho_P}{\tau_{\text{pub}}} < \frac{\rho_D + \rho_P}{\tau_{\text{pri}}} = R(0, \tau_{\text{pri}}).$$

These inequalities and the strict decrease of T in R give $T_0 < T_{\text{pri}}, T_{\text{pub}}$, proving part (ii). $\square$

Proof of Proposition 8

Define $R(\gamma, \tau) \equiv (\rho_D + (1 - \gamma)\rho_P)/\tau$. Part (i) follows from the definition of the trial mass in Lemma 2.

$$\begin{aligned} T_{\text{pri}} < T_{\text{pub}} &\iff R(\gamma_{\text{pub}}, \tau_{\text{pub}}) < R(\gamma_{\text{pri}}, \tau_{\text{pri}}) \\ &\iff \frac{\rho_D + (1 - \gamma_{\text{pub}})\rho_P}{\tau_{\text{pub}}} < \frac{\rho_D + (1 - \gamma_{\text{pri}})\rho_P}{\tau_{\text{pri}}}. \end{aligned}$$

Part (ii) follows from the following derivation.

$$\begin{aligned} R(\gamma_{\text{pub}}, \tau_{\text{pub}}) &= \frac{\rho_D + (1 - \gamma_{\text{pub}})\rho_P}{\tau_{\text{pub}}} \\ &\leq \frac{\rho_D + \rho_P}{\tau_{\text{pri}} + \tau_\xi} \\ &< \frac{\rho_D + \rho_P}{\tau_{\text{pri}} + \tau_{\text{pri}} \rho_P / \rho_D} \\ &= \frac{\rho_D}{\tau_{\text{pri}}} \\ &\leq \frac{\rho_D + (1 - \gamma_{\text{pri}})\rho_P}{\tau_{\text{pri}}} \\ &= R(\gamma_{\text{pri}}, \tau_{\text{pri}}). \end{aligned}$$

The first weak inequality uses $\gamma_{\text{pub}} \geq 0$ and inserts the posterior precision of Lemma 3. The second strict inequality uses the sufficient condition $\tau_\xi > \tau_{\text{pri}} \rho_P / \rho_D$. The second equality factors the denominator as $\tau_{\text{pri}}(\rho_D + \rho_P) / \rho_D$ and cancels the common sum. The second weak inequality uses $\gamma_{\text{pri}} \leq 1$. $\square$

Proof of Proposition 9

Throughout, $T = T(\gamma, \tau_{\text{pri}})$ is the trial mass under the prior. Define the regulator's cost by

$$R_O(\gamma) \equiv \frac{T^2}{2\tau_{\text{pri}}} \left[\rho_P(1 - \gamma)^2 + \tilde{\rho}_I^{\text{pri}} \gamma^2 + \rho_D \right].$$

At a zero fee, adding the litigants' certainty equivalents gives

$$U_{P,\text{pri}}(\gamma) + U_{D,\text{pri}}(\gamma) = -R_O(\gamma).$$

Expected payments cancel; the defendant's risk premium follows from Lemma 2(ii).

Differentiating the cost gives

$$\begin{aligned} R'_O(\gamma) &= \frac{T^2}{\tau_{\text{pri}}} \left[\tilde{\rho}_I^{\text{pri}} \gamma - \rho_P(1 - \gamma) \right] \\ &\quad + \frac{T \partial_\gamma T}{\tau_{\text{pri}}} \left[\rho_P(1 - \gamma)^2 + \tilde{\rho}_I^{\text{pri}} \gamma^2 + \rho_D \right]. \end{aligned}$$

The trial-mass derivative from the proof of Lemma 2 is

$$\frac{\partial_\gamma T}{T} = \frac{\rho_P}{\rho_D + a_P} \frac{\psi - T}{2\psi - T} > 0.$$

At zero financing and at the fixed-trial risk benchmark, respectively, we obtain

$$\begin{aligned} R'_O(0) &= - \frac{\rho_P \psi T^2}{\tau_{\text{pri}}(2\psi - T)} \Big|_{\gamma=0} < 0, \\ R'_O(\gamma_{\text{pri}}^{\text{risk}}) &= \frac{T \partial_\gamma T}{\tau_{\text{pri}}} \left[\rho_P(1 - \gamma)^2 + \tilde{\rho}_I^{\text{pri}} \gamma^2 + \rho_D \right] \Big|_{\gamma=\gamma_{\text{pri}}^{\text{risk}}} > 0. \end{aligned}$$

At the risk benchmark, the fixed-trial allocation term vanishes by Definition 4.

Since the trial mass strictly increases in the share, we can minimize over its feasible trial masses. Inverting the fixed point in Lemma 2(i) gives

$$\gamma = \frac{\rho_P + \rho_D}{\rho_P} - \frac{\tau_{\text{pri}} \Delta \psi - T}{\rho_P T^2}.$$

Substitution into the regulator's cost yields

$$R_O = \frac{(\rho_P + \tilde{\rho}_I^{\text{pri}})\tau_{\text{pri}}\Delta^2}{2\rho_P^2} \left(\frac{\psi}{T} - 1 \right)^2 - \frac{\Delta \left[\rho_P \rho_D + \tilde{\rho}_I^{\text{pri}}(\rho_P + \rho_D) \right]}{\rho_P^2} (\psi - T) + \frac{T^2}{2\tau_{\text{pri}}} \left[\rho_D + \frac{\rho_D^2}{\rho_P} + \frac{\tilde{\rho}_I^{\text{pri}}(\rho_P + \rho_D)^2}{\rho_P^2} \right].$$

Differentiating twice with respect to the trial mass gives

$$\frac{d^2 R_O}{dT^2} = \frac{(\rho_P + \tilde{\rho}_I^{\text{pri}})\tau_{\text{pri}}\Delta^2\psi(3\psi - 2T)}{\rho_P^2 T^4} + \frac{1}{\tau_{\text{pri}}} \left[\rho_D + \frac{\rho_D^2}{\rho_P} + \frac{\tilde{\rho}_I^{\text{pri}}(\rho_P + \rho_D)^2}{\rho_P^2} \right] > 0.$$

The sign follows from $0 < T < \psi$ and positive risk aversions.

Strict convexity and the endpoint signs locate the unique minimizing share $\bar{\gamma}^*$ strictly between zero and the risk benchmark. Dividing its first-order condition by the trial variance gives the equation in the proposition.

The plaintiff's derivative at a zero fee is

$$U'_{P,\text{pri}}(\gamma) = \frac{T}{\tau_{\text{pri}}} (a_P - \tilde{\rho}_I^{\text{pri}}\gamma) (T + \gamma \partial_\gamma T) + \frac{1 - T}{\tau_{\text{pri}}} (\rho_P T - a_P \partial_\gamma T) > 0, \quad 0 \leq \gamma \leq \gamma_{\text{pri}}^{\text{risk}}.$$

The first term is nonnegative below the risk benchmark. The second is positive because the proof of Lemma 2 establishes $a_P \partial_\gamma T < \frac{1}{2} \rho_P T$.

The plaintiff therefore sells at the regulator's minimizing share when it is the cap, strictly prefers financing to full retention and would sell beyond the risk benchmark without regulation. Hence,

$$0 < \bar{\gamma}^* < \gamma_{\text{pri}}^{\text{risk}} < \gamma_{\text{pri}}.$$

A lower cap excludes the minimizing share; a higher cap allows a slightly larger sale that the plaintiff strictly prefers to every share at or below it. The optimal cap is therefore unique and binding.

At the minimizing share, the cost is stationary in trial mass, so the chain rule gives

$$R''_O(\bar{\gamma}^*) = \frac{d^2 R_O}{dT^2} (\partial_\gamma T)^2 \Big|_{\gamma=\bar{\gamma}^*} > 0.$$

At fixed bargaining parameters, the trial mass is independent of the investors' pricing coefficient. The implicit function theorem then gives

$$\begin{aligned}\frac{\partial \bar{\gamma}^*}{\partial \bar{\rho}_I^{\text{pri}}} &= -\frac{\partial_{\bar{\rho}_I^{\text{pri}}} R'_O(\bar{\gamma}^*)}{R''_O(\bar{\gamma}^*)} \\ &= -\frac{\bar{\gamma}^* T (T + \bar{\gamma}^* \partial_{\gamma} T)}{\tau_{\text{pri}} R''_O(\bar{\gamma}^*)} < 0.\end{aligned}$$

All factors in the ratio are positive, proving the liquidity comparative static. $\square$

Proof of Proposition 10

We show that the underwriter's best response is strictly increasing in the share, and that the plaintiff, who anticipates it, therefore sells beyond the fixed-mass optimum. Throughout, $T = T(\gamma, \tau_{\text{pri}})$ is the trial mass of Lemma 2 at the prior, $\sigma^2 \equiv \sigma_{\text{pri}}^2$, and $U_{P,\text{pri}}^{\text{sy}}(\gamma; \omega)$ is the fixed-mass objective of the extension. The bargaining stage follows the sale and depends on it only through the plaintiff's retained exposure a_P , so by Lemma 2 the trial mass and the mean $\mathbb{E}Y$ depend on the share but not on the mass of investors. The hypothesis is read at the equilibrium mass, so $\omega_{\text{pri}}^{\text{sy}} > 0$. Since at $\gamma = 0$ the underwriter earns no fee and attracts no investors, $\gamma_{\text{pri}}^{\text{sy}} > 0$.

(a) *Write and differentiate expected revenue.* Define

$$H(\omega) \equiv \frac{1}{\omega(\tau_{\text{pri}} + \tau_e + \tau_{\xi}(\omega))}.$$

The expected private price in the extension gives

$$\begin{aligned}\gamma \mathbb{E}[p_{\text{pri}}(\gamma, \omega)] &= \gamma \mathbb{E}Y - \rho_I H(\omega) \gamma^2 T^2, \\ U_{P,\text{pri}}^{\text{sy}}(\gamma; \omega) &= (1 - \phi) \gamma \mathbb{E}[p_{\text{pri}}(\gamma, \omega)] + (1 - \gamma) \mathbb{E}Y - \frac{1}{2} \rho_P (1 - \gamma)^2 T^2 \sigma^2, \\ \Pi(\gamma; \omega) &= \phi \gamma \mathbb{E}[p_{\text{pri}}(\gamma, \omega)] - \kappa(\omega).\end{aligned}$$

The first equality multiplies the expected price by the share. The second equality adds the certainty equivalent of the plaintiff's retained stake. The third equality subtracts the cost of attracting investors from the underwriter's expected fee revenue.

The function H is strictly decreasing and strictly convex on the positive half-line.

$$\begin{aligned}H'(\omega) &= -\frac{\tau_{\text{pri}} + \tau_e + 3\tau_{\xi}(\omega)}{\omega^2(\tau_{\text{pri}} + \tau_e + \tau_{\xi}(\omega))^2} < 0, \\ H''(\omega) &= \frac{2[(\tau_{\text{pri}} + \tau_e)^2 + 3(\tau_{\text{pri}} + \tau_e)\tau_{\xi}(\omega) + 6\tau_{\xi}(\omega)^2]}{\omega^3(\tau_{\text{pri}} + \tau_e + \tau_{\xi}(\omega))^3} > 0.\end{aligned}$$

The first equality differentiates H and uses that $\tau_{\xi}(\omega)$ is quadratic in the mass. The

second equality differentiates once more and collects positive terms.

Using $\partial_\gamma T > 0$ from Lemma 2(iii), expected revenue satisfies

$$\begin{aligned}\partial_\omega(\gamma \mathbb{E}[p_{\text{pri}}]) &= -\rho_I H'(\omega) \gamma^2 T^2 > 0, \\ \partial_\omega^2(\gamma \mathbb{E}[p_{\text{pri}}]) &= -\rho_I H''(\omega) \gamma^2 T^2 < 0, \\ \partial_{\gamma\omega}^2(\gamma \mathbb{E}[p_{\text{pri}}]) &= -2\rho_I H'(\omega) \gamma T (T + \gamma \partial_\gamma T) > 0.\end{aligned}$$

The first two equalities differentiate expected revenue in the mass. The third equality differentiates its first derivative in the share. The signs use $H' < 0$, $H'' > 0$ and the strict increase of γT .

A deeper market raises the plaintiff's payoff at every positive share. It also makes the underwriter's marginal value of depth strictly increasing in the share.

(b) *Show that the best response increases.* Fix $\gamma > 0$. By Assumption 2, the underwriter's profit is strictly concave in the mass. Its derivative tends to $+\infty$ as $\omega \downarrow 0$ and is negative for large ω , since marginal revenue vanishes while weak convexity makes the strictly positive marginal cost κ' nondecreasing. The best response is therefore the unique root of its first-order condition. The implicit function theorem gives

$$\begin{aligned}\omega'(\gamma) &= -\frac{\partial_{\gamma\omega}^2 \Pi}{\partial_\omega^2 \Pi} \\ &= \frac{\phi \partial_{\gamma\omega}^2(\gamma \mathbb{E}[p_{\text{pri}}])}{\kappa''(\omega) - \phi \partial_\omega^2(\gamma \mathbb{E}[p_{\text{pri}}])} > 0.\end{aligned}$$

The first equality is the implicit function theorem. The second equality inserts the derivatives of the underwriter's profit. The inequality uses the signs established in step (a) and weak convexity of the cost.

(c) *Compare the equilibrium with the fixed-mass optimum.* The plaintiff moves first and anticipates the underwriter's response, so $\gamma_{\text{pri}}^{\text{sy}}$ maximizes $V(\gamma) \equiv U_{P,\text{pri}}^{\text{sy}}(\gamma; \omega(\gamma))$ on $[0, 1]$, and $\omega_{\text{pri}}^{\text{sy}} = \omega(\gamma_{\text{pri}}^{\text{sy}})$. Let $\gamma_f \equiv \gamma_{\text{fix}}(\omega_{\text{pri}}^{\text{sy}})$ be a maximizer of $U_{P,\text{pri}}^{\text{sy}}(\cdot; \omega_{\text{pri}}^{\text{sy}})$. By hypothesis, $\gamma_f \geq \gamma_{\text{sy}}^{\text{risk}}(\omega_{\text{pri}}^{\text{sy}}) > 0$ and $\gamma_f < 1$, so γ_f is interior and satisfies $\partial_\gamma U_{P,\text{pri}}^{\text{sy}}(\gamma_f; \omega_{\text{pri}}^{\text{sy}}) = 0$. Suppose, towards a contradiction, that $\gamma_{\text{pri}}^{\text{sy}} \leq \gamma_f$.

If $\gamma_{\text{pri}}^{\text{sy}} < \gamma_f$, then

$$\begin{aligned}V(\gamma_f) &= U_{P,\text{pri}}^{\text{sy}}(\gamma_f; \omega(\gamma_f)) \\ &> U_{P,\text{pri}}^{\text{sy}}(\gamma_f; \omega_{\text{pri}}^{\text{sy}}) \\ &\geq U_{P,\text{pri}}^{\text{sy}}(\gamma_{\text{pri}}^{\text{sy}}; \omega_{\text{pri}}^{\text{sy}}) \\ &= V(\gamma_{\text{pri}}^{\text{sy}}).\end{aligned}$$

The first equality is the definition of V . The strict inequality holds because $\omega(\gamma_f) > \omega(\gamma_{\text{pri}}^{\text{sy}}) = \omega_{\text{pri}}^{\text{sy}}$ by (b) and $\partial_\omega U_{P,\text{pri}}^{\text{sy}} > 0$ at $\gamma_f > 0$ by (a). The weak inequality holds because

γ_f maximizes $U_{P,\text{pri}}^{\text{sy}}(\cdot; \omega_{\text{pri}}^{\text{sy}})$. The last equality is the definition of V at the equilibrium.

This contradicts the optimality of $\gamma_{\text{pri}}^{\text{sy}}$. If $\gamma_{\text{pri}}^{\text{sy}} = \gamma_f$, then

$$\begin{aligned} V'(\gamma_{\text{pri}}^{\text{sy}}) &= \partial_{\gamma} U_{P,\text{pri}}^{\text{sy}}(\gamma_f; \omega_{\text{pri}}^{\text{sy}}) + \partial_{\omega} U_{P,\text{pri}}^{\text{sy}}(\gamma_f; \omega_{\text{pri}}^{\text{sy}}) \omega'(\gamma_f) \\ &= \partial_{\omega} U_{P,\text{pri}}^{\text{sy}}(\gamma_f; \omega_{\text{pri}}^{\text{sy}}) \omega'(\gamma_f) > 0. \end{aligned}$$

The first equality is the chain rule, ω being differentiable by (b). The second equality uses the first-order condition of the fixed-mass optimum. The inequality combines $\partial_{\omega} U_{P,\text{pri}}^{\text{sy}} > 0$ from (a) with $\omega' > 0$ from (b).

A slightly larger share is feasible, since $\gamma_{\text{pri}}^{\text{sy}} \leq \gamma_f < 1$, and raises V , which contradicts the optimality of $\gamma_{\text{pri}}^{\text{sy}}$. Hence $\gamma_{\text{pri}}^{\text{sy}} > \gamma_f = \gamma_{\text{fix}}(\omega_{\text{pri}}^{\text{sy}})$. $\square$

Proof of Proposition 11

Throughout, $\gamma < 1$, so the plaintiff's exposure is strictly positive, and $\tau = 1/\sigma^2$ denotes trial precision.

(a) *Order the payments.* The good type's separation value lies between the two type-specific reservations:

$$\begin{aligned} e^{\rho_D \bar{x}_{P,g}} &< \pi_g e^{\rho_D \bar{x}_{P,g}} + (1 - \pi_g) e^{\rho_D \bar{x}_{D,g}} \\ &= e^{\rho_D \tilde{x}_g} \\ &< \pi_g e^{\rho_D \bar{x}_{P,g}} + (1 - \pi_g) e^{\rho_D \bar{x}_{D,b}} \\ &= e^{\rho_D \bar{x}_{P,b}}. \end{aligned}$$

The inequalities follow from (1), (2), and $\pi_g < 1$; the last equality is the bad type's indifference condition from Proposition 1.

Hence $\bar{x}_{P,g} < \tilde{x}_g < \bar{x}_{P,b}$ and $\tilde{x}_g < \bar{x}_{D,g}$. Moreover, the pooled reservation decreases continuously from the bad to the good type's reservation as the prior rises:

$$\partial_{\psi} \bar{x}_{P,\psi} = -\frac{1}{a_P} \frac{e^{-a_P \bar{x}_{P,g}} - e^{-a_P \bar{x}_{P,b}}}{\psi e^{-a_P \bar{x}_{P,g}} + (1 - \psi) e^{-a_P \bar{x}_{P,b}}} < 0.$$

The sign follows from $\bar{x}_{P,g} < \bar{x}_{P,b}$ in (2).

At priors zero and one the pooled reservation equals, respectively, $\bar{x}_{P,b} > \tilde{x}_g$ and $\bar{x}_{P,g} < \tilde{x}_g$. Continuity and strict monotonicity therefore give a unique threshold $\psi^*(\gamma, \tau) \in (0, 1)$ satisfying $\bar{x}_{P,\psi} = \tilde{x}_g$.

At and above the threshold, $\bar{x}_{P,\psi} \leq \tilde{x}_g < \bar{x}_{D,g}$, so the pooling equilibrium exists by part (b) of the proof of Proposition 1.

(b) *Compare the types' payoffs.* The bad type strictly prefers pooling because $\bar{x}_{P,\psi} <$

$\bar{x}_{P,b}$ for every positive prior. Since u_D is strictly increasing, the good type's comparison is

$$-e^{\rho_D \bar{x}_{P,\psi}} \geq -e^{\rho_D \tilde{x}_g} \iff \bar{x}_{P,\psi} \leq \tilde{x}_g \iff \psi \geq \psi^*(\gamma, \tau).$$

The second equivalence follows from the strict monotonicity in (a) and the definition of the threshold.

Thus the good type weakly prefers pooling exactly at and above the threshold and strictly prefers separation below it.

(c) *Apply the persuasiveness criterion.* At or above the threshold, both types make the pooled offer and weakly prefer pooling, the bad type strictly. Thus the unraveling is trivial and pooling is more persuasive than separation.

Conversely, at neither separating offer does a type who makes it strictly prefer separation: the bad type strictly prefers pooling, and the good type does not strictly prefer separation. Hence separation is not more persuasive.

Below the threshold, suppose the candidate pooling equilibrium exists. Only the good type makes $\bar{x}_{P,g}$, and she strictly prefers separation. The unraveling is therefore trivial and separation is more persuasive. If $\bar{x}_{P,\psi} > \bar{x}_{D,g}$, the candidate pooling equilibrium does not exist and there is no pooling equilibrium to compare.

Conversely, at the pooled offer the good type strictly prefers separation and blocks the comparison unless she unravels. If the plaintiff attributes her separating offer to her alone, (3) makes him indifferent, so acceptance with probability one is a best response:

$$\max_{\pi \in [0,1]} -[\pi e^{\rho_D \bar{x}_{P,g}} + (1 - \pi) e^{\rho_D \bar{x}_{D,g}}] = -e^{\rho_D \bar{x}_{P,g}} > -e^{\rho_D \bar{x}_{P,\psi}}.$$

The equality follows from (1); the inequality follows from $\bar{x}_{P,\psi} > \bar{x}_{P,g}$.

The good type therefore does not unravel, so pooling is not more persuasive. This proves part (i).

(d) *Apply the implicit function theorem.* Since $\partial_\psi \bar{x}_{P,\psi} < 0$, the threshold equation $\bar{x}_{P,\psi} - \tilde{x}_g = 0$ gives

$$\begin{aligned} \partial_\gamma \psi^*(\gamma, \tau) &= -\frac{\partial_\gamma \bar{x}_{P,\psi} - \partial_\gamma \tilde{x}_g}{\partial_\psi \bar{x}_{P,\psi}} \\ &= -\frac{\partial_\gamma (\bar{x}_{P,\psi} - \bar{x}_{P,g}) - \partial_\gamma (\tilde{x}_g - \bar{x}_{P,g})}{\partial_\psi \bar{x}_{P,\psi}}. \end{aligned}$$

Thus it remains to compare the derivatives of the pooled premium $\bar{x}_{P,\psi} - \bar{x}_{P,g}$ and the separation premium $\tilde{x}_g - \bar{x}_{P,g}$.

(e) *Sign the pooled premium.* Let $M(a) \equiv \log[\psi + (1 - \psi)e^{-a\Delta}]$. Then

$$\bar{x}_{P,\psi} - \bar{x}_{P,g} = -\frac{1}{a_P} \log\left[\psi + (1 - \psi)e^{-a_P(\bar{x}_{P,b} - \bar{x}_{P,g})}\right]$$

$$= -\frac{M(a_P)}{a_P}.$$

Here (2) gives $\bar{x}_{P,b} - \bar{x}_{P,g} = \Delta$.

$M(0) = 0$, and M is strictly convex because

$$M''(a) = \frac{\Delta^2 \psi(1 - \psi)e^{-a\Delta}}{[\psi + (1 - \psi)e^{-a\Delta}]^2} > 0.$$

Here $\psi \in (0, 1)$ and $\Delta > 0$.

The tangent-line inequality at $a_P > 0$, evaluated at zero, yields

$$\begin{aligned} 0 &= M(0) > M(a_P) - a_P M'(a_P) \\ \implies \partial_{a_P} \left[-\frac{M(a_P)}{a_P} \right] &= \frac{M(a_P) - a_P M'(a_P)}{a_P^2} < 0 \\ \implies \partial_\gamma (\bar{x}_{P,\psi} - \bar{x}_{P,g}) &= \rho_P \frac{a_P M'(a_P) - M(a_P)}{a_P^2} > 0. \end{aligned}$$

The last line uses $\partial_\gamma a_P = -\rho_P$.

(f) *Sign the separation premium.* Proposition 1 and the two reservation gaps give

$$\begin{aligned} e^{\rho_D(\bar{x}_g - \bar{x}_{P,g})} &= 1 + (1 - \pi_g)(e^{\rho_D(\bar{x}_{D,g} - \bar{x}_{P,g})} - 1) \\ &= 1 + \frac{(e^{\rho_D \bar{x}_{P,b}} - e^{\rho_D \bar{x}_{P,g}})(e^{\rho_D \bar{x}_{D,g}} - e^{\rho_D \bar{x}_{P,g}})}{e^{\rho_D \bar{x}_{P,g}}(e^{\rho_D \bar{x}_{D,b}} - e^{\rho_D \bar{x}_{P,g}})} \\ &= 1 + (1 - e^{-\rho_D \Delta}) \frac{1 - e^{-\rho_D(\bar{x}_{D,g} - \bar{x}_{P,g})}}{1 - e^{-\rho_D(\bar{x}_{D,g} - \bar{x}_{P,g})} e^{-\rho_D \Delta}} \\ &= 2 - e^{-\rho_D \Delta} - \frac{(1 - e^{-\rho_D \Delta})^2}{e^{\rho_D(\bar{x}_{D,g} - \bar{x}_{P,g})} - e^{-\rho_D \Delta}}. \end{aligned}$$

Here the last two equalities use (2).

The final expression is strictly increasing in the trial gap $\bar{x}_{D,g} - \bar{x}_{P,g}$, which falls with the share:

$$\begin{aligned} \partial_\gamma (\bar{x}_{D,g} - \bar{x}_{P,g}) &= -\frac{1}{2} \rho_P \sigma^2 < 0 \\ \implies \partial_\gamma (\bar{x}_g - \bar{x}_{P,g}) &< 0. \end{aligned}$$

The equality follows from Lemma 1; the implication uses monotonicity of the final expression and of the logarithm.

(g) *Conclude.* By (e) and (f), the numerator in (d) is positive, while its denominator is negative by (a). Hence $\partial_\gamma \psi^*(\gamma, \tau) > 0$, proving part (ii).

(h) *Increase the precision of the trial distribution.* The pooled premium in (e) is independent of precision, whereas the good type's trial gap decreases in precision:

$$\begin{aligned}\bar{x}_{D,g} - \bar{x}_{P,g} &= \frac{\rho_D + a_P}{2\tau}, \\ \partial_\tau(\bar{x}_{D,g} - \bar{x}_{P,g}) &= -\frac{\rho_D + a_P}{2\tau^2} < 0.\end{aligned}$$

By the monotonicity established in (f),

$$\begin{aligned}\partial_\tau(\tilde{x}_g - \bar{x}_{P,g}) &< 0, \\ \partial_\tau\psi^*(\gamma, \tau) &= \frac{\partial_\tau(\tilde{x}_g - \bar{x}_{P,g})}{\partial_\psi\bar{x}_{P,\psi}} > 0.\end{aligned}$$

The equality follows from the implicit function theorem, and both numerator and denominator are negative. This proves part (iii). $\square$