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Nuisance Litigation

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Abstract

This paper develops a simple but general model of nuisance litigation: negative-expected-value (NEV) suit and settlement in a full information context. This model accounts for the role of the merits, litigation costs, and bargaining power; incorporates complaints and answers in which parties' investments in factual investigation and pleading detail are endogenously determined; permits settlement negotiations both pre- and post-filing; and nests several existing models of NEV litigation as special cases. This model generates testable, counterintuitive, empirical predictions and facilitates normative analysis of policies addressed to litigation costs and the (alleged) problem of nuisance litigation. Applied to the plausibility pleading standard introduced by *Bell Atlantic Corp. v. Twombly*, this models predicts (consistent with available evidence) that plausibility pleading standards will have modest effects in deterring low-merit suits but, perhaps counterintuitively, may have harmful effects for both plaintiffs *and defendants* settling stronger cases.

1 Introduction

A persistent source of vexation for lawyers, both in practice and in the Ivory Tower, is "frivolous" or "nuisance" litigation. In the purest sense of the term, and the sense which I will employ herein, a nuisance suit is a suit filed because it has positive settlement value, notwithstanding the fact that *it is common*

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knowledge to the plaintiff and the defendant that the plaintiff's claim is weak or even meritless. The notion is that the prospect of expensive litigation drives the defendant to pay a settlement despite knowing that, were the case to go to trial, the defendant would probably or certainly win.

This is not to say that nuisance litigation exists or is a significant phenomenon; indeed, practitioners do not agree on whether it even is a serious problem![1] There is no shortage of anecdotes of multi-million dollar settlements of specious claims, and for years entities such as trade associations have lobbied for legal reforms directed to curbing frivolous litigation. But empirical evidence on the phenomenon of nuisance suits is scarce.

In this respect, theoretical work can help improve our understanding by establishing the conditions under which nuisance settlements might arise and by generating empirical predictions that can help academics test the prevalence of nuisance suits. The early conventional wisdom was that nuisance litigation should not occur, because nuisance suits are, by definition, negative-expected-value (NEV) suits, in that the cost to the plaintiff of litigating to judgment exceeds the expected judgment plaintiff would win. Thus, a plaintiff would rather drop her case than litigate. A series of papers beginning with Rosenberg and Shavell (1985) have developed models in which both parties are fully informed of the weakness of the plaintiff's claim, but the plaintiff is nonetheless able to extract a positive settlement by taking advantage of the defendant's costs of defending the suit. This literature on nuisance suits has generated a number of important insights, but most models have focused on explaining particular features of nuisance litigation. As a consequence, no unified model of nuisance litigation has emerged, and existing models do not attempt to explain even basic stylized facts about civil litigation.

Consider the seminal case on federal civil pleading standards, *Bell Atlantic Corp. v. Twombly* (550 U.S. 544 [2007]). In *Twombly*, the Supreme Court dismissed the complaint, requiring that the complaint meet a higher, "plausibility" standard of pleading than the liberal, "notice pleading" standard traditionally invoked by federal courts. A primary, explicit motivation for this ruling was concern about asymmetrical costs of litigation favoring the plaintiff that would lead to a nuisance settlement of a weak claim. Yet the *Twombly* complaint was lengthy and filled with factual detail, going far beyond providing mere notice to the defendants. This raises two puzzles: Why would the *Twombly* plaintiffs plead in detail at a time when the law did not require detailed pleading? And more to the point, if the plaintiffs were (as the Court implied) bringing a nuisance claim, whose value derives entirely from the asymmetrically high litigation costs of the defendant, why would the plaintiffs expend greater than necessary costs on detailed pleading, running up their own costs in a case that they have no illusions of winning? In this paper,

[1] See, for example, Bone (1997) for a discussion the rhetoric and lack of evidence surrounding the issue of frivolous litigation.

I attempt to explain this and other potential puzzles about the oft-alleged, but poorly understood, phenomenon of nuisance suits and settlements.

My objective in this paper is to develop a simple, but general, model of nuisance litigation that incorporates existing insights but better describes actual patterns of litigation and generates testable empirical predictions. Existing models offer a host of important results. Rosenberg and Shavell (1985) and Bebchuk (1996) showed that the sequencing of litigation costs affects the viability of NEV claims. Croson and Mnookin's insight can be stated more generally as recognizing that the sequencing of the parties' litigation costs can be *endogenously* determined by the parties themselves, for strategic reasons. Miceli (1993), Farmer and Pecorino (1998), and others showed that both parties can employ strategies to commit to pursue, or to commit to refuse, nuisance settlements. Schwartz and Wickelgren (2009) showed that even in a full-information environment, an optimal strategy of stonewalling and delay can prevent settlement. These models (and mine) recognize and embody the principle noted by Rosenberg and Shavell (2006, p. 43): the strategies employed in NEV litigation are examples of "the well-appreciated general conclusion that a party may benefit by removing future options, since this form of commitment can have advantageous incentive effects."

My model below captures each of these insights, generalizes and extends them, maps them onto real-life features of civil litigation, and generates testable empirical predictions. The model takes the form of a sequential, full-information game, which incorporates endogenously determined costly pleading and choice of pleading detail, as well as an indefinite number of opportunities to negotiate settlement outside of litigation. Rosenberg and Shavell (1985), Bebchuk (1996), Croson and Mnookin (1996), and Schwartz and Wickelgren (2009) all nest as special cases of my model.

This model explains several putative features of nuisance litigation that previous models have either not accounted for, or been unable to explain:

1. Filing of suits, rather than pre-suit settlement, in a full-information context;
2. Costly and detailed pleading by plaintiffs, even in a nuisance-suit context;
3. Low cost, sparse pleading by defendants, even in a nuisance-suit context;
4. Nuisance settlements that exceed the cost to defendant of filing an answer;
5. Costly filing of suits without efforts by plaintiffs to obtain settlements pre-suit in specific litigation settings.

These patterns emerge endogenously in a simple model of suit and settlement in which the parties can determine the timing of their expenditures on litigation.

The remainder of this paper proceeds as follows: I review existing models of NEV litigation in Section 2. I describe my model informally and present a numerical example in Section 3. I present the formal model with proofs, discussion, and extensions in Section 4.

Section 5 considers the testable empirical predictions of the model. While not all can be confirmed or refuted without further research, some predictions, such as detailed pleading by some plaintiffs and minimal pleading detail from defendants, appear consistent with established stylized facts.

While the focus of this paper is positive, the model I present is broadly applicable to normative questions about nuisance litigation. In Section 6, I show how my model can generate predictions about the effects of the plausibility pleading standard ushered in by *Bell Atlantic Corp. v. Twombly* (550 U.S. 544 [2007]) on nuisance litiation, including potentially surprising negative effects on both plaintiffs and defendants.

Section 7 concludes.

2 Literature Review

The literature begins with Rosenberg and Shavell (1985). Their logic is straightforward. It is costly for a defendant to respond to the plaintiff's complaint, and failure to respond will lead to a default judgment against the defendant. Thus, the defendant will be willing to settle with a plaintiff for any amount less than the cost of responding to the plaintiff's complaint, *even if the plaintiff's claim is wholly meritless*. Because of this, the plaintiff with a NEV claim will sue, so long as the cost of filing the complaint is less than the amount of the settlement the plaintiff would be able to extract.

The central insight of Rosenberg and Shavell (1985) is that a plaintiff with a NEV claim can succeed at obtaining a nuisance settlement. One can question the empirical relevance of this model, however, for two reasons. First, all a defendant has to do to avoid a default judgment is file an answer. As Bone notes, because "answering is seldom more costly than filing, the model predicts that few frivolous plaintiffs will find it worthwhile to sue" (Bone 2003, p.150). Indeed, Bone (1997, p. 538) points out that in a full-information environment, the cost to the defendant of admitting or denying the allegations of the complaint should be trivial. Nor does observed practice jibe with the model. A stylized fact about litigation practice is that complaints are sometimes (not always) highly detailed accounts of the facts related to the plaintiff's claim, but answers are almost invariably boilerplate documents denying the plaintiff's central allegations or asserting a lack of information upon which an admission or denial can be made. Consequently, it is hard to imagine a scenario in which the Rosenberg and Shavell model maps on to observed patterns of litigation.

Second, and more fundamentally, the logical extension of the Rosenberg

and Shavell model—and every subsequent model of nuisance claims in a full-information environment—is to predict nuisance *settlements* but no nuisance *suits*. In a full-information environment, why would the parties wait for a filed complaint before settling, when they could settle the claim pre-complaint and save the cost of filing? Yet, claims of "abusive" or "frivolous" litigation by practitioners revolve around accounts of *filed* lawsuits that are frivolous. If nuisance litigation is a real phenomenon, models of litigation should explain this.

Bebchuk (1996) provides a more general approach to the same question. Bebchuk considers the possibility that litigation is divided into stages and the costs of litigation are divided among these stages. In each stage, one (perhaps randomly chosen) party has the opportunity to propose a settlement, which the other party can accept or reject. In this model, even if a lawsuit taken as a whole is NEV, if the costs are split among the stages of litigation, it is possible that, *relative to the costs of litigating the very last stage*, the plaintiff's claim is PEV. Thus, the plaintiff has a credible threat to go to trial at the last stage of litigation, and the defendant will be willing to settle the case then. If the plaintiff has sufficient bargaining power, this settlement will be large enough that in the second-to-last stage of litigation, the plaintiff will also have a credible threat to move forward, thereby making the defendant willing to settle in that stage as well. By backwards induction, one sees that the plaintiff has a credible threat to sue in the first period, and the parties will settle immediately.

This result retains the central insight that NEV claims can generates positive settlements, and it overcomes the concern that the Rosenberg and Shavell model implies that the cost of a boilerplate answer places a ceiling on the settlement value of a NEV claim. It retains, however, the prediction that all nuisance claims settle without a claim being filed. It also cannot explain truly "frivolous" litigation—claims which have no merit at all. For the backwards induction to generate a positive settlement, the expected judgment at trial must be large enough to outweigh the plaintiff's costs in the final period of litigation, and this is impossible for a suit with zero merit.

Schwartz and Wickelgren (2009) claim that NEV claims can never generate nuisance settlements for plaintiffs. In the Schwartz and Wickelgren model, an indefinite number of offers and counter-offers can be made costlessly during litigation. Because of this, they argue, the plaintiff will not be able to extract a settlement during litigation large enough to make the initial threat to sue credible. This result challenges the claim that nuisance litigation *exists at all*, let alone is a serious problem. Yet this model has difficulty gaining traction as a model of *litigation* rather than a model of *negotiation*; it models costly litigation activity as the plaintiff's *outside option*, but of course this is only true before a suit is filed. Once litigation is filed, the parties incur litigation costs regardless of the progress of negotiations, and the true "outside option"

for the plaintiff is dropping the suit.

A recurring argument that nuisance settlements are not possible is that defendants can simply commit to a policy of refusing to settle and, by developing a repuation for doing so, will deter nuisance claims (Bone 1997, p. 540; Miceli 1993). This, too, is a key insight into nuisance litigation, but ultimately fails to resolve either theoretical or empirical assertions about nuisance claims—the problem is that the same argument can be made to prove that nuisance litigation *is* possible, because plaintiffs can simply commit to a policy of refusing to be deterred (Farmer and Pecorino 1998; see also Chen 2006). These models thus leave unresolved the question of whether nuisance claims can be viable, even given reputation-based strategies.

Closely related to this last point, and closest in spirit to the model I develop, is the model of Croson and Mnookin (1996). While papers since Rosenberg and Shavell (1985) have recognized that sunk costs can generate positive settlements for NEV claims (see Rasmusen [1998]), Croson and Mnookin were the first to present a model in which the amount of costs sunk were endogenously determined. They argue that a plaintiff can create a credible threat to sue by hiring an attorney on retainer, so that part of the plaintiff's cost of litigating is sunk. If the plaintiff's remaining litigation costs are less the expected judgment from litigation, the plaintiff will have a credible threat to sue and can thus induce a settlement. Like the reputation-based arguments, however, Croson and Mnookin (1996) predict no nuisance suits. They also recognize that a defendant could employ a symmetrical cost-sinking strategy. Again like the reputation-based models, Croson and Mnookin's model leaves unresolved the question of whether the plaintiff or the defendant will win the race to sink costs and deter the other from executing their preferred strategy.

Looking at these models, one might ask: To what extent can the parties control the timing and order of litigation costs? Do features of civil procedure permit the strategies identified in these (highly abstracted) models? Does the sequencing of civil litigation make it easier for one party or another to sink costs to precipitate or deter settlement? Creating a correspondence between the models and practice is a natural next step, which I attempt herein.

3 Informal Treatment

3.1 Overview of the Model

The model represents litigation as a sequential, full information game in the spirit of Rosenberg and Shavell (1985) and Bebchuk (1996). The goal of this model is to represent the basic dynamics of pleading and settlement in a way that is both reasonably realistic and analytically tractable. This model is set

up as follows: A potential plaintiff has a claim against a potential defendant.[2] The amount at stake and plaintiff's likelihood of winning in court are known to both parties, as are the parties' costs of litigation. While this model applies to all claims, whether PEV or NEV, the interesting cases for our purposes involve NEV claims. Except where otherwise noted, the discussion below will assume a NEV claim.

The total cost of litigating a case to judgment is assumed to be fixed, but the plaintiff's cost of filing a complaint is not. The cost of filing a complaint includes both the (presumably nominal) filing fee charged by the court and the cost of preparing the complaint. The plaintiff can choose how much to spend on the complaint; a long, detailed complaint that reflects thorough preparation for litigation will cost more than a bare-bones complaint that describes the plaintiff's claim in a cursory manner.[3] Importantly, much of the work that a plaintiff would have to do later in the litigation can be done before filing—collecting and organizing evidence, conducting legal research, drafting memoranda, organizing a litigation team, and so on. These pre-litigation costs thus reduce the cost that would have to be spent during litigation.

The defendant may also have the ability to sink its litigation costs in advance of litigation. This model allows for the defendant to sink its litigation costs by paying a retainer to its lawyers in advance of the plaintiff's opportunity to demand a settlement or draft a complaint.[4]

In this model, settlement is possible either before or after suit is filed. Before suit is filed, the parties incur no litigation costs, but alternate in having the opportunity to make an offer, which the other can either accept or reject. The only cost that this period of negotiation imposes is due to the fact that

[2]For brevity, I omit "potential" in describing plaintiffs and defendants herein, even when describing pre-litigation behavior.

[3]I do not, initially, require the possibility of a motion to dismiss for failure to state a claim. Instead, the model begins by assuming that a filed complaint will *never* be dismissed. My focus is on the extent to which low-merit cases are (or are not) screened out by the deliberate, strategic behavior of potential litigants, even in the absence of *any* gatekeeping function of the courts at the pleading stage. One could also treat this absence of any risk of dismissal as a rough approximation of the idealized conception of "notice pleading." Implicit in this setup is also the assumption that Rule 11, which sanctions pleadings which contain frivolous claims or "needlessly increase the cost of litigation," or its state-court counterparts do not foreclose filings in all of the scenarios considered herein.

[4]Implicit in this sequencing of events are the notions that the nuisance claim arises after the defendant has an opportunity to pay a retainer, and the plaintiff cannot act until the nuisance claim arises. This sequence seems to fit the typical narrative of nuisance litigation: the defendant is a large corporation frequently subject to lawsuits, and which therefore expects to face nuisance claims even if it currently faces none. As such, it can prepare for litigation in advance of a discrete claim. The plaintiff is an individual and cannot act until some she has suffered some (real or perceived) legal injury. Importantly, though, the results of the model are not sensitive to these assumptions. As I discuss in Section 4.3.3, a model in which plaintiff can pay a retainer in advance of a specific claim arising is simply a special case of the model presented here.

parties discount the future relative to the present; thus, a settlement dollar today is worth more to the plaintiff than a settlement dollar tomorrow.

In any given period in which litigation has not yet commenced and the parties have been able to exchange offers, the plaintiff chooses whether or not to file a complaint. If the plaintiff files suit, then the settlement environment changes. The parties still have the opportunity to settle, but now failure to settle is costly in the sense that the parties incur litigation costs if they do not settle. If the parties do not settle, they pay their litigation costs, and the court enters judgment. (Recall that because this is a full-information model, the expected judgment is common knowledge.)

What is the solution to this model? I present a rough outline here, omitting nuances and qualifications that will be made explicit during the formal treatment of the model.

The first question to consider is whether the plaintiff has a credible threat to sue, given that her claim is NEV. If she has no credible threat to sue, the defendant will never agree to a positive settlement amount, and the plaintiff will abandon the claim. Here is where pleading comes in. By investing heavily in pre-complaint investigation, the plaintiff is able to sink the costs of discovery that she otherwise would have to bear after filing. Conditional on having sunk these costs, the plaintiff's expected judgment is large enough relative to the *remaining* costs of litigation that she now has a credible threat to sue. By voluntarily undertaking highly detailed pleadings, the plaintiff makes these sunk costs observable to the defendant, thereby making credible the threat to continue litigating through to judgment.[5]

Thus, a plaintiff who sinks litigation costs and then files a detailed complaint may be able to obtain positive settlement from the defendant, despite having a NEV claim. The next question is whether the plaintiff will file a complaint or the parties will settle without a lawsuit.

The dynamics of settlement before filing are very different than after filing. Before filing, neither party incurs litigation costs if they fail to settle. The plaintiff nonetheless wants to settle, because future payments are discounted. But, as Schwartz and Wickelgren (2009a) and Spier (1992) have pointed out, the defendant wants to delay, and for the same reason: paying a dollar tomorrow is better than paying a dollar today. The defendant can only gain through delay, and therefore the defendant's optimal negotiation strategy pre-filing is to refuse every settlement offer from the plaintiff, solely for the purpose of delay. The equilibrium strategy in this situation is thus an inefficient one: in the first period, the plaintiff files a costly, detailed complaint, and in the second period the parties settle.

[5]For brevity, I will occasionally refer to "going to trial" rather than "taking the claim to judgment." Though the literature tends to refer to "trial," I prefer "judgment," given that few claims go to trial, and in the nuisance suit context, the real endgame is summary judgment anyway. Nonetheless, "trial" is a convenient shorthand.

Given that a plaintiff can, under some conditions, use detailed pleading to sink litigation costs and generate nuisance settlement value in a NEV claim, the question arises whether the defendant can preempt this strategy through sinking costs of its own. The idea is that by sinking part of its litigation costs, the defendant reduces the expected settlement that the plaintiff will be able to obtain (because saved litigation costs create the surplus from settlement that the parties share). So long as the loss from paying these litigation costs up front outweighs the costs of paying a nuisance settlement, the defendant benefits from this sunk-cost strategy. As I show below, this strategy can deter some, but not all, NEV claims.

3.2 Numerical Example

Imagine a single (potential) plaintiff and a single (potential) defendant. The plaintiff has a frivolous claim (it is worth $0), and it would cost plaintiff $100 to litigate the claim to judgment. It would cost the defendant $500 to defend the claim. The plaintiff and defendant have equal bargaining power, and they discount the future, such that a receiving dollar tomorrow is no better than receiving $0.99 today.

For the moment, set aside the possibility of the defendant paying a retainer to deter settlement, or the possibility of pre-filing settlement, or the possibility of defendant filing a detailed answer. I will show in a moment that none of these possibilities will occur. But to be concrete, let us begin with what the plaintiff can do to obtain a settlement.

The plaintiff creates a credible threat to sue by front-loading litigation costs. Note that the plaintiff has a NEV claim—she expects to win $0 in court, but pay $100 in litigation costs. But the plaintiff will spend $100 preparing for litigation and drafting a detailed complaint. This eliminates the cost of litigating to judgment for the plaintiff.[6] In the second period of litigation, while the plaintiff would expect to win a judgment of $0, it would be costless to continue litigating. Thus, the plaintiff uses detailed pleading to create a credible threat to litigate to judgment.

This credible threat will generate a positive settlement. Given that the plaintiff is willing to take the case to judgment, the defendant stands to lose $500 in litigation costs if it does not settle. Thus, the defendant is willing to pay up to $500 to settle the case. If the case goes to judgment, the plaintiff pays no additional litigation costs but wins no judgment, so the plaintiff is willing to accept as little as $0 to settle the case. With equal bargaining power of the parties, they will split the difference and settle for $250. Given

[6]Note that the sorts of costs that can't be front-loaded—trial preparation, reviewing defendant's production in discovery, responding to a summary judgment motion—are not litigation costs to a plaintiff with a frivolous suit, because the plaintiff will abandon the case once the litigation reaches the summary judgment stage.

that the plaintiff spent $100 preparing the complaint, the plaintiff's net payoff is $150.

Now let us consider whether the defendant can do better by sinking litigation costs when preparing an answer. The answer is no. *The defendant, unlike the plaintiff, will not use detailed pleading.* As noted above, without a detailed answer the plaintiff settles for a net gain of $150. The defendant can prevent settlement by reducing the plaintiff's payoff to zero—but defendant can only do this by sinking all $500 of its litigation costs. Anything less, and the plaintiff can still extract a positive settlement upon the threat of going to judgment and forcing the defendant to spend its remaining litigation costs. The defendant is better off paying a fraction of its litigation costs in settlement than paying all of them to prevent settlement.

Now move backwards in time and consider whether the parties will settle before the plaintiff files suit. The answer again is no. *The parties will not settle without a filed lawsuit.* Given that filing suit costs the plaintiff $100, she would like to delay filing and instead settle without bearing the cost of preparing a detailed complaint. For example, the plaintiff could delay filing and offer a settlement of $200 to the defendant. This would make both parties better off than if the plaintiff filed suit at a cost of $100 and then obtained a $250 settlement from the defendant. But defendant, knowing that the plaintiff will not file suit until she hears defendant's response, can do even better. The defendant will counteroffer with $149. At this point, the plaintiff can accept and gain $149 right away, or file suit and net $150 in the future—which would be worth only $148.50 due to discounting. In other words, attempting to negotiate makes the plaintiff worse off than filing suit right away. Why does negotiation break down? A strategy of delay benefits the defendant by gradually reducing the present value of the settlement defendant will eventually have to pay. The plaintiff's best option, therefore, is not to negotiate at all before filing suit, but to file a detailed complaint right away. This forces the defendant's hand. With litigation costs on the line, the defendant is willing to settle.

Finally, consider the possibility that the defendant can preempt the nuisance claim by paying a retainer to attorneys before the plaintiff even appears on the scene. *In this example, the defendant cannot deter the plaintiff by sinking its costs.* In order for the defendant to deter suit, the retainer must be sufficient to reduce the expected payoff from filing suit and then settling to zero. To do this, the defendant must pay a retainer of $300. With $300 of the defendant's $500 in litigation costs already sunk, the plaintiff can demand no more than $200 in settlement after filing suit. (The defendant will still demand $0.) This reduces the expected value of settlement to $100, which merely offsets the cost of filing the complaint and leaves the plaintiff with an expected net payoff of $0. A retainer of $300, though, is more than the cost of settlement! Thus, in this example, sinking costs allows the plaintiff to make

a credible threat to bring a NEV claim, but does not allow the defendant to deter the threat.

Note, however, that if the asymmetry in litigation costs were not as great, the defendant could deter nuisance settlements by paying a retainer. If, for example, defendant's litigation costs were only $300, the expected settlement in litigation would be $150. By paying a retainer of only $100, the defendant could reduce the expected settlement to $100 (equal to the plaintiff's cost of filing a credible suit) and deter the threat of a nuisance settlement.

4 Formal Treatment

4.1 Basic Model Framework

There is a dispute between a (potential) plaintiff P and (potential) defendant D. The potential monetary judgment at stake is J, and both plaintiff and defendant know that plaintiff has probability of winning at trial equal to π. The expected judgment at trial is thus πJ. Party i has cost of litigation C_i. The cost of litigation is party-specific to reflect potential asymmetries in the cost of pre-trial litigation.

Crucially, one component of the total cost of litigation for the plaintiff is the cost of filing F, which reflects the plaintiff's cost of drafting the complaint, as well as the plaintiff's investment in pre-complaint investigation and informal discovery. I treat the filing fee to be nominal, and thus the plaintiff can choose any $F \in [0, C_P]$. The plaintiff has control over whether to devote resources to factual investigation in the pre-complaint stage of the dispute, rather than spending those resources (and developing those facts) during litigation. The plaintiff's cost of litigation, C_P, is thus reduced by the cost of pleading F. Past models, such as Rosenberg and Shavell (1985), have treated F as an exogenous constant. A key change in this first model is allowing plaintiff to choose F. F in turn determines the amount of factual and legal detail in the complaint. The complaint in the mechanism by which F is made observable to the defendant.

The game is divided into two stages: pre-litigation and litigation. The pre-litigation stage is divided into an indefinite number of periods, for which the parties share a per-period discount factor δ. The parties alternate making offers of settlement, beginning with the plaintiff. There is no cost of negotiation in this stage. Every other period, after the defendant has had an opportunity to accept an offer from the plaintiff or refuse and counteroffer, the plaintiff has the option to file a complaint at cost F.[7]

[7]The structure of this sub-game reflects the logic of Schwartz and Wickelgren (2009). They argue that a plaintiff who has made a settlement demand cannot decide whether or not to invoke her outside option until she hears defendant's response. Yet in real life,

As the very beginning of the first period of the game, the defendant has an opportunity to pay a retainer $R \in [0, C_D]$ for legal fees. This is a non-refundable pre-payment for legal services that offsets the defendant's litigation costs.[8]

The filing of a complaint begins the litigation stage. The defendant then files an answer at cost $A \in [0, C_D - R]$.[9] Spending on A reduces the defendant's cost of litigation C_D.

There is a single period of litigation, in which the plaintiff has a probability α, and defendant has a probability $(1-\alpha)$, of making a take-it-or-leave-it offer of settlement. The discussion so far has assumed $\alpha = 0.50$ (i.e., each party has an equal number of opportunities to make a settlement offer), which I will continue to do. For sake of generality, however, the proofs below with allow for arbitrary bargaining power $\alpha \in [0, 1]$.

If the parties do not settle, the plaintiff and defendant spend remaining litigation costs $C_P - F$ and $C_D - A - R$, respectively, and the court enters judgment of πJ. Note that I do not model the post-filing negotiation process in detail; because the plaintiff's outside option in litigation is to drop the suit and both parties incur litigation costs, the model for bargaining in litigation is simply an alternating-offer split-the-dollar game with a positive surplus from settlement and an outside option of zero. This game is easily approximated by a single period game with equal bargaining power.[10]

4.2 Basic Model Results

Proposition 1. The sequential, subgame perfect equilibrium given $C_P > \pi J$ (i.e., the plaintiff has a NEV claim), will be characterized as follows (star

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defendant's response need not be limited to "I accept" or "I reject"; instead, the defendant's response could be a counteroffer. For this reason, I employ a version of an alternating offer game is one in which the plaintiff can only invoke the outside option in *every other* period—only after the periods in which the defendant has the right to make a settlement proposal.

[8]Note that the retainer is bounded above by the defendant's total litigation costs; sinking the expected judgment is not possible. This is because sinking of the expected judgment by paying it to a third party who is then liable for the judgment is no more than an assignment of the claim, which simply shifts the commitment problem to the third party. In any event, relaxing this constraint on R has little effect on the results. Note, too, that I treat the defendant's retainer decision as preceding, but in the same period as, the first opportunity for the plaintiff to seek settlement or file suit. Thus, there is no need to discount to present value when comparing a retainer to a first-period settlement amount. In reality, retainers may precede litigation by months or years. Accounting for this in the model adds complexity but has no meaningful effect on the results.

[9]Fixing $F = \bar{F}$ and $A = \bar{A}$ allows one to nest the model of Rosenberg and Shavell (1985) in this model.

[10]In the appendix, I expand the model to allow for multiple periods of litigation. This extension allows one to nest the model of Bebchuk (1996) in this model.

superscripts denoting equilibrium values):[11]

(1a) Settlement. If the plaintiff files suit and has a credible threat to go to judgment, the parties will immediately settle for $S^*(R) = \alpha(\pi J + C_D - R)$.

(1b) Answer. A defendant will never file a detailed answer: $A^* = 0$.

(1c) Complaint. If a plaintiff files suit, the plaintiff will spend $F^* = C_P - \pi J$ in preparing the complaint.

Proof. Once the defendant has answered and the plaintiff has a credible threat to go to judgment, the defendant's payoff if the case go to judgment will be $-\pi J - C_D + A + R$. Defendant is willing to pay up to this amount in settlement to avoid going to judgment. With likelihood α, the plaintiff makes a take-it-or-leave-it settlement offer. In this event, the plaintiff demands this amount, and the defendant pays. With likelihood $(1-\alpha)$, the defendant makes a take-it-or-leave-it settlement offer. Given that the plaintiff will have payoff $\pi J - C_P + F$ if the case goes to judgment and zero if the plaintiff drops the case (the cost F is sunk at this point), the defendant will offer $(\max\{0, \pi J - C_P + F\})$ and the parties will settle. (If the defendant offers less than zero, the plaintiff will simply drop the case, which is equivalent to a settlement at zero.) The expected settlement is thus $S^* = \alpha(\pi J + C_D - A - R) + (1-\alpha)\max\{0, \pi J - C_P + F\}$.

Given that after answering, the defendant will settle for S^*, the defendant's payoff will be $-S^* - A = -\alpha(\pi J + C_D - R) - (1-\alpha)(\max\{0, \pi J - C_P + F\} + A)$. Defendant maximizes this payoff by choosing $A^* = 0$. (Proposition 1b QED.)

After filing suit, plaintiff's expenditure F is sunk, and going forward plaintiff's payoff from going to judgment is $\pi J - C_P + F$ and plaintiff's payoff from dropping the suit is 0. Thus, plaintiff will only have a credible threat to go to judgment if $\pi J - C_P + F \geq 0$, which implies $F \geq C_P - \pi J$.

With a credible threat to go to judgment, plaintiff can obtain the settlement described above, $S^* = \alpha(\pi J + C_D - A - R) + (1-\alpha)\max\{0, \pi J - C_P + F\}$. The plaintiff's net payoff is therefore $\alpha(\pi J + C_D - A - R - F) + (1-\alpha)(\pi J - C_P)$ for $F \geq C_P - \pi J$. Since the plaintiff's net payoff is decreasing in F, conditional on having a credible threat to go to judgment (and filing suit rather than dropping the claim being optimal), the plaintiff chooses $F^* = C_P - \pi J$. (Proposition 1c QED.)

Given Propositions 1b and 1c, the optimal settlement $S^*(R) = \alpha(\pi J + C_D - R)$. (Proposition 1a QED.)

Comment: As shown below, plaintiff will only file suit in equilibrium if $R^* =$

[11] Note that for simplicity of notation, I assume that a plaintiff indifferent between filing suit or not will not file suit. I assume that a plaintiff indifferent between continuing a suit and dropping a suit will continue the suit. I assume that a party indifferent between settling and not settling will settle. These assumptions dealing with knife-edge conditions allow me to define equilbrium conditions precisely (with equalities rather than inequalities), but otherwise do not affect the analysis.

0. Thus, if $S^* > 0$, $S^* = \alpha(\pi J + C_D)$.

Proposition 2: Credibility. The plaintiff will have a credible threat to sue if the following *Credibility Constraint* holds:

$$\alpha(C_D - R) - C_P + (1 + \alpha)\pi J > 0 \tag{1}$$

If this condition is not met, the plaintiff does not sue or otherwise press the claim, and the defendant does nothing.

Proof. From Propositions 1a and 1c, plaintiff's payoff from settlement is $\alpha(C_D - R) + (1 + \alpha)\pi J - C_P$. Thus, plaintiff is only willing to sue if suit and settlement is better than dropping the claim, i.e., $\alpha(C_D - R) + (1+\alpha)\pi J - C_P > 0$. QED.

Proposition 3: Immediate Filing. If plaintiff files suit, plaintiff files immediately in the first period. If a settlement greater than zero occurs, it occurs in litigation.

Proof. If plaintiff has no credible threat to sue, plaintiff abandons the claim (or equivalently, the parties settle for zero.) If plaintiff has a credible threat to sue, then the period in which suit if filed, the parties settle for $S^*(R^*)$, yielding plaintiff a net payoff of $S^* - F^*$. Thus, all that remains to be proven is that if there is a credible threat to sue, plaintiff cannot do better than suing immediately.

Assume that the plaintiff does not sue in the first period, but instead offers settlement $S' \geq S^* - F^*$. (Plaintiff cannot be better off offering $S' < S^* - F^*$.) Given that plaintiff cannot file suit until defendant has counteroffered, defendant's optimal response is to reject the offer and in the second period counteroffer $S'' = \delta(S^* - F^*) < S'$. Plaintiff will accept this offer, since plaintiff can do no better by filing suit, and continuing to negotiate will generate a new counteroffer worth $\delta S''$. Thus, plaintiff is strictly worse off by attempting to settle pre-filing. QED.

Proposition 4: Retainer. The defendant will pay a strictly positive retainer

$$R^* = \left(\frac{1 + \alpha}{\alpha}\right)\pi J - \frac{C_P}{\alpha} + C_D \tag{2}$$

if the plaintiff's credibility condition is met for $R = 0$ and two conditions are met. First, the *Optimality Constraint* must hold:

$$\alpha(1 - \alpha)(\pi J + C_D) \leq C_P - \pi J \tag{3}$$

Second, the *Feasibility Constraint* must hold:

$$(1 + \alpha)\pi J \leq C_P \tag{4}$$

Otherwise, defendant pays no retainer $R^* = 0$.

Proof. The net payoff to defendant if defendant chooses R such that plaintiff still sues is $-\alpha(\pi J + C_D) - (1-\alpha)R$, which is decreasing (more negative) in R. Thus, unless defendant can deter filing all together, defendant will choose $R^* = 0$.

To deter the plaintiff from filing, defendant must pay a retainer R sufficient to reduce plaintiff's expected payoff from suit to zero. From Proposition 2, this is R such that $\alpha(C_D - R^*) + (1+\alpha)\pi J - C_P = 0$, which is $R^* = \left(\frac{1+\alpha}{\alpha}\right)\pi J - \frac{C_P}{\alpha} + C_D$. This value is strictly positive so long as $S^*(0) - F^* > 0$, which is met if and only if the credibility condition obtains.

Defendant will only do this, however, if it yields a better payoff than simply settling. Thus, to choose $R > 0$, it must be that $R^* \leq S^*(0)$. This implies $\alpha(1-\alpha)(\pi J + C_D) \leq C_P - \pi J$. This optimal $R^* > 0$ is feasible if $R^* \in [0, C_D]$, which implies $(1+\alpha)\pi J \leq C_P$. QED.

Comment. Although the analysis has assumed a NEV claim, applying this model to PEV claims is straightforward. From the results above (and keeping in mind the constraint that F cannot be negative), it immediately follows that for a PEV claim ($C_P \leq \pi J$) the following equilibrium values obtain: $S^{PEV} = \pi J + \alpha C_D - (1-\alpha)C_P$, $A^{PEV} = 0$, $F^{PEV} = 0$, and $R^{PEV} = 0$. A plaintiff with a PEV claim always has a credible threat to sue, and in this model always files suit, at which time the parties then immediately settle.

4.3 Extensions to the Model

4.3.1 Sinking Costs in a Game with Multiple Plaintiffs

The basic model above assumes a game between a single plaintiff and a single defendant. One might imagine that in reality, a single defendant may face many potential plaintiffs with nuisance-value suits. If so, then investing in retained legal services may become even more attractive to the defendant. This depends crucially, however, on the extent to which the plaintiffs act independently or can coordinate their actions.

To formalize this idea, take the basic model, but with $N \in [1, \infty)$ identical plaintiffs for whom the credibility constraint is met if $R = 0$. Assume that each plaintiff must decide independently and sequentially whether to demand settlement. Define R_N^* to be the optimal retainer given N plaintiffs (i.e., $R_1^* = R^*$).

Proposition 5: Multiple Independent Plaintiffs. So long as the defendant invests $R_N^* = R^*$, i.e., pays a retainer sufficient to deter one plaintiff, then defendant deters all plaintiffs. Defendant chooses $R_N^* = R^*$ if the following two conditions are met:

Optimality Constraint: $\alpha(1 - N\alpha)(\pi J + C_D) \leq C_P - \pi J$.

Feasibility constraint: $(1+\alpha)\pi J \leq C_P$.

Otherwise, defendant chooses $R_N^* = 0$.

Proof. If R_N^* deters the first plaintiff, the retained legal services are not consumed. Thus, when the second plaintiff must decide whether to press his claim, he is identically situated to the first plaintiff, who was (by construction) deterred. For this reason, the second plaintiff and all subsequent plaintiffs are deterred. Thus, so long as the retainer deters the first plaintiff, it deters all plaintiffs. Further, a retainer larger than necessary to deter one plaintiff is never optimal, as it increases defendant's costs without changing the expected total settlement payments (zero).

From the Proof of Proposition 4, note that a retainer that does not deter a single plaintiff is never optimal. Thus, the defendant's choice is between $R_N^* = R^*$, which deters all plaintiffs, and $R_N^* = 0$, which leads to N settlements, each for S^*. Paying R^* is optimal if $R^* \leq NS^*$. This implies that $R_N^* = R^*$ is optimal if $\alpha(1 - N\alpha)(\pi J + C_D) \leq C_P - \pi J$. Given the requirement that $R^* \in [0, C_D]$, the optimal value of R_N^* is only feasible if $R^* \leq C_D$. This implies $(1+\alpha)\pi J \leq C_P$. QED.

Numerical Example. Take the example from Section 3.2 where $\alpha = 0.5$, $\pi J = 0$, $C_P = 100$, and $C_D = 500$. As shown there, if the defendant faces a single potential plaintiff, sinking defendant's litigation costs will not be optimal. Yet if this defendant faces two plaintiffs who must independently decide, one at a time, whether to threaten suit, each plaintiff will be deterred by $R_N^* = 300$. A retainer is optimal; the defendant would rather pay a retainer of \$300 than two \$250 settlements.

Proposition 6: Multiple Coordinated Plaintiffs. If it is optimal and feasible when $N = 1$ for defendant to pay retainer R^*, then defendant pays retainer $R_N^* = NR^*$ and deters all plaintiffs. Otherwise, defendant chooses $R_N^* = 0$.

Proof. When plaintiffs can coordinate their actions, they will all simultaneously file suit so long as the expected value of suit is greater than zero. Given this, the retainer must be sufficient to reduce the expected value of suit for each plaintiff to zero, conditional on all plaintiffs suing. This is achieved only with $R_N^* = NR_N^*$. Thus, the optimality and feasibility conditions reduce to the conditions for $N = 1$, given in Proposition 4. QED.[12]

[12]There is an intermediate case involves multiple plaintiffs who act independently but move simultaneously, rather than sequentially. In this game, for $R > 0$, there are three possible equilbria: no plaintiffs bring claims, all plaintiffs bring claims, or all plaintiffs employ a mixed strategy. (The latter two are ruled out if the defendant pays retainers sufficient to deter each plaintiff individually; i.e., given N plaintiffs, the defendant sinks costs equal to NR^*. This scenario reduces to the case of a single plaintiff.) Define M to be the largest whole number such that $M \leq \frac{R_N^*}{N}$. Each plaintiff strictly prefers suing if at least M other plaintiffs sue, and strictly prefers not suing if fewer than M other plaintiffs sue. One immediately sees that both symmetrical, pure strategy equilibria are possible (i.e.,

4.3.2 Costs to Stonewalling

Although the basic model showed why nuisance claims would become nuisance *lawsuits*, it predicts that *all* claims with positive settlement value get filed. We know from experience, though, that many claims settle without the filing of a complaint. How does the model explain this?

The key to the result above is the assumption that prolonging negotiation is costless to the defendant. So long as this is true, the model predicts immediate filing of suit by the plaintiff, even for PEV claims. In some situtations, however, one would expect the strategy of stonewalling to itself be costly. For example, refusing to amicably settle a valid claim—and recall that this model concerns an environment of common knowledge of the merit of the claim—may hurt the defendant's reputation with the plaintiff or with a larger pool of potential customers or suppliers. If stonewalling is costly, pre-suit settlement avoids these costs, thereby creating surplus from settlement that the parties can share. This is true even if the plaintiff suffers the same penalty from refusing to settle that the defendant does; after all, only the defendant has incentive to delay in the first place.

To formalize this idea, allow a loss $L_i \geq 0$ that party i incurs when it rejects a settlement offer (or, in the case of the plaintiff, sues without first offering a settlement).

Proposition 7: Pre-Filing Settlement. Assume that $R^* = 0$ and the credibility constraint is met. If $(1-\delta^2)(S^* - F^* - L_P) > \delta L_D$, plaintiff will file suit immediately and the parties will settle for S^*. Otherwise, plaintiff will not file suit, and the parties will settle immediately for $\delta^2(S^* - F^* - L_P) + \delta L_D$.

Proof. The payoff to filing suit immediately is $S^* - F^* - L_P$. If the plaintiff does not file suit immediately, the plaintiff demands settlement $\delta^2(S^* - F^* - L_P) + \delta L_D$, which is exactly what the defendant would lose if it rejected the offer and gave its optimal counteroffer, per the proof of Proposition 3. Thus, if the plaintiff does not file suit immediately, the parties settle for $\delta^2(S^* - F^* - L_P) + \delta L_D$. Given these payoffs, plaintiff will still choose to file suit immediately if the payoff from immediate filing exceeds the payoff from pre-filing settlement: $S^* - F^* - L_P > \delta^2(S^* - F^* - L_P) + \delta L_D$, which can be rewritten $(1 - \delta^2)(S^* - F^* - L_P) > \delta L_D$. QED.

Comment. Note that for $\delta \approx 1$, this implies that even a small cost to the

for any $R_N^* \geq R^*$, all plaintiffs sue or no plaintiffs sue). The mixed strategy equilibrium is degenerate, in that only a zero-measure set of plaintiffs will sue. This is because any mixed strategy involves some positive probability of suing and the defendant not being able to deter the plaintiff with a retainer. Since this outcome involves a strictly positive settlement, and all other outcomes involve a zero payoff, plaintiffs are not indifferent to suing, and thus will choose a pure strategy. In any event, the basic claim in the text—that plaintiffs stand to gain dramatically from coordination—holds in this scenario as well, given that one equilibrium is strictly preferred to the other, and coordination may be required in order for plaintiffs to act simultaneously at all.

defendant from stonewalling (L_D) can induce settlement without litigation. On the other hand, if $S^* - F^*$ is very large relative to L_P and L_D, the plaintiff will file suit immediately.

4.3.3 Other Extensions

This model accommodates a number of other extensions. Importantly, none of these extensions change the essence of the model or its empirical predictions. These extensions include the following:

1. *Limited Front Loading of Costs.* Although the basic model placed no limits on the extent to which the plaintiff could (observably) sink litigation costs in advance of litigation, it is more realistic to assume that some types of litigation costs cannot be sunk in the pre-litigation phase. In the Appendix, I extend the model to separate costs that can and cannot be frontloaded. If some share of costs cannot be frontloaded, this shrinks the set of parameters for which a nuisance settlement is feasible but does not change the central results above.

2. *Costly Front Loading of Costs.* The costs of gathering a given set of facts may be higher in the pre-litigation setting than in the discovery setting, given that fewer procedural devices are available to the plaintiff in this situation. (Note, however, that is a full information model: there is no unknown information for which the plaintiff must search.) In the Appendix, I extend the model to allow for litigation activity to be more costly pre-filing than post-filing. This shrinks the set of parameters for which a nuisance settlement is feasible but does not change the central results above.

3. *Multiple Periods of Bargaining During Litigation.* In the Appendix, I extend the model to incorporate multiple periods of litigation in which the parties have opportunities for bargaining and in which costs and benefits of future periods are discounted. This expands the set of parameters for which a nuisance settlement is feasible but does not change the central results above.

4. *Plaintiff's Attorney Retainers.* One might also allow a plaintiff to sink litigation costs through a retainer. As the analysis above shows, to the extent that the plaintiff identifies a claim to bring before the defendant has an opportunity to pay a retainer, the plaintiff will press the claim (including, potentially, sinking litigation costs through costly pleading) immediately. Thus, a model in which the plaintiff can pay a retainer before the defendant can do so is equivalent to a model in which neither party can pay a retainer (and thus nests within the model as presented above). Conversely, a model in which the plaintiff can pay a retainer

after the defendant can do so is equivalent to the model as presented; costly pleading is simply a case-specific retainer.

5. *NEV Defenses with Settlement Value.* The analysis so far has examined the conditions under which a plaintiff with a NEV claim can obtain a positive settlement. The analysis can also be applied to examine the conditions under which a defendant with a NEV defense can raise that defense (which is costly to litigate and may affect the expected judgment). The analysis is the same as the litigation portion of he game above (with the parties reversed), except that the game for the NEV defense is a subgame within the litigation filed by the plaintiff.

6. *Risk Aversion, Unequal Discount Rates, and Non-Monetary Litigation Costs.* As I discuss in the Appendix, the model easily accommodates risk aversion, unequal discount rates, and non-monetary litigation costs with no changes to the central results above.

5 Empirical Predictions

The model above is intuitive and analytically tractable, but is it accurate? In this respect, the model has an advantage over existing models of nuisance suits and settlements: by incorporating not only litigation costs and expected judgments, but pre- and post-filing settlement, pleading, multiple plaintiffs, costs of stonewalling, and bargaining power, the model generates a number of rough, empirical predictions that are either consistent with well-recognized stylized facts or susceptible to testing. I discuss these predictions below. One must apply predictions from the model to data with care, however, as this is a full-information model of litigation, and a comparable asymmetric information model may generate different predictions. Real-world litigation, of course, involves a mix of cases that can be characterized as full-information and asymmetric-information disputes.

5.1 Which NEV Claims Settle

The solution to the basic model reduces to a set of key conditions: the *Credibility Condition*, *Feasibility Condition*, and *Optimality Condition*. These conditions together define the sets of parameter values for which nuisance settlements are possible. Figure 1 illustrates how litigation costs and expected judgment values affect settlement outcomes. Defendant's litigation costs C_D increase along the y-axis, the expected judgment πJ increases along the x-axis, and all values are relative to plaintiff's litigation costs, i.e., $C_P = 1$. As before, I set $\alpha = 0.5$. We see that among NEV claims, those with both sufficiently low C_D and sufficiently low πJ will never be filed; no cost-sinking strategy can

yield plaintiff a positive net payoff. Conversely, claims involving *either* relatively high expected judgment *or* high defendant's litigation costs will lead to nuisance settlements, notwithstanding the ability of the defendant to spend on retainers to deter nuisance suits. There is a region, however, where the expected judgment is relatively low and defendant's litigation costs are moderate, in which a retainer strategy (combined with the strategy of stonewalling pre-filing) can protect the defendant from nuisance settlements.

Prediction: Patterns of alleged nuisance settlement activity should conform to the relationships between C_D, C_P, and πJ summarized in Figure 1.

5.2 Horizontal and Vertical Integration of Legal Services

Retainers paid by defendants and coordination among plaintiffs play roles in determining whether NEV claims will have settlement value. To the extent that NEV claims are a significant part of litigation practice, we should expect to see these strategies arising in contexts where they are most likely to be effective.

With respect to retainers, the ubiquity of hourly-fee arrangements rather than retainer agreements between potential defendants and their law firms seems to cut against the predictions of the model (at least if nuisance litigation is a serious problem). Yet it is also the case that many large companies employ significant numbers of litigation attorneys in-house. These attorneys are paid a salary and thus their pay is, in function if not form, a retainer.

With respect to coordination, there are certainly many ways in which plaintiffs can, in practice, coordinate their efforts. The most obvious, though, is through retaining common counsel. For this mode to be effective, the law firm representing the plaintiffs must be large enough to coordinate the claims of many plaintiffs simultaneously.

Of course, the existence of in-house litigation departments and large plaintiffs' law firms hardly proves the model, although they are consistent with the model.[13] But the model makes more specific predictions—predictions which have yet to be specifically studied, but which could be confirmed or falsified.

Prediction: Coordination by plaintiffs only affects plaintiffs' outcomes in cases where, under the conditions of Proposition 5, parameter values are such that $R_1^* = 0$ but $R_N^* = R^*$. In other words, coordination improves plaintiffs' outcomes when the defendant cannot deter a coordinated plaintiff strategy (i.e., when $R_N^* = NR_N^*$ is not optimal) but can deter plaintiffs acting independently. From Propositions 4 and 5, these are cases where C_P is very small, or

[13] Also suggestive is the fact that retainers appear more common among defendants than among plaintiffs. As shown in Section 4.3.3, paying a retainer is a redundant strategy for plaintiffs, but not, as shown in Section 4.2, for defendants.

πJ is not small, relative to C_D. Thus, holding defendant's costs and the merits constant, the model predicts larger plaintiffs' law firms in contexts where plaintiffs' costs are lower—an otherwise counterintuitive result.

Prediction: Retainers by defendants are only effective if the defendant's optimality and feasibility conditions are met. This requires cases with relatively low πJ but also relatively low C_D compared to cases that are filed and settled.

5.3 Suit, Pleading, and Settlement

The model makes fairly crisp predictions for pleading behavior and the timing and value of settlements of NEV claims.

Prediction: In the model, if a suit is filed, it settles for $S^* = \alpha(\pi J + C_D)$. Thus, settlement values should be proportional to the expected judgment and the defendant's litigation costs, but not to the plaintiff's litigation costs.

Prediction: If there are no penalties (reputational or otherwise) to stonewalling in response to settlement demands from plaintiffs with "frivolous" claims, then to the extent that nuisance settlements exist at all, they should occur in the context of filed litigation only.

Prediction: The presence of reputational and repeat-play factors should predict pre-filing settlement in non-frivolous-suit contexts (including PEV claims, but also high-merit but NEV claims). For example, pre-litigation settlement should be the norm in contexts involving ongoing contractual relationships, disputes between neighbors and other repeat players, and in dealings between large businesses and government. Settlement only after filing should be more common in "one-shot" interactions between parties (or, equivalently, situations where the stakes greatly outweigh value of the parties' relationship).

Prediction: In the model, $A^* = 0$. Thus, answers will be pleaded in minimal detail.

Prediction: In the model, if a plaintiff with a NEV claim files suit, the plaintiff will spend $F^* = C_P - \pi J$. Thus, some complaints will be pleaded with great detail (regardless of the pleading standard). Even complaints for no-merit claims will be pleaded with a degree of detail commensurate with the plaintiff's cost of litigating.

6 Application to Pleading Standards

The primary objective of this paper has been to generate a general model of NEV litigation in a full information environment that synthesizes existing models, examines previously neglected aspects of NEV litigation, and generates empirical predictions that are either consistent with existing stylized facts or susceptible to testing based on new data. I note, however, that this model,

precisely because of its generality, may be useful in answering normative and prescriptive questions as well. I will present one example here.

This model so far has assumed no pleading standards, instead assessing what degree of pleading detail would arise endogenously as a matter of litigation strategy. This assumption, that the law requires nothing more than a nominal amount of factual and legal detail, is consistent with the traditional account of "notice pleading," a regime of liberal pleading standards that prevailed in the federal courts from the promulgation of the Federal Rules of Civil Procedure in 1938 until the Supreme Court's watershed cases *Bell Atlantic Corp. v. Twombly* (550 U.S. 544 [2007]) and *Ashcroft v. Iqbal* (556 U.S. 662 [2009]). These cases require more than "notice": a complaint must plead facts "plausibly suggesting (not merely consistent with)" the plaintiff's legal claim (544 U.S. at 557), and "only a complaint that states a plausible claim for relief survives a motion to dismiss" (556 U.S. at 679).[14]

Plausibility pleading may change the calculus of pleading and settlement in the model of nuisance suits—indeed, the Supreme Court's opinion in *Twombly* suggests that plausibility pleading's *purpose* is to change this calculus! In deploying the plausibility standard to dismiss the claims in *Twombly*, the Supreme Court implied its focus was on litigation in a full-information environment. It made little secret that it was motivated by concerns about weak cases being brought against defendants who know the cases are weak but are vulnerable because their costs of defense are so high. The Court fretted over the possibility that a "plaintiff with a largely groundless claim be allowed to take up the time of a number of other people, with the right to do so representing an *in terrorem* increment of the settlement value" (550 U.S. at 558 (internal quotation marks omitted)). The very language of "plausibility" implies an attempt to weed out cases unlikely to succeed, and with respect to litigation costs, the Court in *Twombly* devoted more space in its opinion to documenting the high cost of defending an antitrust case than it did interpreting the text of Rule 8 or the court precedents on pleading.[15]

Mapping these concepts from *Twombly* and *Iqbal* onto the model of nuisance suits is not without difficulty. Making plausibility pleading operational constitutes a contentious and ongoing project for the federal courts. For my purposes, I will set aside the many nuances of plausibility pleading doctrine and assume that it requires some minimum level of costly detail greater than

[14]See also Federal Rule of Civil Procedure ("Rule") 8(a) ("A pleading that states a claim for relief must contain . . . a short and plain statement of the claim showing that the pleader is entitled to relief"). Once a plaintiff files a complaint, the defendant can file a motion to dismiss for "failure to state a claim upon which relief can be granted" under Rule 12(b)(6). The approach in this Section may also be sensible for studying fact pleading in state court or other heightened standards, such as those under Rule 9 and the PSLRA.

[15]The issue of costs in *Iqbal* is less explicit, but the fact that the petitioners before the Supreme Court were John Ashcroft, former Attorney General of the United States, and Robert Mueller III, former Director of the FBI, loomed over the entire decision.

before: $\bar{F} \in (0, C_P)$. It also requires some minimum level of merit, when previously none was required: $\bar{\pi} > 0$ but $\bar{\pi} << 1$.[16] (Recall that this model addresses only the full information environment, so in this context merit is observable to the court conditional on spending $\bar{F}$ preparing the complaint.) For simplicity, assume further that enforcing these requirements through a motion to dismiss is costless.

Given this, we obtain two sets of results. The first pair of results address the extent to which imposing plausibility pleading will change the set of claims for which the plaintiff will file suit and obtain a settlement. These results indicate that plausibility pleading has a relatively small deterrent effect on suit and settlement, even among the set of disputes that involve NEV claims and full information.

Proposition 8: Effect of $\bar{F}$ on suits. The detailed pleading requirement $\bar{F}$ will have no effect on which claims the plaintiff will abandon, the defendant will deter, or the parties will settle after suit is filed, so long as $\bar{F} \leq \frac{C_P}{1+\alpha}$.

Proof. See Appendix.

Comment. Given that I have assumed equal bargaining power (i.e., $\alpha = 0.5$), the requirement of pleading detail has no effect on which claims are filed so long as $\bar{F} \leq \frac{C_P}{3}$. Iin other words, so long as the plausibility pleading does not require plaintiffs to spend more than one-third of their total litigation costs up front, this requirement of detailed pleading will have *no* effect on the rate at which claims are filed or settled! And while it is uncertain precisely how much detail is required by plausibility pleading, it is hard to imagine that the requirement demands expenditures of this magnitude. Though counterintuitive, this prediction is bolstered by the considerable evidence that the effect of *Twombly* and *Iqbal* has been modest at best. See Hubbard (2014).

Proposition 9: Effect of $\bar{\pi}$ on suits. For "frivolous" claims, such that $\pi J \approx 0$, the pleading requirement $\bar{\pi} > 0$ will have no effect on which claims the plaintiff will file and settle rather than abandon, so long as $C_D \leq \frac{C_P}{\alpha(1-\alpha)}$.

Proof. For $\pi J \approx 0$, even without $\bar{\pi} > 0$, the plaintiff will not bring the claim if either the credibility constraint is not met, or if the optimality and feasibility constraints are met. From Propositions 2 and 4, it follows that for $\pi J \approx 0$, there will be no suit and settlement so long as $C_D \leq \frac{C_P}{\alpha(1-\alpha)}$.[17] QED.

Comment. As shown above in Section 4.2, even without plausibility pleading, most of the lowest-merit claims had no settlement value or would be deterred by retainers. Thus, imposing the pleading requirement $\pi > \bar{\pi}$ will affect only

[16]Note the shift from low expected judgment (πJ) to low merit (π) here. I attend to this distinction because NEV claims may have high merit. Further note that the fact that NEV claims may have positive settlement value is, as a normative matter, ambiguous; the American Rule means that some high-merit claims are still NEV cases, and thus it is possible that the strategic use of costly pleading is normatively desirable for some NEV claims.

[17]Note, too, that this prediction of little or no effect is only reinforced to the extent that Rule 11 deters low-merit claims independently of any pleading standard.

two sets of cases: those with very high defendant's litigation costs relative to plaintiff's litigation costs, and those with very high J, such that πJ is large despite π being low. In other words, screening on merit will have no effect on filing except for claims involving extremely asymmetric costs or extremely high stakes. It is perhaps little surprise, then, that scholars have generally found the numbers of cases affected by *Twombly* and *Iqbal* to be relatively small (see Hubbard [2014] for a review of the literature), but the watershed plausibility pleading cases, *Twombly* and *Iqbal*, both easily fit the mold of cases with extremely asymmetric litigation costs and gigantic stakes.

The second pair of results address the extent to which plausibility pleading will affect settlement values.

Proposition 10: Effect of $\bar{F}$ on settlement values. Assume $\bar{F} \leq \frac{C_P}{1+\alpha}$ (i.e., no suits are deterred by $\bar{F}$). For claims where $\bar{F} > C_P - \pi J$, defendants pay higher settlements, and plaintiffs receive lower net payoffs, than without $\bar{F}$.

Proof. Given $\bar{F} > C_P - \pi J$ and the Proof of Proposition 1, the equilibrium settlement is $S^{\bar{F}} = \pi J + \alpha C_D - (1-\alpha)(C_P - \bar{F}) > S^*$. (Note that if $\bar{F} \leq \frac{C_P}{1+\alpha}$, for claims such that $\bar{F} > C_P - \pi J$, the defendant chooses $R^* = 0$.) Plaintiff's payoff is $S^{\bar{F}} - \bar{F} = \pi J + \alpha(C_D - \bar{F}) - (1-\alpha)C_P < S^* - C_P + \pi J = (1+\alpha)\pi J + \alpha C_D - C_P$. QED.

Comment. Counterintuitively, plausibility pleading has an effect on *strong* claims. In the nuisance suit model, strong claim are pleaded in *less* detail, because the threat to sue is credible even without fewer costs sunk. Plausibility pleading forces plaintiffs with high-expected-value claims to sink more costs in detailed pleading in order to induce settlement. This reduces the surplus from settlement, and—because the parties split the surplus when settling—reduces the net payoffs of both the plaintiff *and the defendant*. Note, too, that if pre-filing settlement is optimal (i.e., where L_D is sufficiently large), then pre-filing settlement eliminates the social cost of detailed pleading, but in this case plausibility pleading effects a transfer of wealth from plaintiffs to defendants.

Proposition 11: Effect of $\bar{\pi}$ on settlement values. For "frivolous" claims, such that $\pi J \approx 0$, the pleading requirement $\bar{\pi} > 0$ will reduce to zero the settlement values of claims for which $C_D > \frac{C_P}{\alpha(1-\alpha)}$. For claims with $\pi \geq \bar{\pi}$, it will have no effect.

Proof. Follows immediately from Proposition 9. QED.

Comment. If enforcing the pleading standard is costly, even meritless claims may still have nuisance value, if the cost to the defendant of filing a motion to dismiss is sufficiently high that a post-filing and pre-motion-to-dismiss settlement will yield the plaintiff a positive net payoff. (This is an example of the original Rosenberg and Shavell (1985) model.) But so long as filing a motion to dismiss is not too costly, plausibility pleading will deter those claims of the

lowest merit that otherwise would be filed.

Although most of the commentary on plausibility has focused on the potentially harmful effect of plausibility pleading on claims involving asymmetric information,[18] I have argued elsewhere that plausibility pleading standards are unlikely to have a large effect on such litigation (Hubbard 2014). Yet the model above suggests, somewhat ironically, that unintended and undesirable consequences of a higher pleading standard may arise in the context of full-information litigation setting.

7 Conclusion

This paper presents a model of nuisance litigation that accounts for pleading practice, pre-filing and post-filing settlement, and retainer agreements. It synthesizes insights of existing full information models of NEV litigation while maintaining analytical tractability. It explains the (widely reported, although hard to confirm empirically) phenomenon of nuisance lawsuits (not merely nuisance claims) and large nuisance settlements. It shows how observed patterns of pleading practice can arise endogenously from litigation strategy, even in the absence of pleading standards. And it predicts previously unconsidered effects of plausibility pleadings standards: in the full information context, plausibilty pleading may have a relatively small effect in terms of discouraging weak claims, but may worsen the outcomes for both plaintiffs *and defendants* in cases involving *strong* claims.

Nonetheless, one must exercise care in applying this model to questions of policy, as only a few of the testable empirical predictions of the model have yet been explored. The rich set of empirical predictions provided by this model may open up opportunities for empirical research on nuisance litigation; in the past, the unobservability of true case merit, coupled with few testable predictions, provided little fodder for empirical work on nuisance litigation.

Further, real-life litigation comprises a mix of full information and asymmetric information disputes. A more complete analysis of NEV litigation would examine asymmetric information disputes as well, a topic that a large literature has already begun to plumb.

[18]For example, Reinert (2010) notes the historical importance of federal courts to civil rights claimants, as well as the particular difficulty that individuals with claims such as employment discrimination will have pleading specific facts about the defendant's motives. The concern here is one of asymmetric information: only the defendant knows the defendant's motives. While discovery is a mechanism for revealing this private information, a plaintiff cannot obtain discovery without first surviving a motion to dismiss. But if this lack of information means that the plaintiff cannot plead a "plausible" claim, then the complaint will be dismissed and the case will never see discovery.

A Appendix: Additional Extensions

A.1 Informal Treatment

As discussed in Section 4.3.3, a number of extensions can enrich the model, although none fundamentally change the results presented in the main body of the paper. I discuss several of them further here.

Limited Front Loading of Costs. Although the model in the main text placed no limits on the extent to which the plaintiff could (observably) sink litigation costs in advance of litigation, it is more realistic to assume that some types of litigation costs cannot be sunk in the pre-litigation phase. Preparing for many aspects of trial; deposing defendant, defendant's employees, or other potential witnesses known only to the defendant; and reviewing documents produced by the defendant in discovery are some of the costs of litigation that cannot be sunk in advance by the plaintiff.

Nonetheless, major categories of litigation cost can be sunk. Interviewing the plaintiff; identifying and interviewing any cooperative potential witnesses and preparing them to be deposed; preserving, collecting, and reviewing documents for production in discovery; drating discovery requests; legal research and the drafting of legal arguments to address substantive and procedural issues in the case; and developing and presenting the plaintiff's affirmative case can all be done in advance of litigation and, to varying degrees, documented in the complaint. Crucially, all or most of the costs that cannot be sunk are costs that the plaintiff need not (and often cannot) incur until *after* the defendant has expended its costs that correspond to plaintiff's costs that *can* be sunk. For example, the plaintiff cannot review the defendant's document production until the defendant has preserved, collected, reviewed, and produced documents; the plaintiff cannot depose defendant's employees until the defendant has identified them and prepared them for depositions; and plaintiff need not prepare for trial until after the defendant has expended costs on all pre-trial litigation steps.

Thus, in essential respects the basic model's logic continues to hold: by sinking the costs that can be sunk, the plaintiff generates a credible threat to proceed to a stage of litigation that will require the defendant to expend a large share of its litigation costs. Below, I formally extend the model to separate costs that can and cannot be frontloaded. If some share of costs cannot be frontloaded, this shrinks the set of parameters for which a nuisance settlement is feasible, but does not change the central results above.

Costly Front Loading of Costs. There is also the fact that the costs of gathering a given set of facts may be much higher in the pre-litigation setting than in the discovery setting, given that fewer procedural devices are available to the plaintiff in this situation. Note, however, that is a full information model: there is no unknown information for which the plaintiff must search.

For the category of disputes to which this model applies, it is not at all clear why marshaling facts and law would be less expensive during litigation than before litigation. Further, for nuisance claims—the set of claims that motivate this model—there is, by construction, no merit to discover.

In this regard, one may wonder how a plaintiff with a meritless claim can expend costs on detailed pleading. It is worth noting that the model in Section 4.2 does not require that the details of the complaint, if true, tend to prove plaintiff's case. Instead, the model only requires that the details in the complaint reflect the expenditure of effort that otherwise would have to occur after the complaint was filed. In this respect, documenting a failed investigation works as well as documenting a successful one! If this sounds far-fetched, it may be. But consider the possibility that, at least to the eyes of seven Supreme Court justices, this is exactly what the complaint in *Twombly* did.[19]

Of course, for claims that are brought because of their merit (including some NEV claims), plaintiffs may need to conduct more development of the facts and evidence (even in a full information environment) to take the case to judgment, and these efforts conceivably could be more expensive in the pre-litigation stage. Also, to the extent that the parties discount future payoffs, front loaded litigation costs are undiscounted relative to costs that would be incurred during litigation. Thus, even for nuisance suits, discounting of future payoffs will reduce the benefits of front loading.[20]

Below, I formally extend the model to allow for litigation activity to be more costly pre-filing than post-filing, such that an expenditure F in preparing the complaint reduces C_P by only βF, where $\beta \in [0, 1]$. This shrinks the set of parameters for which a nuisance settlement is feasible, but does not change the central results above.

Multiple Periods of Bargaining During Litigation. For simplicity, the basic model presents litigation as occurring in a single period. The basic model can be extended to incorporate multiple periods of litigation in which the parties have opportunities for bargaining and in which costs and benefits of future periods are discounted. Below, I formally extends the model in this way. For the reasons given by Bebchuk (1996), this expands the set of parameters for which a nuisance settlement is feasible, but does not change the central results above.

Risk Aversion, Unequal Discount Rates, and Non-Monetary Costs. The model can accommodate risk aversion and non-monetary litigation costs with

[19]See Consolidated Amended Class Action Complaint, *Twombly v. Bell Atlantic Corp.*, No. 02 CIV 10220 (S.D.N.Y. filed April 14, 2003) (This complaint was 29 pages long, with 94 of 96 numbered paragraphs "based upon . . . the investigation of counsel.")

[20]In the asymmetric information setting, of course, it is natural to assume that development of certain facts in litigation may be less expensive than development of those facts pre-litigation.

no changes to the substance of the model. The value of non-monetary litigation costs, such as reputational harms or bad publicity during litigation or anxiety over appearing in court, can be incorporated into C_P and C_D. Conversely, benefits from the process of litigation itself, such as the utility a plaintiff receives from having her day in court, can be incorporated as negative costs.

Risk aversion is simply a species of litigation cost, given that litigation is risky and settlement eliminates the risk. Formally, the difference between the expected judgment and the certainty equivalent of a future judgment for each party can be incorporated into each party's litigation costs and thus is part of the surplus from settlement. To the extent that the parties differ in their risk aversion, this is equivalent to a difference in their litigation costs.

As noted above, incorporating discounting of future payoffs affects the set of claims for which a strategy of front loading litigation costs is optimal. Discount rates may also affect outcomes insofar as they are unequal between the parties. In this respect, though, the difference in the parties' discount rates are easily (if somewhat roughly) conceptualized as a determinant of α, the measure of bargaining power. Whichever party discounts the future more will capture a smaller share of the surplus from settlement.

A.2 Formal Treatment

[To be Written]

B Appendix: Proof of Proposition 8

For parameter values such that $\bar{F} \leq C_P - \pi J$, $\bar{F}$ is not binding and thus has no effect. For parameter values such that $\bar{F} > C_P - \pi J$, first solve the model (as shown in Section 4) with the additional constraint that $F^* = \max\{\bar{F}, C_P - \pi J\}$. This yields the following constraints:

Credibility Constraint: $\pi J + \alpha C_D - (1-\alpha)C_P - \alpha\bar{F} > 0$.

Feasibility Constraint: $\pi J - (1-\alpha)C_P - \alpha\bar{F} \leq 0$

Optimality Constraint: $\alpha(1-\alpha)C_D + (2\alpha - \alpha^2)(C_P - \bar{F}) - \alpha\pi J \leq C_P - \pi J$.

For $\bar{F}$ to change plaintiff's decision to file suit or the defendant's decision to pay a retainer, it must be the case that either the claim satisfies the credibility constraint without $\bar{F}$ but cannot meet the constraint with $\bar{F}$, or a retainer payment is not made without $\bar{F}$, but is both feasible and optimal with $\bar{F}$.

First, consider the credibility constraint. The plaintiff satisfies it without $\bar{F}$ if $(1+\alpha)\pi J + \alpha C_D - C_P > 0$, and the plaintiff fails the condition with $\bar{F}$ if $\pi J + \alpha C_D - (1-\alpha)C_P - \alpha\bar{F} \leq 0$ and $\bar{F} > C_P - \pi J$. Define $\bar{F}^{Cred}$ to be the largest value of $\bar{F}$ for which $\bar{F}$ does not affect credibility for any value of C_D

or πJ.[21] This value is solved by:[22]

$$\bar{F}^{Cred} = \min_{\{\pi J, C_D\}} \max\{\frac{\pi J - (1-\alpha)C_P}{\alpha} + C_D, C_P - \pi J\} \quad (5)$$

This yields $\bar{F}^{Cred} = \frac{C_P}{1+\alpha}$. Note that the solution to $\bar{F}^{Cred}$ involves setting $C_D = 0$.

Second, consider the feasibility constraint. Define $\bar{F}^{Feas}$ to be the largeset value of $\bar{F}$ for which $\bar{F}$ does not affect feasibility for any value of C_D or πJ. Given that the solution to $\bar{F}^{Cred}$ implies $C_D = 0$, the solution for feasibility reduces to the solution for credibility: $\bar{F}^{Feas} = \bar{F}^{Cred}$.

Third, consider the optimality constraint. The plaintiff satisfies it without $\bar{F}$ if $\alpha(1-\alpha)(\pi J + C_D) > C_P - \pi J$, and the plaintiff fails the condition with $\bar{F}$ if $\alpha(1-\alpha)C_D + (2\alpha - \alpha^2)(C_P - \bar{F}) - \alpha\pi J \leq C_P - \pi J$ and $\bar{F} > C_P - \pi J$. Define $\bar{F}^{Opti}$ to be the largest value of $\bar{F}$ for which $\bar{F}$ does not affect optimality for any value of C_D or πJ. This value is solved by:

$$\bar{F}^{Opti} = \min_{\{\pi J, C_D\}} \max\{\frac{1-\alpha}{2-\alpha}C_D - \frac{1-2\alpha+\alpha^2}{2\alpha-\alpha^2}C_P + \frac{1-\alpha}{2\alpha-\alpha^2}\pi J, C_P - \pi J\} \quad (6)$$

This yields $\bar{F}^{Opti} = \frac{C_P}{1+\alpha-\alpha^2} < \bar{F}^{Cred}$. Thus, the largest value of $\bar{F}$ for which it has no effect on which claims settle is $\bar{F}^{Cred} = \frac{C_P}{1+\alpha}$. QED.

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[21]Note that by allowing $\bar{F}$, C_D, and πJ to vary, I treat C_P as the numeraire value; I express the minimum cost of pleading detail $\bar{F}$ in units of C_P.

[22]Technically, the inequalities above define an open set comprising all values of $\bar{F}$ such that $\bar{F} > C_P - \pi J$ affects credibility. The infimum of this set is thus the largest value of $\bar{F}$ such that $\bar{F}$ does not affect credibility. This is the value for which Equation (5) solves.

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Figures

Figure 1: Model Outcomes Depending on C_D and πJ relative to $C_P = 1$, given $\alpha = 0.5$