

Tort Law and Probabilistic Litigation:
How to Apply Multipliers to Address the Problem of
Negative Value Suits



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Tort Law and Probabilistic Litigation: How to Apply Multipliers to Address the Problem of Negative Value Suits^{*}

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Abstract

This Article advances a proposal that brings to life valuable lawsuits that litigation costs currently discourage. Our proposal converts claims with negative expected values into positive expected value claims by implementing a novel system involving flexible conditional multipliers. Our proposal has two components. First, under the proposed system a plaintiff is allowed to select a damage multiplier that determines the amount of damages the plaintiff will receive if the litigation is successful. Second, courts select cases for litigation randomly with a probability inverse to the multiplier the plaintiff selected.

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1 Introduction

Frivolous lawsuits, punitive damage awards, and large jury verdicts create the perception that society is excessively litigious.¹ Recent theoretical and empirical evidence suggest, however, that the increased complexity and costs of litigation may deter the pursuit of meritorious claims in various areas of law.² Instances in which litigation costs outweigh the expected benefits of trial are no longer the exclusive territory of small claim disputes. High cost-to-value litigation ratios are now common in patent law,³ corporate law, and mass tort disputes, among others.⁴

The possibility of suboptimal levels of litigation raises a number of concerns. Standard models of litigation predict that a plaintiff will file a lawsuit only if the expected benefits of a trial outweigh the expected costs. If the litigation costs outweigh the expected benefits of trial, a potential plaintiff will not file a lawsuit, even if the probability of winning is high. Consequently, if too few claims are pursued in court the deterrent effect of the legal system is undermined. For instance, if there is no credible threat of facing financial repercussions, too few potential tortfeasors invest adequately in precaution, leading to higher overall accident rates.⁵ Especially if tortfeasors are in a position to prevent certain accident losses at low costs, the absence of a reasonable expectation of facing a lawsuit is problematic. In such circumstances, creating positive value suits can lead to substantial welfare gains.

This Article seeks to resolve the issue of suboptimal levels of litigation by implementing a novel system of litigation. Our proposal has two components. First, we propose that a plaintiff is allowed to select a damage multiplier that determines the amount of damages he or she will

¹ See, e.g., Galanter, 1983; Barnes, 1993.

² See Hylton (1991, 2002); Hersch & Viscusi (2007).

³ Landes (2004); Simensky & Osterberg, (1991).

⁴ Burbank (1987).

⁵ An inadequate amount of lawsuits may occur because a plaintiff does not adequately take into account the positive effect of his lawsuit on the deterrent function of the tort system. This problem will be acute when the social benefits of a lawsuit outweigh the private gains of the plaintiff (Shavell, 1982). A RAND study estimates that only 1 in 10 injuries result in attempts to collect liability compensation. See Hensler (1991). Note that, because of the additional costs of litigation, proposals to stimulate legal claims do not necessarily increase social welfare overall. See Shavell (1982) (explaining the misalignment between private and social incentives to bring lawsuits).

receive if the litigation is successful. Second, we propose that courts randomly select cases for litigation with a probability inverse to the multiplier the plaintiff selected. In essence, this proposal introduces a flexible damage multiplier that inversely affects the probability of adjudication.

The advantages of the proposal are threefold. First, by reducing the costs of litigation relative to the gains, a multiplier creates a credible threat to sue for some individuals that would otherwise not pursue claims that have substantial merit. Consequently, the deterrent function of the legal system is improved. Second, the proposal reaches this objective without inducing excessive precautions. Because the random element of adjudication is set off against the increased damages of the multiplier, the expected loss of a suit remains more or less equal for the defendant.⁶ Third, the proposed system has the advantage of providing plaintiffs the opportunity to self-select the optimal multiplier. The optimal multiplier may strongly differ from plaintiff to plaintiff, depending inter alia on varying risk attitudes and differences in litigation costs between the plaintiff and defendant in a dispute (see Part 5 below).

A potential downside of our proposal is that, by converting claims with negative expected values into positive expected value claims, litigation costs may increase. However, the potential increase in litigation costs is mitigated, to some degree, by the fact that our mechanism eliminates a fraction of the claims that are currently filed. Also, the increased level of deterrence should reduce the overall accident rate. Finally, in order to further mitigate increased litigation costs and reduce the amount of weak and frivolous claims, we consider including a maximum multiplier in the proposed system.

We proceed as follows. Part 2 describes the proposal and outlines the main effects. Part 3 contains a formal exposition of our proposal. Part 4 discusses a number of possible objections to our proposal and suggests some possible modifications to the proposal. Part 5 compares the advantages and disadvantages of our system to two alternative systems involving multipliers. Part 6 concludes.

⁶ This stands in contrast to systems of “pure multipliers” that do not randomize litigation. In a pure multiplier system, there is a risk that the multiplier will be set either too low (leading to inadequate precautions) or too high (leading to excessive precautions). A multiplier that brings about first-best deterrence must be chosen by striking a balance between the supply of lawsuits and the need to internalize costs. See Hylton & Miceli, 2005.

2 Proposal

Our proposed system of probabilistic litigation consists of two steps. First, under the litigation model, a plaintiff is allowed to select a damage multiplier that determines the amount of damages he or she will receive if the litigation is successful. Second, courts randomly select cases for litigation with a probability inverse to the multiplier the plaintiff selected.

To explain the mechanism and effects of this model of litigation, consider the following numerical example. Suppose there are two groups of victims seeking compensatory damages for accident losses. Victims in Group 1 face trial costs of \$50, while victims in Group 2 would incur \$100 in trial costs. The following conditions apply to both groups: (1) All victims have suffered a compensable harm of \$100; (2) all victims have a 70% probability of obtaining compensation in trial (assume further that the plaintiff and defendant share this estimate), (3) the trial costs for the defendant are \$50, and finally (4) each litigant bears his or her own trial costs, as is the case under the American rule. Accordingly, victims in Group 1 will have a credible threat to litigate: the expected value of trial is positive ($0.7 \times \$100 - \$50 = \$20$). Victims in Group 2 will not go to trial: the expected value of litigation is negative for this group ($0.7 \times \$100 - \$100 = -\$30$). Although victims in both groups have a meritorious claim (70% chance of success in litigation), only the first group has a credible threat to litigate. As a result, only potential plaintiffs in Group 1 are likely to receive a settlement offer.

By contrast, under our proposed model of litigation, victims in both groups have a credible threat to litigate. The mechanism works as follows: first, a plaintiff is allowed to select a damage multiplier which determines the amount of damages he or she will receive in case of successful litigation. For example, if the victim selects a multiplier of 3, he or she will not receive \$100 but \$300. Second, a victim is only allowed to bring the case to trial with a probability that equals the (multiplicative) inverse of the selected multiplier. In our example, the victim will have a 33.3% ($1/3$) chance that the case will be allowed to proceed to trial. Thus, there is a probability of 66.6% that the case will not be selected for adjudication. Returning to the example above, note that Group 2 will be offered a positive settlement amount under our proposal if they select a multiplier of 3. Consider also that the settlement amount approximates the expected judgment (\$70). The expected value of trial in Group 2 thus increases from $-\$30$ to $\$36.67$ ($1/3 \times (0.7 \times \$300 - 100)$), with a $1/3$ probability that the case will go to court. In that case, the victim has a 70% chance of obtaining \$300 (3×100) while incurring trial

costs of \$100. However, there is a $2/3$ probability that the plaintiff will not be allowed to pursue his claim in court. In that event, the plaintiff is left empty-handed. Meanwhile, the defendant's expected losses under our system equal \$86.67 ($1/3 \times (0.7 \times \$300 + \$50)$) when faced with plaintiffs from Group 2. If the parties divide the settlement surplus equally, a victim in this group will likely receive a settlement amount of \$61.67.

For an intuitive explanation of our proposal, consider how the plaintiffs' expected benefits of the litigation remain identical, irrespective of the magnitude of the damage multiplier selected by the plaintiff. This is because the selected multiplier and the inverse probability of trial have a canceling effect. In the example above, if the plaintiff selects a multiplier of 3, the expected benefit equals \$70 ($1/3 \times 0.7 \times \300). If the plaintiff selects a multiplier of 5, the expected benefits remain at \$70 ($1/5 \times 0.7 \times \500). At the same time, while the expected benefits remain at the same level, the expected costs of litigation decrease with relative increases of the selected damage multiplier. Higher multipliers reduce the probability that the case will be selected for litigation and, consequently, that trial costs will be incurred. In the absence of a damage multiplier, the expected cost of litigation is \$100 for the plaintiff. With a damage multiplier of 3, litigation costs are adjusted by the reduced (33.3%) probability of the claim being selected for litigation, reducing the (expected) costs to \$33.33 ($100/3$). If the plaintiff selects a multiplier of 10, the expected costs are further reduced to \$10 ($100/10$). In summary, the combination of a damage multiplier and an inversely related probability of adjudication does not affect the benefits of litigation, yet it decreases the costs thereof. Thus, the overall effect is an increase in the expected value of the plaintiff's claim. Larger multipliers lead to higher expected values of trial because they lower the expected trial costs. Overall, our proposal brings to life legal actions that have merit, which would normally be deterred because of the prohibitive costs relative to the potential gains.

At first glance, one may fear that this system will be detrimental to potential tortfeasors, prompting them to take excessive precautionary measures in order to prevent liability. Indeed, injurers may ultimately be held liable for amounts that exceed the actual harm for which they are responsible. Note, however, that the opportunity to litigate is limited to a probability that is inversely related to the damage multiplier. For example, even if the plaintiff selects a multiplier of 5, the expected loss for the defendant "merely" equals \$80 ($1/5 \times (0.7 \times 500 + 50)$). If the plaintiff has a positive expected value claim to begin with, then the expected loss of the defendant would have been greater without the application of a multiplier: $0.7 \times 100 + 50 = \$120$. Also, it is important to

recognize that most parties will settle prior to the selection of a multiplier.

How will the current proposal affect the behavior of potential litigants? By selecting a multiplier, a plaintiff creates a credible threat of initiating a lawsuit. For this reason, many defendants will be inclined to settle as soon as the plaintiff selects a multiplier. In fact, the mere availability of a multiplier may be sufficient to induce settlement offers. At the very least, a plaintiff will select the lowest possible multiplier that is sufficiently capable of creating a credible threat of litigation to the defendant. As the formal exposition in Part 3 demonstrates, a risk-neutral plaintiff will often select the highest possible multiplier. This offers two benefits to the plaintiff. First, selecting the highest possible multiplier minimizes the expected costs of the plaintiff. As a result, a plaintiff's expected value is maximized in the event that the case is selected for trial. Second, a high multiplier may maximize a defendant's settlement offer if the plaintiff's trial costs exceed those of the defendant. Because higher multipliers reduce the difference between parties' expected trial costs, a high multiplier particularly benefits the party that has the highest litigation costs. As a practical reality however, risk-averseness will prompt a plaintiff to select a relatively modest multiplier. Because risk-averse individuals prefer certain outcomes to more uncertain ones (even if the expected benefits are identical), risk-averse plaintiffs will be sensitive to the probability of not being selected for trial.

A recent article by Rosenberg and Shavell, which introduces a clever system of random adjudication (50%) with double damages, inspired our proposal.⁷ Although we share the underlying idea of introducing a random element to adjudication,⁸ our proposed system is fundamentally different in terms of normative orientation and implementation. First, rather than attempting to reduce the amount of litigation, we set out to increase the overall access to the legal system. Second, our proposal aims to improve the deterrent effect of the tort system by bringing to life so-called negative value suits that have merit but that are not currently filed because of litigation costs. By contrast, the proposal by Rosenberg and Shavell targets cases that would be filed regardless of the merits.⁹ Third,

⁷ Rosenberg & Shavell, 2005 (proposing a system of random adjudication with double damages).

⁸ Both proposals adapt to the context of litigation fundamental law enforcement policy insights. See Becker (1968) (explaining the fundamental trade-off in enforcement policy between the levels of certainty and severity of sanctions) and Miller (1997) (showing that litigants might settle after agreeing to participate in a lottery). Both are cited in Rosenberg & Shavell, 2005, 1722, fn. 2.

⁹ We stress that our system could also be of use for positive expected value suits, especially litigation involving relatively high trial costs (see further).

our proposal introduces a multiplier selected by the plaintiff rather than a system of double damages with conditional adjudication. We discuss the advantages of flexibility in Part 5.

3 Model

In this Part we present a formal exposition of our proposal.

3.1 Assumptions and Notations

Throughout the analysis we apply the following notations:

P_p = the estimation by the plaintiff of the plaintiff's chance of success

P_d = the estimation by the defendant of the plaintiff's chance of success

J = the damage award

C_p = the trial costs of the plaintiff

C_d = the trial costs of the defendant

M = the multiplier chosen by the plaintiff

S = the settlement amount (after the choice of a multiplier)

We adopt the following assumptions. Both parties are risk neutral, filing and settling a lawsuit is costless (separate from litigation costs, which are positive), parties know one another's estimation of the plaintiff's probability of success at trial (and there is no asymmetric information on other aspects as well),^{10 11} the litigation expenditures of

¹⁰ More precisely, the estimations are common knowledge.

¹¹ Note that the assumption that litigation costs are observable between the parties may be more plausible in some settings than in others. When a substantial fraction of the litigation costs are psychological in nature for instance, costs are most likely to be non-observable (and non-verifiable to a third-party court). However, when both parties have information ex ante of the merits of the case (but the court doesn't) and determine their expenditures in light of these merits (and of course the amount at stake etc.), then the parties may know ex ante how much they will spend, while the court does not. For a rent seeking model of litigation in which the true degree of fault is known by both litigants but is not known by the court, see Hirshleifer and Osborne (2001) and Farmer and Pecorino (1999). Introducing the possibility of asymmetric information increases the overall complexity. For example, if the plaintiff's probability of prevailing or his trial costs are private information (e.g. when psychological costs are substantial for some plaintiffs but not for others), the plaintiff's choice of the multiplier M may serve as a signal that affects subsequent settlement negotiations. For example, the plaintiff may want to select M in order to signal toughness in bargaining and

the parties are fixed, and both parties bear their individual trial costs. If the parties settle, they divide the surplus equally (this is the Nash bargaining solution).¹² These assumptions are relaxed at the more advanced stages of the model.

Let us first describe how our proposal fits within the chronology of legal disputes. Following standard procedure, after a claim has been filed, parties will either settle the dispute or proceed to trial. If the disputants move to trial and the plaintiff wins the case, the plaintiff obtains a damage award. By contrast, in our proposed system, after a suit is filed and the parties do not settle,¹³ a plaintiff has the option of selecting a multiplier. A lottery system subsequently determines whether the plaintiff is allowed to litigate the claim.¹⁴ If the case is not selected for litigation, the legal dispute ends. If the plaintiff's case is randomly selected, the parties are provided with another opportunity to settle the case. If parties fail to reach a settlement agreement, the dispute proceeds to trial. If the plaintiff prevails in litigation, the plaintiff receives a damage award that is multiplied by the selected multiplier.

3.2 The Selection of the Damage Multiplier by the Plaintiff

Currently, a plaintiff cannot credibly threaten to litigate if $C_p > P_p.J$. In such instance, a defendant will not make a settlement offer. Following our proposal, a plaintiff can select a multiplier M . If a multiplier is selected, the plaintiff has a probability of $1/M$ that the claim will be selected for litigation. If the case is randomly selected for trial, the expected value of the claim is $P_p.M.J - C_p$ and the expected losses of the defendant equal $P_d.M.J + C_d$. After the plaintiff selects a certain M and is allowed to proceed, the parties will settle if, and only if, $P_d.M.J + C_d \geq$

credibility in proceeding to trial. While many analyses of litigation apply the more sophisticated asymmetric information model, we apply the relative optimism model- mainly for the purpose of simplicity. Empirical research suggests that both relative optimism and asymmetric information cause bargaining failures. See, e.g., Waldfogel (1998); Osborne (1999). Further on we will stress that more refined models (including asymmetric information, but also models involving endogenous litigation costs, court error, risk costs etc.) could help to shed more light on the advantages and disadvantages of the several systems that could be advanced to convert negative value suits.

¹² This assumption is made for the sake of simplicity. Alternatively, one could introduce a parameter reflecting the relative bargaining power of the plaintiff.

¹³ If the parties settle at this stage, they do so in light of the multiplier that they expect that the plaintiff might select (they will settle for an amount between $P_p.J - C_p/M$ and $P_d.J + C_d/M$).

¹⁴ We assume that the parties are informed of the result of the lottery immediately.

$P_p.M.J - C_p$.¹⁵ This equation can be rewritten as follows: $C_p + C_d \geq (P_p - P_d).M.J$. If a settlement is reached, the likely settlement amount consists of $P_p.M.J - C_p + \frac{1}{2}.(P_d.M.J + C_d - P_p.M.J + C_p)$.¹⁶

Let us examine the expected gains of the plaintiff for any given multiplier M . If the parties go to trial, the expected value of a plaintiff that selects a certain M equals: $1/M.(P_p.M.J - C_p) + (1-1/M).0 = P_p.J - C_p/M$. If the plaintiff selects an M amount that is likely to induce a settlement, the plaintiff expects to obtain $1/M.(P_p.M.J - C_p + \frac{1}{2}.(P_d.M.J + C_d - P_p.M.J + C_p)) + (1-1/M).0 = P_p.J + \frac{1}{2}.(P_d.J - P_p.J + (C_d - C_p)/M)$. We can distinguish between the following conditions:

Condition 1: If $P_p \leq P_d$, the parties will always settle after the plaintiff has selected a certain M , regardless of the M selected by the plaintiff. The plaintiff will choose M to maximize:

$$(1) \quad S = P_p.J + \frac{\left(P_d.J - P_p.J + \frac{(C_d - C_p)}{M} \right)}{2}$$

What multiplier will a risk neutral plaintiff likely select? At a minimum, M must be high enough to bring the legal claim into a positive expected value range. Hence, the minimum multiplier (M_{\min}) must satisfy $P_p.M.J - C_p \geq 0$ or $M_{\min} = C_p/(P_p.J)$. Whether the plaintiff will select an M greater than M_{\min} depends on the relative litigation costs of both parties. If the costs of trial are higher for the plaintiff than for the defendant ($C_p > C_d$), the plaintiff will select the highest possible multiplier (M_{\max}).¹⁷ A larger multiplier reduces the difference between the expected trial costs of both parties. In formal terms, S raises with increases of M :

¹⁵ Note that, in our model, if the parties intend to settle after the selection of a multiplier, they will already have settled before the plaintiff selects the multiplier since $P_d.M.J + C_d \geq P_p.M.J - C_p \Leftrightarrow P_d.J + C_d/M \geq P_p.J - C_p/M$. Clearly, the pre-lottery settlement amount will be situated halfway between $P_p.J - C_p/M$ and $P_d.J + C_d/M$, with M being equal to the multiplier that the parties expect that the plaintiff will select.

¹⁶ This is the Nash bargaining solution.

¹⁷ M_{\max} could be imposed by law (see further). If not, a risk neutral plaintiff would choose an infinitely high M .

$$\frac{\partial S}{\partial M} = -\frac{(C_d - C_p)}{2 \cdot M^2} > 0, \text{ when } C_p > C_d. \quad (2)$$

Conversely, if the defendant's litigation costs exceed those of the plaintiff ($C_d \geq C_p$), the plaintiff will select M_{\min} . That is true because any further increase of M benefits the defendant more than the plaintiff.¹⁸ Formally, S decreases or remains the same with increases of M :

$$\frac{\partial S}{\partial M} = -\frac{(C_d - C_p)}{2 \cdot M^2} \leq 0, \text{ when } C_d \geq C_p \quad (3)$$

Condition 2: If $P_p > P_d$, the decision to settle depends on the selection of M .

If the plaintiff decides on an $M > (C_p + C_d)/(P_p - P_d) \cdot J$, the parties will proceed to trial. In such instance, the plaintiff is best served by maximizing $P_p \cdot J - C_p/M$. The plaintiff will select an M that is as high as possible (M_{\max}) and will expect to gain $P_p \cdot J - C_p/M_{\max}$. If the plaintiff selects an $M \leq (C_p + C_d)/(P_p - P_d) \cdot J$, the parties will settle. If $C_p > C_d$, the plaintiff will select a maximum M , equaling $(C_p + C_d)/(P_p - P_d) \cdot J$.¹⁹ We denote this maximum as M_{\max} . The plaintiff thus expects to gain $P_p \cdot J - C_p/M_{\max}$.²⁰ When $C_p \leq C_d$, the plaintiff selects M_{\min} . The plaintiff thus expects to gain $\frac{1}{2} \cdot (P_d \cdot J + C_d/M_{\min})$.²¹ It is necessary to distinguish between two sub-conditions:

Condition 2.A. If $C_p > C_d$, the plaintiff balances $P_p \cdot J - C_p/M_{\max}$ with $P_p \cdot J - C_p/M_{\max}$. The plaintiff will choose M_{\max} and the parties will go to trial if

¹⁸ Actually, when $C_p = C_d$, the plaintiff will be indifferent.

¹⁹ Since we consider the case $M \leq (C_p + C_d)/(P_p - P_d) \cdot J$.

²⁰ When the plaintiff chooses M_{\max} , the expected value of the plaintiff equals the expected loss of the defendant, since for any $M \leq M_{\max}$ the parties settle and for any $M > M_{\max}$ the parties litigate. Consequently, the settlement surplus is equal to zero at M_{\max} .

²¹ When the plaintiff chooses M_{\min} , his expected value of trial is zero (by definition of M_{\min}).

$M_{\max} > M_{\max}$. When $M_{\max} > M_{\max}$, the plaintiff will select M_{\max} and the parties will settle.

Condition 2.B. If $C_p \leq C_d$, the plaintiff balances $P_p.J - C_p/M_{\max}$ with $\frac{1}{2} \cdot (P_d.J + C_d/M_{\min})$. Since $M_{\min} = C_p/P_p.J$, the plaintiff will select M_{\min} and the parties will settle when $(P_p - \frac{1}{2} \cdot P_d).J \leq C_p/M_{\max} + (C_d/C_p) \cdot P_p.J$. Since $C_d \geq C_p$, this is always true. In other words, if $C_p \leq C_d$, the plaintiff will select M_{\min} and the parties settle.

3.3. Risk Aversion and Endogenous Trial Expenditures

Risk-averse plaintiffs will be particularly sensitive to the possibility that their claims will not be selected for trial. Due to this concern, risk-averse plaintiffs will generally favor a lower M ; i.e. a risk-averse plaintiff is unlikely to select M_{\max} .²² As the plaintiff's level of risk aversion increases, the optimal M for a risk-averse plaintiff moves closer to M_{\min} . More formally, the plaintiff will increase M as long as the marginal benefits from an increase (larger settlement amount or larger expected value of trial) outweigh the marginal costs of risk.^{23 24}

A multiplier system increases the stakes of litigation. The expenditures on claims selected for trial will increase accordingly. If a plaintiff's case is selected for trial, the plaintiff in our proposal has a greater incentive to win and will spend more time and resources to obtain (multiplied) damages. Likewise, a defendant will have an increased incentive to win the case. If a plaintiff increases his or her trial expenditures in proportion to the increased stakes (from C_p to $M \cdot C_p$), the lawsuit retains its negative expected value. After selecting M and receiving permission to proceed, the expected value of the plaintiff will remain negative:²⁵

$$P_p.M.J - M.C_p = M \cdot (P_p.J - C_p) < 0 \quad (4)$$

²² Note that if plaintiffs could assign their rights, risk aversion would disappear and plaintiffs would prefer higher multipliers. The assignment of rights is disallowed in most jurisdictions.

²³ Risk aversion may increase the settlement frequency in at least two ways. First, the costs of risk may widen the settlement range. Second, risk aversion induces lower multipliers and thus decreases the amounts at stake. Having smaller amounts at stake reduces the chance that relative optimism will lead to litigation.

²⁴ On the influence of risk aversion on behalf of the defendant, see below.

²⁵ For the sake of simplicity, we hold P_p constant.

Although expenditures are likely to rise, the overall increase of litigation expenditures will generally be lower than the increase of the stakes. This follows from the assumption that parties will initially make the most worthwhile legal investments. In other words, the marginal return of the investment decreases as a litigant makes additional investments. Empirical research suggests that the expenditures of the parties rise at a lower rate than increases of the amount awarded in settlements or at trial.²⁶

4 Potential Objections

(1) *The proposal is unfair to plaintiffs.* One could argue that the proposed system is unfair because not all plaintiffs are treated equally: some claims are admitted for trial while others are not. Such criticism is subject to the following disclaimers. First, given a certain amount of trial costs, plaintiffs are treated equally *ex-ante*. If plaintiffs select the same multiplier, they face the same probability of being selected for trial. Second, many cases will settle before the plaintiff files suit or selects a multiplier. As discussed above, risk aversion will generally induce settlement prior to the official filing stage. Hence, random selection only occurs with plaintiffs whose disputes have not been settled prior to the filing stage. Third, even if some plaintiffs are left empty-handed under the proposed system, plaintiffs with negative expected value suits do not receive anything under the current procedural system. Finally, the proposed system does not obligate plaintiffs to select a multiplier.

(2) *The proposal is unfair to defendants.* The random element of adjudication also impacts defendants. Defendants will face trial only if the claim is selected for trial. As a result, some defendants will not have to compensate victims and others will be forced into compensating disproportionately high damage awards that extend beyond the actual harm. This can be regarded as an unfair result. However, it is important to recognize that our proposed litigation system treats all defendants equally from an *ex-ante* perspective. Given a certain multiplier, all defendants face the same probability of trial. Of course, some defendants will be more fortunate than others *ex-post*. But it is important to recognize that all defendants have the option of settling the dispute before the plaintiff selects a multiplier.

²⁶ See Kakalik, J.S. et al, 1984.

(3) *The proposal adversely affects risk-averse parties.* Because our proposal increases the stakes, it also imposes additional risks on individuals involved in legal disputes. To the extent that parties are risk-averse, these risks must be considered as a cost of the system. The plaintiff faces the risk that his or her case will be eliminated at the filing stage. However, for plaintiffs that face prohibitive litigation costs, the risk of not being selected is an improvement over the certainty of not receiving any compensation at all in the current system.²⁷ For a defendant in a tort case, the system imposes a potential cost that exceeds the actual harm inflicted on the victim. However, this risk can be avoided through settlement. Consider also that higher degrees of risk aversion increase the likelihood of settlement prior to the selection of a multiplier.²⁸

(4) *The proposal will induce frivolous lawsuits and weak cases.* As a potential drawback, our proposed system may attract frivolous lawsuits. Aside from frivolous suits, our proposal also makes it easier to file weak – but not frivolous – cases. Also, plaintiffs with very weak cases, who would otherwise not undertake any action, might be compelled to select a high multiplier in the hope that their case will be randomly selected for trial. In the advent of this possibility, defendants who are very risk averse might be inclined to make settlement offers.²⁹

Imposing a cap or ceiling on the multiplier may mitigate the problem of frivolous and weak cases. For example, plaintiffs could be limited to multipliers that range between 1 and 3.³⁰ A limit on the multiplier would curb some of the potential abuses of the system. However, it should be noted that a restriction on the size of the multiplier might have the unintended effect of preventing some defendants with meritorious claims from creating a credible threat of suit.^{31 32}

²⁷ Of course, even under the current situation there are situations in which a plaintiff with a negative expected value suit obtains a settlement amount (e.g. when the plaintiff has insurance for legal expenses).

²⁸ See also Rosenberg & Shavell, 2005, 1727-28.

²⁹ If judges are able to identify a frivolous suit with relative ease, abuse of the system could be avoided by allowing judges to punish plaintiffs who bring frivolous lawsuits with increased sanctions. It is questionable, however, whether courts are able to identify frivolous suits with great accuracy.

³⁰ Additionally, the system could be restricted to small claims, e.g. up to \$5000. Alternatively, the maximum multiplier could be linked to the amount at stake: the higher the amount at stake, the lower the maximum multiplier.

³¹ Some plaintiffs may have such substantial trial costs that the maximum multiplier allowed by law is smaller than the minimum multiplier they need in order to make their suit have a positive expected value.

³² Note that weak cases could also be deterred by tying the multiplier to the merits of the case. If the court finds the case to be relatively weak from an ex-ante perspective but strong enough to envisage a victory for the plaintiff, the court

(5) *The proposal will be used for lawsuits with positive expected values.*

Another point worth considering is that plaintiffs holding claims that already have a positive expected value might abuse the system. Such plaintiffs may also seek out the reduction in expected trial costs created by our proposal. Indeed, although some plaintiffs could potentially select a multiplier to increase their award, this should occur only in a limited set of cases. Our proposal mostly benefits plaintiffs with high trial costs. By selecting a multiplier, a plaintiff also incurs a risk that the case will not be selected for trial (inverse multiplier). For this reason, our proposed system is most advantageous to plaintiffs with high litigation costs. Plaintiffs with relatively high trial costs have more to gain from selecting a multiplier. Suppose a plaintiff with trial costs of \$800 selects a multiplier of 2. The expected trial costs decrease from \$800 to \$400. Plaintiffs with low trial costs do not have as much to gain from applying a multiplier. Suppose that the plaintiff's trial costs are \$200. By selecting a multiplier of 2, the plaintiff gains only \$100. Assume further that litigants are risk averse. The increased risk of not being allowed to go to court is worthwhile especially for plaintiffs with high trial costs.³³

If, for some reason, it would be necessary to restrict the system to lawsuits with negative expected values, this could be achieved, in theory, through ex-ante or ex-post control by the courts. Under the ex-ante approach, immediately after the plaintiff selects a multiplier, the court would estimate whether the claim could be filed without the system. Under the ex-post approach, the court would, upon making a final decision, refuse to apply the damage multiplier if it decides that the claim would have been filed in any event, even without a multiplier. The latter approach creates greater risks for plaintiffs³⁴ but reduces transaction costs compared to the ex-ante approach.

(6) *The proposal will increase trial expenditures.* As the stakes increase, expenditures will rise for those cases that are selected for trial. Plaintiffs will now have a greater incentive to win and will therefore spend additional time

could lower the multiplier that the plaintiff selected. An analogy exists with fee shifting systems that are conditional on the margin of victory: in many legal systems with fee shifting, indemnification awards tend to be more generous in cases where the loser's legal or factual position appears weak.

³³ Notice the difference in our proposal compared to the system proposed by Rosenberg and Shavell (2005). Our proposal is of particular use to plaintiffs with high trial costs. Such plaintiffs are more likely to select a multiplier and, consequently, many of these cases will never make it to court. By contrast, in Rosenberg and Shavell's proposal, cases are treated the same irrespective of their trial costs: all cases have a 50% chance of being eliminated.

³⁴ Also due to the fact that court officials can be expected to make errors when performing this task.

and resources to obtain (multiplied) damages. Likewise, defendants will have an increased incentive to win. However, it should be recognized that, due to risk aversion, plaintiffs will prefer a relatively small multiplier.³⁵ Also, cases with higher multipliers have a lower chance of being selected for trial. Consequently, trial expenditures will seldom be incurred in these cases.³⁶

(7) *The proposal will increase litigation.* By converting claims with negative expected value into positive expected value claims, our proposed system may lead to an overall increase in litigation. Even if most cases settle,³⁷ costs are incurred during the settlement process. Note, however, that these costs are mitigated, to some degree, by a number of factors. First, under our proposal, only a fraction of claims will be accepted for litigation. Second, some positive value suits that would have been litigated without our proposal will be eliminated if the plaintiff decides to select a multiplier.³⁸ Third, and most significantly, the improved deterrence should reduce the overall accident rate. Finally, imposing a cap on the maximum available multiplier could restrain the amount of litigation.

(8) *The proposal is limited to negative-value-claims.*³⁹ Although negative-value-claims are the exclusive focus of our proposal, it is worthwhile to consider negative-value-defenses as well. When a defendant's cost of litigation is high relative to the benefit of the defense, it might be justified to allow the defendant to select a multiplier. Consider the example of a defendant who faces a lawsuit for using copyrighted content without requesting permission from the copyright holder. Assume that the defendant has a valid defense against the lawsuit (e.g. on the basis of the fair use doctrine).⁴⁰ Suppose that

³⁵ Lower multipliers increase the frequency of settlement.

³⁶ Note that a maximum multiplier would limit the increase of expenditures in individual cases.

³⁷ The additional risks imposed by our proposal should increase the settlement rate because (a) the costs of risk widen the settlement range and (b) risk-averse plaintiffs will generally select a modest multiplier. Lower multipliers reduce the amount at stake, inducing additional settlements. The parties go to trial only when $M > (C_p + C_d) / (P_p - P_d) \cdot J$. Note that trial costs ($C_p + C_d$) are by definition relatively high because the plaintiff's claim has a negative expected value.

³⁸ See Rosenberg & Shavell, 2005.

³⁹ Alternative proposals, such as the pure multiplier system, similarly benefit plaintiffs exclusively.

⁴⁰ See in this context a proposal by Hamdani and Klement (2005) relating to class actions. In their proposal, the authors consider a collective procedure that consolidates claims by defendants. While the costs of bringing a suit might dissuade potential plaintiffs from suing wrongdoers, the cost of trial might lead defendants with good arguments to default or settle. It is argued that enabling the aggregation of claims rectifies the imbalance between a common plaintiff and the various defendants. To achieve defendant consolidation, the authors propose to implement a defence-class action device that provides class attorneys with the necessary incentives to take on such cases.

the plaintiff, a large record company, has a 10 percent chance of winning the claim in court (e.g. because the court will make an error). The defendant's legal fee is \$15,000 and the amount at stake is \$10,000. Although the expected judgment "only" equals \$1,000, the expected loss at trial equals \$16,000. The defendant may be willing to settle for (e.g.) \$10,000. Although the defendant may have a valid defense, he may not find it economically sensible to pursue the claim in court. Allowing the defendant to select a multiplier strengthens the latter's bargaining position. If, for instance, the defendant selects a multiplier of 5, the expected loss at trial now reduces from \$16,000 to \$4,000 ($(1/5) \times (5 \times 0.1 \times 10,000 + 15,000)$).^{41 42}

(9) *The proposal introduces a lottery-based system of adjudication.* One could oppose the proposal because it predicates the availability of litigation on the outcome of a lottery. Indeed, although deliberate randomization has a long lineage,⁴³ systemic randomization in various policy areas might not be optimal. Randomizing, for instance, "the decision whether to receive health insurance," might have the effect of destabilizing patterns of behavior, destroying socially valuable incentives (Samaha, 2009). However, with regard to law enforcement, the legal system regularly treats individuals with similar characteristics differently for the purpose of attaining cost savings and efficiency. Consider for example how the scarcity of resources for monitoring traffic law violations, which also applies to the broader range of law enforcement activities, necessitates a certain element of randomness in the process of handing out speeding tickets (Rosenberg and Shavell, 2005).

5 Comparing Alternative Systems

The primary goal of our proposal is to improve deterrence (where necessary) by turning meritorious claims with negative expected value into positive expected value claims. In order to prevent an increase in litigation

⁴¹ Of course, a defendant will not select a multiplier if the additional risk costs outweigh the reduction in expected trial costs.

⁴² Obviously if both the plaintiff and the defendant are allowed to select a multiplier, complications emerge. The combination of a negative-value-claim and a negative-value-defense may create, for instances, situations where, after the plaintiff selects a multiplier, the defendant picks an even higher multiplier. Because the normative orientation of our proposal is to resolve issues relating to negative-value-claims, further examination of these interaction effects are outside of the scope of this article.

⁴³ Consider, for instance, the decision how to initiate presidential debates, to resolve election ties, to charter school slots, to award green card visas, etc.

costs and the amount of weak and frivolous claims,⁴⁴ our system may need to impose a cap on the available multiplier.⁴⁵

In this Part we compare how our proposal, implemented with a maximum multiplier, performs in comparison to two major alternatives that employ fixed multipliers.⁴⁶ In a “pure multiplier” system, the legislature selects a damage multiplier and litigation is not subject to any additional conditions (i.e. there is no conditional probability of litigation).⁴⁷ In a “fixed conditional multiplier” system, the legislature selects a fixed multiplier and plaintiffs are allowed to proceed with a probability of one over the fixed multiplier.⁴⁸ In what follows we compare both these system to our own “flexible conditional multiplier” proposal.⁴⁹

Although it is impossible to stipulate the optimal multiplier for each system,⁵⁰ this Part attempts to shed light on the relative advantages and disadvantages of the various systems. We first compare a pure multiplier

⁴⁴ For the same reasons, it also seems unlikely that parties entering into a contractual relationship (e.g. producers and consumers, employers and employees) would implement the system (without a limit) to structure their potential future disputes.

⁴⁵ Properly conceived, the social welfare objective is to minimize the sum of social costs: the harm from injury to victims, the costs of precautions, and the costs associated with the use of the legal system. A more comprehensive social cost function would also take into account risk costs and activity levels.

⁴⁶ We are grateful to the referees for suggesting a comparison between alternative systems.

⁴⁷ Such system was analyzed by Kaplow (1993) in a comparison with a system of shifting successful plaintiff's fees. Kaplow found that relying on higher damages is more efficient than shifting fees since fee-shifting is inherently more valuable to plaintiffs with higher litigation costs.

⁴⁸ This resembles a version of the proposal of Rosenberg and Shavell (2005) who proposed a multiplier of 2 and an inverse probability of litigation of $\frac{1}{2}$.

⁴⁹ A further comparison with other systems, such as class actions, is beyond the scope of this contribution. Note that, although our system and class actions may similarly promote certain negative value suits and improve deterrence, a major difference is that the scope of the class action method is limited to the claims of dispersed plaintiffs with correlated liability. Our system could in theory be applied to all kinds of claims. We can also relate our proposal to “bellwether trials”. In a bellwether trial procedure, a statistically significant sample of cases is tried before a jury and the resulting verdicts are used as a basis for remaining cases. Bellwether trials, as does our system, rely on probabilistic reasoning (although in a different way). On bellwether trials, see Lahav (2008).

⁵⁰ Concerning the pure multiplier system, Hylton & Miceli (2005) use data from several RAND studies to derive an optimal deterrence multiplier for the entire tort system of 2. Of course, this number does not reflect the socially optimal multiplier (which takes into account the cost of litigation). The simulated results suggest, however, that “the socially optimal multipliers will often be below the doubling or trebling levels, and sometimes less than one”.

system with a fixed conditional multiplier system (5.1) and proceed to compare the latter system to a flexible conditional multiplier system (5.2).

Before we commence, it is worthwhile to highlight an important advantage of fixed and flexible conditional multiplier systems over a pure multiplier system. Note that a pure multiplier system may lead to excessive internalization if the government does not have sufficient information about the distribution of trial costs of plaintiffs (relative to the amount at stake). The legislature may set the multiplier too high. For example, if initially only one out of ten injured victims would sue, and the multiplier is set at ten, this provides all plaintiffs with a credible threat to litigate but, at the same time, overall compensation will likely be over-internalized – because every plaintiff potentially collects ten times his or her actual damage. To avoid over-internalization, one needs to have a clear view of the distribution of plaintiffs’ trial costs. This risk does not exist with fixed or flexible conditional multiplier systems (even if the government lacks information), since the multiplier and the inverse probability of litigation have a canceling effect on one another.^{51 52} In what follows, we focus on other advantages and disadvantages.

5.1 Pure Multipliers versus Fixed Conditional Multipliers

Assume that the legislature seeks to improve deterrence by promoting negative expected value suits on the basis of a pure multiplier system. Suppose also that the legislature is able to determine the optimal multiplier M (with $M > 1$). How does a pure multiplier system compare to a fixed conditional multiplier model? What system achieves the highest level of deterrence at the lowest possible costs? A first observation is that the multiplier under a fixed conditional multiplier system must exceed M in order to obtain a similar level of deterrence. The explanation is straightforward: if the same multiplier is applied in both systems, the same negative expected value claims are transformed into positive expected ones.⁵³ However, a pure multiplier system increases the expected benefits of a claim more than a fixed

⁵¹ On optimal multipliers in a pure multiplier system more generally, see Hylton & Miceli (2005). The authors stress the importance of striking a balance between the supply of lawsuits and the need to internalize costs.

⁵² Note that underinternalization is possible with all of the systems under discussion.

⁵³ This follows from the fact that $P_p.M.J - C_p \geq 0 \Leftrightarrow P_p.J - C_p/M \geq 0$. In other words, claims that are filed under the pure multiplier system, are also be filed under the fixed conditional multiplier system and vice versa.

conditional multiplier system (with the same M).⁵⁴ It follows that a fixed conditional multiplier system necessitates a higher multiplier in order to induce an equal level of deterrence. This implies that - if we hold the plaintiff probability of success constant - more plaintiffs with high litigation costs will file under a fixed conditional multiplier system. Alternatively, if we hold the litigation costs of the plaintiff constant, a fixed conditional multiplier needs to promote a higher number of weaker claims to achieve the same level of deterrence.⁵⁵ But fixed conditional multiplier systems also have advantages over pure multiplier systems. A fixed conditional multiplier system may greatly reduce litigation costs because it eliminates additional claims. A simple numerical example may demonstrate the advantages and disadvantages of both systems. Assume that there are 5 types of plaintiffs and one of each type. The plaintiffs only differ with regard to their litigation costs. Plaintiff of type 1 has litigation costs of 100, type 2 of 150, type 3 of 200, type 4 of 250 and type 5 of 300. For the sake of simplicity, we assume that the plaintiff and the defendant face the same litigation costs. The amount at stake is 100. The probability of prevailing is 80 percent for each type of plaintiff. We assume that all cases are litigated.⁵⁶ Suppose that the optimal pure multiplier is 2. As a result, plaintiffs of type 1 and type 2 will be motivated to sue, but not the other plaintiffs. The expected loss for the defendant equals $0.8 \times 2 \times 200 + 100 + 150 = 570$. The total litigation costs equal $2 \times (100 + 150) = 500$. We can demonstrate that a fixed conditional multiplier system can achieve higher levels of deterrence at equal costs. Suppose that a fixed conditional multiplier system applies a multiplier of 4. As a result, all 5 types of plaintiffs will sue. The expected loss for the defendant equals $5 \times 0.8 \times 100 + 1/4 \times (100 + 150 + 200 + 250 + 300) = 650$. The total (expected) litigation costs equal $1/4 \times 2 \times (100 + 150 + 200 + 250 + 300) = 500$. Of

⁵⁴ It is easy to see that $P_p.M.J - C_p \geq P_p.J - C_p/M$ whenever $P_p.J - C_p/M \geq 0$. The proof is as follows: $P_p.M.J - C_p = P_p.J - C_p + (M-1).P_p.J \geq P_p.J - C_p + (M-1).C_p/M = P_p.J - C_p/M$. Also: $P_d.M.J + C_d \geq P_d.J + C_p/M$.

⁵⁵ Note that when both systems use the same multiplier, those relatively weak claims that are promoted under *both* systems, are promoted more strongly under a pure multiplier system. For example, suppose that a plaintiff has a 30% chance of winning in court, the amount at stake is \$1,000, the plaintiff's trial costs are \$400, and that M is 2. Under a pure multiplier system, the expected value of the plaintiff's low probability claim increases from \$-100 to \$200. Under a fixed conditional multiplier system, the expected value only increases to \$100. Such a system would require a multiplier of 4 to obtain an expected value of \$200 for this claim. More generally, if both systems work with different multipliers, a fixed conditional multiplier system with multiplier M' promotes a claim with characteristics P_p , J and C_p in the same way as a pure multiplier system with multiplier M when $M' = C_p / (C_p - P_p.J.(M-1))$. Note that when $P_p.M.J - C_p > P_p.J$, there is no M' that will allow both systems to produce the same expected value.

⁵⁶ If not all cases are litigated, higher costs of settlement work to the benefit of a pure multiplier system, since more cases are filed (and thus settled) under a fixed conditional multiplier system (if the goal is to attain the same level of deterrence).

course, these examples do not prove that a fixed conditional multiplier system is always preferable to a pure multiplier system. It merely illustrates that it offers advantages in certain instances, depending on the distribution of litigation costs, the social costs of stimulating relatively weak claims,⁵⁷ and the costs of settlement.

5.2 Fixed Conditional Multipliers versus Flexible Conditional Multipliers

How does our proposed system of a flexible conditional multiplier system (with a maximum multiplier) compare to a fixed conditional multiplier system? Most obviously, because a flexible conditional multiplier system allows plaintiffs to select multipliers below the maximum, fewer claims will be eliminated. Note, however, that plaintiffs with high trial costs are likely to select relatively high multipliers. Moreover, flexibility - the fact that plaintiffs *can* ask for lower multipliers - has several advantages. First, lower multipliers decrease the risk costs of risk-averse plaintiffs (and defendants). Second, plaintiffs that are relatively risk-averse may be able to extract more generous settlement offers if they are able to select their own multiplier (below the maximum multiplier). With lower multipliers, risk-neutral (or less risk-averse) defendants have fewer opportunities to take advantage of the fear among risk-averse plaintiffs- that is, that they will end up empty-handed.⁵⁸ Similarly, it may be valuable to allow a plaintiff to select a multiplier below the maximum when the trial costs of the defendant are higher than those of the plaintiff.⁵⁹ This occurs, for instance, if the stakes are higher for the defendant than the plaintiff, as is often the case in tort suits where defendants are often repeat players.⁶⁰ When plaintiffs obtain larger settlement amounts, deterrence increases. Note further that flexible multipliers (e.g. maximum 2 instead of fixed at 2) do not have any effect on the ability to file frivolous claims.

⁵⁷ Since a fixed conditional multiplier needs a larger multiplier to achieve the same level of deterrence, more weak cases will be filed (see above).

⁵⁸ Note that a flexible system still allows the less risk-averse plaintiffs to choose the maximum multiplier.

⁵⁹ When the plaintiff expects to settle, a larger multiplier than the minimum multiplier benefits the defendant because expected costs decrease more for the defendant than for the plaintiff.

⁶⁰ See, e.g., Siegelman & Waldfogel, 1999.

6 Conclusion

This article advances a new system that may stimulate valuable claims. Our proposal introduces a flexible damage multiplier which inversely affects the probability of adjudication. Plaintiffs are allowed to select a damage multiplier while, at the same time, their access to the courts is restricted with a probability equal to the inverse of the damage multiplier they select. While the expected benefits of litigation remain identical under this system, the expected costs decline. This increases the overall expected value of lawsuits.

The advantages of the proposal are threefold. First, by reducing the costs of litigation relative to the gains, a multiplier creates a credible threat to sue for some individuals that would otherwise not pursue claims that have substantial merit. Consequently, the deterrent function of the legal system is improved. Second, our proposal reaches these objectives without inducing excessive precautions. Because the random element of adjudication is set off against the increased damages of the multiplier, the expected loss of a suit remains more or less equal for the defendant.⁶¹ Third, our proposed system has the advantage of providing plaintiffs the opportunity to self-select the optimal multiplier. The selected multiplier may strongly differ from plaintiff to plaintiff, and depends *inter alia* on risk attitudes and differences in litigation costs between plaintiff and defendant.

Our proposal has certain disadvantages that can be eliminated to some extent. Most notably, the system may attract frivolous lawsuits and it may advance lawsuits involving weak claims. Also, in the process of converting claims with negative expected value into positive expected value claims, our proposal may lead to an overall increase of litigation costs. Even though most cases may settle in our proposed system, the parties incur costs during the settlement process. Still, our proposal mitigates litigation costs in a number of ways. First, under our proposal only a fraction of claims will be accepted for litigation. Second, some positive value suits, which would have been litigated without our proposal, will be eliminated if the plaintiff decides to select a multiplier.⁶² Third, and most significantly, the improved deterrence will reduce the amount of litigation due to the lower overall accident rates that result.

⁶¹ This stands in contrast to systems of “pure multipliers” (without a random element of adjudication). Under a pure multiplier system, there is a risk that the multiplier will be set either too low (leading to inadequate precautions) or too high (leading to excessive precautions). A multiplier that brings about first-best deterrence must be chosen by striking a balance between the supply of lawsuits and the need to internalize costs. *See* Hylton & Miceli, 2005.

⁶² *See* Rosenberg & Shavell, 2005.

Comparing our proposal to two alternative systems that involve pure and fixed conditional multipliers, we tentatively conclude that no system dominates under all circumstances. A more elaborate and refined social welfare model could examine the overall effect of our (and other) proposal(s). Such a model should take into account settlement and trial expenditures (endogenously determined with potential differences between plaintiffs and defendants), risk aversion (including potential differences between plaintiffs and defendants), court error, bargaining power, the social costs of litigating relatively weak cases, and the effects of asymmetric information.⁶³

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