A Sampling-Based System of Civil Liability

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To achieve more cost-effective deterrence of unreasonable risktaking through civil liability. I propose and demonstrate previously unrecognized benefits of using simple random sampling to resolve multiple claims against a business or government defendant in the aggregate. I show that counter to intuition and prevailing assumptions and practice, simple sampling will enhance, not compromise, deterrent results regardless of the number of claims and the variety and significance of differences among them. Indeed, it can be used to resolve multiple claims that bear no resemblance to one another except for targeting the same defendant. The proposal can thus be employed to increase the efficiency of resolving relatively similar claims in class and consolidated actions and, by extending the application of such collectivizing processes, lower the cost of resolving all other claims that would be adjudicated as separate actions. I close by sketching a design for a reformed civil liability system that fully integrates and exploits the law enforcement benefits of sampling to better achieve the primary social objectives of accident risk deterrence and insurance.

INTRODUCTION

To advance the cause of a safer and healthier society, I propose overhauling the system for enforcing law through privately prosecuted civil actions involving

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multiple plaintiffs suing a common business or government defendant. In providing goods and services to many people and engaging in numerous contractual and conflict-prone relationships, businesses and governments inevitably generate risk — very often systematically — of harm to others that society seeks to regulate by, among other means, imposition of civil liability for damages and equitable remedies. Rather than resolving such common-defendant litigations pursuant to the "day-in-court ideal"¹ whereby each claim is separately determined on an individualized basis (unless the parties provide otherwise by pre- or post-dispute agreement) the system I propose would decide the defendant's aggregate liability and damages by simple random sampling.²

- See Ortiz v. Fibreboard Corporation, 119 S. Ct. 2295, 2323 (1999). The day-incourt concept is not only a preeminent example of "transendental nonsense," see Felix S. Cohen, *Transcendental Nonsense and the Functional Approach*, 35 COLUM. L. REV. 809 (1935), but is perversely paradoxical in that its prescription for individualistic and preclusion of collectivized adjudication undermines the well-being of everyone whose life, livelihood, and liberty depend upon the effective enforcement of law. On the corruption of the legal process worked by the U.S. Supreme Court in name of the "day-in-court ideal" and similar "private law" rubrics, see David Rosenberg & Kathryn E. Spier, *The Perverse Paradox of the Day in Court Ideal and the General Case for Class Action* (unpublished manuscript, Apr. 4, 2014) (on file with author).
- 2 By "simple random sampling," I mean the standard statistical technique of surveying a small population of individuals, each being selected with equal probability from a larger population of individuals. See ROBERT M. GROVES ET AL., SURVEY METHODOLOGY (2004). In contrast, stratified sampling entails dividing heterogeneous populations into homogenous subgroups (strata) before random sampling representative members of each group. On the advantages of stratified sampling, see Carl-Erick Särndal et al., Stratified Sampling 100-09 (2003). Despite the well-known downsides of using stratified sampling in many areas of civil liability, including complexity, cost, and unreliability, courts and commentators generally employ the method, albeit as a matter of uncritical and uninformed habit. See D. James Greiner, Causal Inference in Civil Rights Litigation, 122 HARV. L. REV. 533 (2008). The fundamental failing of those who adhere to this status quo, see, e.g., Michael J. Saks & Peter David Blanck, 44 STAN. L. REV. 815 (1992), or who, like Greiner, seek an efficient way of avoiding regression analyses and other costly complexities of stratification, is their disregard of deterrence theory. Essentially, they are unnecessarily pursuing accurate, *ex post* determinations of individual liability and damages, when, as I demonstrate, simple sampling alone without stratification is sufficient for deterrence purposes. It is enough that the prospective defendant ex ante contemplates bearing the total social harm, regardless of whether such aggregate expected sanction is internalized as the

Essentially, I propose using this inexpensive, straightforward, broadly applicable sampling method to randomly select one or more claims from a set (pool or group) of claims, resolve the selected claim(s) in the normal course of litigation by judgment or settlement, and apply (or attribute) the outcome (if one claim is selected) or the average of outcomes (if more than one claim is selected) to all of the claims in the group. Representatives of the plaintiffs and the defendant would jointly agree on the number of claims to be sampled (with the court setting a default number for sampling if the parties do not reach agreement). For example, suppose the parties select two claims from a set of 100 and sampling results respectively in a \$10 settlement and a \$20 judgment, then the \$15 average of these outcomes would be treated as the outcome for each and every one of the 100 claims in the group, with the result that the defendant would be assessed \$1500 in aggregate liability and damages. This method could be used to resolve a defendant's aggregate liability and damages across any number of claims, regardless of the factual, legal, and other litigation-related differences among them.

Determining a common defendant's aggregate liability and damages by this method of random sampling produces the primary direct benefit of enhancing the cost-effectiveness of privately motivated and financed law enforcement by saving substantial litigation and adjudication expenses *without* compromising the generally overriding deterrence function of civil liability. Indeed, given the high rate and volume of litigation against business and government defendants, the efficiency gains from use of random sampling the claims on the courts' dockets are likely to be considerable. Currently, litigation against business and government defendants (broadly defined to include their liability insurers as real parties in interest, financiers, and other affiliated facilitators) comprises most of the civil action docket in U.S. courts.³

ex post sum of (supposed) individualized, accurate determinations of all claims or the average determination — equaling any aggregate amount of damages — derived from a random sample and attributed to all claims in the pool.

See, e.g., THOMAS S. COHEN, FEDERAL TORT TRIALS AND VERDICTS, 2002-03, at 3, 7 (2005), available at http://www.bjs.gov/content/pub/pdf/fttv03.pdf (reporting that suits by individuals versus U.S. government and businesses comprised 12.4% and 59.3% respectively of all federal tort cases resolved by trial in the surveyed period). In state courts, 36.6% of tort trials involve business and government defendants. See Lynn LANGTON & THOMAS H. COHEN, CIVIL BENCH AND JURY TRIALS IN STATE COURTS, 2005, at 3 (2008), available at http://www.bjs.gov/content/pub/pdf/cbjtsc05.pdf (reporting that 36.3% of state court trials named businesses or governments as defendants). Although the majority of civil actions are brought against individual defendants, it is reasonable to infer that in most of these cases — notably including motor vehicle, medical malpractice,

Much of it involves relatively routine traffic accidents and the like, which depending on the nature and scale of the risk-taker (or insurer) can result in annual caseloads normally running into the hundreds or thousands of claims. A significant portion also arises from programmatic operating policies, mass production activities, and other systematic risk-taking that can give rise to complex large-scale litigations, each comprised of numerous similar claims, sometimes numbering in the tens of thousands or even millions, alleging harm from mass tort, product defect, environmental derogation, employment discrimination, antitrust conspiracy, consumer or securities fraud, corporate governance, civil rights, and other violations of state and federal common, statutory, and constitutional law.

Reducing the overhead for this litigation would justify adoption of random sampling today. And it could be accomplished with a simple change in the system to decouple the deterrence and "compensation" functions.⁴ However, in my view, the present civil liability system is a grotesque waste of social resources, and the best reform might well be to shut it down completely.⁵ My proposal for random sampling therefore looks to the longer-term future and posits a broadly redesigned system of collectivized adjudication. Basing the civil liability system on random sampling would enable it to function as a socially acceptable complement to other state and market modes of law enforcement.

The collectivized system I envision would have two fundamental attributes, both of which virtually imply the use and utility of random sampling. First, the core function of the system would be to promote the social objective

and premises liability claims — the real party interest on the defense side was a liability insurance company and a large fraction of the balance involve a common plaintiff pressing copyright, debt collection, mortgage property foreclosure and other claims presenting common questions of law or fact.

⁴ See infra Section III.B.

⁵ For the critique of civil liability as a source of socially beneficial compensation, see *infra* Section III. B., drawing upon my work and that of others, including STEVEN SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW 186-99 (1987) [hereinafter SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW]; A. Mitchel Polinsky & Steven Shavell, *The Uneasy Case for Product Liability*, 123 HARV. L. REV. 1437 (2010); Kenneth S. Reinker & David Rosenberg, *Unlimited Subrogation: Improving Medical Malpractice Liability by Allowing Insurers to Take Charge*, 36 J. LEGAL STUD. S261 (2007); David Rosenberg, *The Causal Connection in Mass Exposure Cases: A 'Public Law' Vision of the Tort System*, 97 HARV. L. REV. 849, 918 (1984); and Steven Shavell, *The Fundamental Divergence Between the Private and the Social Motive to Use the Legal System*, 26 J. LEGAL STUD. 575 (1997) [hereinafter Shavell, *Fundamental Divergence*].

of optimally deterring (or preventing) unreasonable (socially undesirable) risk-taking. Deterrence would be given priority over compensation.⁶ This principle would hold even if damages were distributed according to insurance theory and all of the welfare-destructive pathologies of such individualized deontological concepts as "corrective justice" and "private law" were rooted out of the system.⁷ The reason is straightforward. Implementing such concepts can necessitate sacrificing optimal deterrence by compensating harm from otherwise reasonably preventable risk. Because by definition the costs of preventing unreasonable risk are lower than the costs of compensating loss resulting from such risk, denying priority to deterrence over compensation reduces the wellbeing of everyone in society *ex ante*.⁸

The other fundamental feature of the collectivized system is a structural separation of the process for achieving deterrence from the process for providing insurance to plaintiffs. In the collectivized system I envision, the court would determine and levy (or set the terms for payout of) the defendant's aggregate liability and damages before and without regard to any decision as to how and to whom any recovery might be distributed. This approach contrasts with the traditional individualized final judgment rule that conditions the award of damages (or other remedies) on each plaintiff (whether in a class action or otherwise) successfully establishing his or her particular case for relief, at the very least, on all claim-specific elements (e.g., specific causation, loss, exercise of reasonable care, reliance, damages). Overthrowing this restrictive rule frees deterrence from being held hostage to the high, often prohibitive litigation costs and risks of the requirement that each plaintiff prove his or her individual claim.

Proceeding on the assumption that random sampling can significantly reduce wasteful litigation costs, I show in Part I why and how using this method of determining aggregate liability and damages will enhance the functioning of civil liability as a means of promoting the social objective of optimal deterrence. In Part II, I examine the cost effectiveness of determining liability and damages in the aggregate for all claims by random sampling relative to resolving them on an individual basis, claim-by-claim (the benchmark process), concluding that the proposed sampling method can not only greatly expand and increase

⁶ The deterrence priority argument is elaborated in David Rosenberg, *Mandatory-Litigation Class Action: The Only Option for Mass Tort Cases*, 115 HARV. L. REV. 831 (2002).

⁷ For a comprehensive argument to design and operate a civil liability system solely according to the norm of welfare maximization, see Louis Kaplow & Steven Shavell, *Fairness Versus Welfare*, 114 HARV. L. REV. 961 (2001).

⁸ See Rosenberg, supra note 6.

the efficient use of class and consolidation actions to resolve common question claims, but also substantially reduce the costs of litigating dissimilar claims. In Section III, I describe the collectivized adjudication system that would be built upon and animated by random sampling, in particular (1) collectivized adjudication of the defendant's aggregate liability and damages proceeding on a mandatory basis without opportunity for plaintiffs to exit or opt-out; (2) distribution of aggregate recoveries solely in accord with the theory and methods of insurance, and generally paying over the proceeds to a national social insurance program such as Social Security; and (3) coordination of complementary public and private enforcement efforts through a government auction of a private license to prosecute a collective action with the option to buy it back at the winning bid price. In Part IV, I conclude with brief remarks on appropriate limitations on use of simple random sampling and responses to conferee comments on my proposal.

I. DETERRENCE

A. Prospective Defendant Incentives to Take Precautions

The focus here is on the deterrent effects of resolving heterogeneous claims by random sampling, examined mainly from the perspective of potential defendants with brief consideration of the prospective plaintiffs' incentives. To assess these incentive effects, I compare random sampling to a benchmark process more or less resembling the presently existing system that generally resolves claims on an individualized basis. To focus and simplify this comparative analysis of incentive effects, I adopt certain unrealistic assumptions about the benchmark process: that all (and only) meritorious claims are filed and prosecuted to judgment after trial and that this process achieves optimal deterrence. These suppositions starkly at odds with the real world of high litigation costs and risks that drive the parties to forgo filing or to settle, often at an excessive discount, many and possibly most meritorious claims (and defenses), thereby posing significant deterrence problems.⁹

⁹ For discussion of my sampling proposal in relation to ("negative expected value") claims (and defenses) that are not worth prosecuting to trial or at all, see *infra* Part II; *infra* note 15 and accompanying text; and *infra* Section III.A. For discussion of my sampling proposal in relation to (extortionate) "nuisance-value" litigation strategies, see *infra* Subsection II.B.4. For discussion of my sampling proposal in relation costs, risks, and settlement rates, see *infra* Subsections II.B.1-3.

The chief question here is whether application of the sampling method will distort incentives relative to the benchmark. I first consider the deterrent effects of random sampling under the basic liability regimes: strict and negligence. Following that discussion, I examine whether use of random sampling would distort a prospective defendant's choice between customized versus standardized precautions. Finally, I consider the testing case for random sampling, whether it compromises deterrence in applying average law to resolve conflicts in the legal rules governing plaintiffs' claims.

Essentially, the following analysis shows that the incentives of prospective defendants to take socially appropriate precautions against accident are unaffected by random sampling. The reason is that the decreased probability of formal recovery under the first step of the proposal is precisely offset by an increase in the probability of derivative recovery under the second step. Thus, in the first step under random sampling there is a 1/n chance (where n denotes the number of claims) of the defendant paying and the plaintiff recovering damages on a given claim. This decreased probability of liability and damages is fully offset in the second step: multiplying the selected-claim outcome or average of the selected-claim outcomes by the number of all claims effectively maintains the defendant's total expected liability (1/n damages x n) and, depending on the rules governing distribution of damages, a given plaintiff's total expected recovery (1/n damages x $n \ge 1/n$) at the level it would have been under the benchmark process.

1. Liability Rules

i. Strict Liability

Strict liability provides a straightforward basis for demonstrating how random sampling replicates the aggregate expected liability and damages produced by the benchmark process of separate trials.

To illustrate, consider a defendant business that operates a car and a truck as part of its business and faces the prospect of two claims, claim A for \$100 arising from a traffic accident involving use of the car and claim B for \$300 arising from an accident involving the truck. If these claims were resolved at trial in the benchmark process, the firm would anticipate the trial outcomes from both claims to produce aggregate liability and damages of \$400. Under random sampling, if claim A is selected, the firm expects total liability of \$100 x 2 or \$200; if claim B is selected, the firm expects total liability of \$300 x 2 or \$600. Expecting each result with 50% probability, the firm therefore anticipates aggregate liability of \$400.

Now consider the firm's incentives for precautions under the two adjudicative regimes. For this purpose assume that if the firm does not spend reasonably

on precautions, in particular by making a standardized investment of \$150 to improve the safety of both vehicles, the harm caused by each would double — from \$100 to \$200 from the car and from \$300 to \$600 from the truck. As a rational profit-maximizing enterprise, the firm chooses the level of precautions that minimizes its "total accident costs" — here equaling the sum of the costs for reasonable precautions and expected liability.¹⁰ Under the benchmark process, the firm minimizes total accident costs at \$550 by taking reasonable precautions at a cost of \$150. For if it invested less than the reasonable amount, in the example, \$0 for both vehicles, the firm would bear total accident costs of \$800.

Random sampling produces the same results: facing the same aggregate expected liability the firm minimizes total accident costs by investing the reasonable amount in precautions for both vehicles. Thus by investing \$150, the firm anticipates aggregate liability and damages of \$400 (50% x \$200 + 50% x \$600) and therefore incurs total accident costs of \$550. If the firm invested \$0 in precautions for both vehicles, random sampling would confront the firm with total accident costs equal to aggregate expected liability and damages of \$800 (50% x \$400 + 50% x \$1200). Notably, random sampling generates the same deterrence effects as would the benchmark process, but at the cost of conducting one trial instead of two.

ii. Negligence

Negligence is a ubiquitous standard for determining civil liability and generally entails a complex cost-benefit analysis. Although negligence and strict liability differ on several dimensions in practice, the preceding analysis of strict liability explains and illustrates the effectiveness of random sampling under a governing negligence rule to replicate the deterrence effect of the benchmark process. To see this symmetry in deterrence results, consider the above example, and to account for the structural distinctiveness of the negligence rule, assume that the taking of reasonable precautions absolves the firm not merely of some, but rather of all liability. It is evident that the firm would take reasonable precautions under both adjudicative processes to lower total accident costs from \$800 to \$150. Random sampling is the socially preferable mode of adjudication for the simple reason that it generates the optimal threat of liability via the prospect of one rather than two trials.

¹⁰ It would also take account of the costs for expected litigation and other factors, including business reputation and possibly government sanctions. For the sake of simplicity, I ignore these factors in this Part.

2. Standardized and Customized Safety Strategies

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Application of random selection will not lead a firm to alter the safety strategy that it would otherwise follow to minimize its total accident costs in the benchmark process. In particular, random selection does not affect the accident cost-minimizing choice the firm would make in the benchmark process as between adopting a standardized or customized investment in precautions regarding its various risky activities and exposures to liability. That choice, in short, is dictated solely by the firm's conclusion as to its best economic advantage.

This is readily illustrated by modifying the example so that the firm can augment its standardized investment of \$0 or \$150 across both the car and truck by spending on a customized basis an additional \$25 for the car and \$75 for the truck, reducing harm on the margin caused by these vehicles from \$100 to \$50 and from \$300 to \$200 respectively. It is apparent that under a regime of strict liability (and by implication, negligence) in the benchmark process, the firm minimizes its total accident costs by making the reasonable, marginal customized investments. Spending a total of \$100 for additional safety effects a marginal net reduction of \$150 in total harm from \$400 to \$250 and thus of \$50 in total accident costs for the firm from \$550 to \$500. If it made the marginal customized investment only for the truck, the firm had, but would not elect, the standardized strategies of investing \$0 or \$150 for both vehicles, as these choices would result respectively in comparatively higher total accidents costs of \$800 and \$550.)

Random sampling produces the same results. Internalizing the same aggregate expected liability under random sampling as it would under the individualized benchmark process, the firm minimizes total accident costs by investing the reasonable amount in customized precautions for both vehicles. Thus by making the standardized investment of \$150 plus the additional customized investment of \$25 for the car and \$75 for the truck, the firm expects aggregate (strict) liability and damages of \$250 (50% x (\$100 + \$400) and hence total accident costs of \$500.

Because aggregate liability and damages assessed under random sampling could exceed by far those assessed on the same claims resolved in the benchmark process, it might be thought that random sampling could distort incentives. In particular, the concern might be that the threat of magnified damages from the selection of claims relating to a particularly high liability source of risk would induce a prospective defendant to overinvest in customized precautions at that source to reduce its overall liability exposure. So, in the above example, if the firm does not invest the additional \$75 for the truck, it would incur liability on the resulting claim of \$300 in the benchmark process, while liability on selection of the truck-related claim under random sampling would be twice as much.

But this concern is misplaced. A prospective defendant will not be led by random sampling to depart from the safety strategy that would otherwise minimize its total accident costs in the benchmark process. In short, the firm would make the same investment in customized precautions under random sampling as it would to minimize accident costs in the benchmark process. The reason is evident: under random sampling, the firm expects to bear \$600 on the truck-related claim *with a 50% probability* and thus bears the same expected liability of \$300 from that claim as it would in the benchmark process.

This proposition holds generally; a firm's choice of safety strategy to minimize, from the *ex ante* perspective, its total accident costs will remain unchanged under random sampling from what it would have been in the benchmark process, despite the chance that total *ex post* damages under the former could be much higher — or lower — than they would be under the latter. Because total expected accident costs are the same under both the benchmark process and random sampling, the firm will operate according to the same incentives and choose the same type, level, and allocation of investments in precautions *ex ante*, regardless of the mode of adjudication.

3. Conflicts of Law

Interstate (and international) risk-taking frequently requires a business to operate under differing and often sharply conflicting regimes of governing substantive law. Accordingly it can expect claims to arise under varying legal regimes. In the benchmark process, each claim would be determined pursuant to the relevant governing substantive law. By contrast, random sampling effectively determines all claims pursuant to the "average law."¹¹

¹¹ The natural and usual result of applying differing state laws in any case of interstate risk produces the "average law," in other words, the compound law representing the sum of the probabilistically weighted inputs from application of each of the state laws involved. To avoid confusion, I note timeframe-related differences in the sense in which the phrase "average law" is used here. References relate to two basic timeframes: first, *ex ante*, when the prospective defendant contemplates whether and how safely to engage in an activity involving interstate risk; and second, *ex post*, when courts generate settlements and judgments determining the actual defendant's aggregate liability and damages (plus litigation cost) — if any. *Ex ante*, average law is exactly what the prospective defendant knows and internalizes. If potential liability and damages are less than certain to occur, then the compound law the firm takes into account is generally the sum-total of probabilistically weighted state-specific inputs, in other words, the aggregate expected liability and damages (plus litigation cost). *Ex post*, however, in the

Nevertheless, as with any other claim-specific variable, application of random sampling does not change the business's incentives from those that would motivate its risk-taking behavior under the egis of the benchmark process. The law governing the choice to engage in an activity involving interstate risk is the aggregate total or whole of the functional content of all the applicable differing laws. From the *ex ante* perspective of a business contemplating its liability exposure for activity that can be designed and implemented to involve more or less interstate risk, the functional content of the governing law is the sum of the adverse consequences and effects the business anticipates incurring under each of the applicable differing laws — in other words, the average law.

This is a reality dictated by business necessity in the benchmark process; only by assessing the total functional content of all of the applicable state laws can a business rationally manage interstate risk and minimize the adverse legal consequences and effects of its choice of underlying conduct across all relevant jurisdictions. Indeed, the resulting business choices of interstate risk from the production and marketing of products or services generally correspond with the commands of no actual law of any of the states (except by sheer coincidence), but rather reflect a liability-minimizing strategy formulated in response to the average functional content of the differing laws. *Ex ante*, the business can thus be viewed as designing its safety strategy in response to the internalized aggregate expected liability. Essentially, the laws of affected states, like tastes of potential consumers, represent a demand for safety that the firm seeks to efficiently supply. The basic logic of this analysis holds regardless of how many differing state-specified liability standards there are, and regardless of how they are distributed in the market.¹²

benchmark process the compound law is the sum of the "certain" state-specific inputs to the case-by-case determination of aggregate liability and damages (plus litigation cost). *Ex post*, "average law," in the literal sense, exists only as an aggregate average extrapolated from a randomly selected sample of claims and respectively governing laws.

¹² If, for example, there are two states and one state-specified standard governs a disproportionate share of claims, the solution to the business's problem is a kind of weighted average skewed towards, but not precisely corresponding with, that state's law. Likewise, if there are multiple state-specified liability standards in force, the business's problem becomes one of finding an appropriate intermediate point among them, but only by coincidence corresponding with any one of them. So too when the firm chooses state-customized rather than interstate-standardized safety strategies. Indeed, it will always choose the best strategy, customized or standardized, for reducing its total costs of liability and litigation expense. Thus, regardless of the variations, the core point holds: at the time it plans to engage

B. Prospective Plaintiff Incentives to Take Precautions

Because random sampling does not imply or influence in any degree the mode and terms for distributing the aggregate damage recovery (if any) among plaintiffs or elsewhere, it will not necessarily change the legally projected incentives for prospective plaintiffs to take precautions from what those incentives would be in the benchmark process. In particular, if the liability rule conditioned recovery on plaintiffs' avoidance of contributory negligence, that is, on their taking reasonable precautions against accident, application of random sampling would not distort plaintiffs' incentives to comply from what they would be were their claims resolved separately on an individual basis. For plaintiffs whose claims are governed by a contributory negligence rule, mini-trials or other individualizing process, including settlement, could be employed to determine and distribute damage awards accordingly.¹³ Random sampling will still involve less cost than the trial of all claims separately, though the advantage will vary depending on the litigation and adjudication demands imposed by the rules regulating plaintiff incentives and recoveries.

Notably in the collectivized adjudication system that, in all but the rarest type of case, pays over the proceeds of the aggregate recovery to subrogated insurers or Social Security, it would be possible in bilateral cases of joint risk contribution to use the optimal liability rule that holds both defendant and plaintiff strictly liable for the loss from accident. Currently, this rule is unrealizable. Under standard rule designs only one party can be held strictly liable, while the behavior of the other party is regulated at most by the negligence rule (albeit with some strict effect due to its objective formulation and application).¹⁴ But, if the plaintiff receives no payout in civil liability damages, then defendant can be subjected to the threat of strict liability while the plaintiff will in effect strictly bear the loss from any residual risk.

in activity involving interstate risk, the business determines its optimal legal cost-minimizing safety strategy under the average law.

¹³ The defendant's incentives would remain intact because the aggregate liability and damages as determined by sampling, and hence the aggregate recovery against which individual claims are prosecuted, would reflect a deduction for the average level of contributory negligence and other defense offsets. Alternatively, the defendant would receive a rebate for the portion of the gross aggregate recovery that reflects the amount its defenses may provide a shield against paying damages to given plaintiffs. To avoid jeopardizing deterrence objectives, the rebate offset must not include claims forgone as uneconomical due to the costs of litigating the defense.

¹⁴ See Shavell, Economic Analysis of Accident Law, supra note 5, at 29.

II. Costs

In this Part, I address the question whether random sampling entails greater operational costs than would be incurred to resolve all claims in the benchmark individualized process. I conclude that it does not; random sampling is far and away the more efficient means of determining the defendant's aggregate liability and damages. Plainly, random sampling's resolution of a fraction of a set of claims compared to all claims in the set, say sampling one claim to resolve a set of ten claims rather than going to trial or settling some combination of all ten, will yield substantial savings.

However, because relative net benefit rather than cost per se should govern the choice of the socially preferable system design, it is important to relax the assumption made in the foregoing deterrence analysis to provide a more realistic basis for assessing the comparative deterrent effects of random sampling versus the benchmark individualized process. In reality, the high litigation cost in the individualized process dulls its threat of aggregate liability for a defendant's sanctionable risk-taking by excluding the typically large fraction of claims that promise too little recovery to economically justify their prosecution.¹⁵ Random sampling, by contrast, encompasses most and

¹⁵ See David Rosenberg & Steven Shavell, A Model in Which Suits Are Brought for Their Nuisance Value, 5 INT'L REV. L. & ECON. 3 (1985). For a survey of literature, see Kathryn E. Spier, Litigation, in 1 HANDBOOK OF LAW AND ECONOMICS 259, 268-80, 305-07 (A. Mitchell Polinsky & Steven Shavell eds., 2007). It is estimated that most meritorious claims are not prosecuted by plaintiffs, Michael J. Saks, Do We Really Know Anything About the Behavior of the Tort Litigation System — And Why Not?, 140 U. PA. L. REV. 1147, 1190 (1992). Many of these forgone claims involve small losses, for example ranging in the hundreds and even up into the tens of thousands of dollars that do not promise a sufficient recovery to cover the expected litigation costs. It is said that the chief function of class actions is to render common question claims with negative expected recovery value economically feasible to prosecute. See Amchem Prod., Inc. v. Windsor, 521 U.S. 591, 617 (1997). However, the negative expected value nature of claims cannot explain the low rate of litigating meritorious cases. Such claims usually appear uneconomical because the expected judgment is less than a filing fee or other fixed litigation cost. But these costs are typically subject to loser-pay cost-shifting rules, and hence are not likely to be borne by plaintiffs pressing meritorious claims. A more robust explanation is that most claims — including those involving very large losses — fail to promise sufficient net recoveries that exceed the plaintiff attorneys' opportunity costs, an investment barrier that becomes all the more imposing when plaintiffs must prosecute common question claims outside of a mandatory class action. See infra Section III.A.

probably all such claims that would have been priced out of the individualized process. As explained more fully below, because the value of a sampled claim is multiplied by the number of pooled claims, random selection renders virtually any selected claim worth prosecuting regardless of its standalone economic viability in the individualized process.

This comparative cost assessment begins with a brief refutation of the general objection that sampling is an "inaccurate" means of determining liability. Essentially, the complaint is that statistical outcomes are averages and hence never represent findings of a given plaintiff's "true" individual and of the defendant's "true" aggregate liability and damages. The inquiry will then focus on key categories of potential cost: risk-bearing, litigation, settlement, and gaming. To account for cost variations relating to the differences among pooled claims, I assess the functional productivity of random sampling by comparing it to the benchmark process for resolving dissimilar claims case-by-case and for resolving similar claims by class or consolidated action.

A. Accuracy

"Accuracy" is often asserted as a self-evident, deontological good or indicium of individual justice.¹⁶ However, occasionally arguments from "accuracy" have been advanced that are amenable to rational, consequentialist analysis. A good example is the accuracy objections to random sampling proffered in Judge Frank Easterbrook's opinion in the Firestone Tire-Ford Explorer case, involving thousands of mass tort claims alleging economic loss from increased risk due to design and warning defects regarding the Firestone tires Ford used to equip most of its Explorer SUVs.¹⁷ Easterbrook ruled against certifying a class action on the ground that the varying, indeed largely conflicting, consumer protection laws of fifty states and other U.S. jurisdictions would entail so much complexity and cost as to render the class-wide trial of all claims completely unmanageable. He found no help in the trial court's decision to use sampling to overcome the choice of law problem. Deriving a general average law, Easterbrook argued, would ignore or suppress significant variables, and thus would skew the estimate of the actual, sanctionable loss and damages incurred by the class as a whole, potentially exposing the defendants to excessive legal sanctions.¹⁸ The practical — and, it seems, in

¹⁶ See, e.g., RONALD DWORKIN, A MATTER OF PRINCIPLE (1985).

¹⁷ In re Bridgestone/Firestone, Inc., 288 F.3d 1012 (7th Cir. 2002).

¹⁸ *See id.* at 1020. *Ex post*, as noted above, the aggregate average liability and damages generated by sampling might well diverge from the sum of the liability and damages that would be generated by resolving each claim separately in the

Easterbrook's view, the best — means for gaining "the information needed for accurate evaluation of mass tort claims" is "a decentralized process of multiple trials, involving different juries, and different standards of liability, in different jurisdictions."¹⁹

Objections to sampling, like Easterbrook's, are fundamentally flawed for failing to define what exactly it is that we want to know accurately. If individual welfare is the animating concern, then the answer to this definitional question must be functional, not intrinsic. In particular, when deterrence motivates our desire for knowledge about defendants' liability and damages, then as I have shown, "accuracy" is as fully achieved by statistical, on-average aggregate assessments as by particularistic, individualized determinations.²⁰ Average law reproduces the results of applying each of the relevant state laws separately. Regardless of the mode of applying the differing state laws — on average or separately — the aggregate outcomes for purposes of deterrence — and compensation — will be identical.

More generally, deterrence focuses on the defendant's *ex ante* expectation of aggregate liability and damages. The "accuracy" required for deterrence purposes is concerned only with whether the threat and imposition of aggregate liability and damages are determined in a way and amount that will lead the prospective defendant (and plaintiff) to "internalize" the socially appropriate level of aggregate expected liability and damages prior to the risk-taking decision in question. Because it is virtually always the case that the prospective defendant knows and responds to its future aggregate liability and damages only as a distribution of probability-weighted outcomes, the threat and imposition of liability that comports with that statistical expectation is all that accuracy for deterrence purposes requires.

benchmark process. However, Easterbrook erroneously presumes that sampling necessarily exposes the defendant to excessive and not deficient liability and damages relative to what it would otherwise incur. *See also* McLaughlin v. Am. Tobacco Co., 522 F.3d 215, 231 (2d Cir. 2008) ("[A]n aggregate determination is likely to result in an astronomical damages figure that does not accurately reflect the number of plaintiffs actually injured by defendants and that bears little or no relationship to the amount of economic harm actually caused by defendants.").

¹⁹ *In re Bridgestone/Firestone, Inc.*, 288 F.3d at 1020 (quoting Judge Posner in In re Rhone-Poulenc Rorer Inc., 51 F.3d 1293, 1299 (7th Cir. 2001)).

²⁰ See supra Subsection I.A.3.

B. Instrumental Questions

1. Risk-Bearing

Employing random sampling may well pose substantial risk for the parties compared to the benchmark processes, since the aggregate treatment of the claims rides on the average outcome of the sample. Aversion to the chance of losing a significant amount of wealth may cause the defendant (realistically, its chief executives and managers) and/or plaintiffs (including counsel and other principal investors in the litigation, separate, class or consolidated action) to psychologically magnify the mathematical expected value of the downside costs of the gamble of determining aggregate liability via luck-of-the-draw random sampling.²¹ However, generally this should not impose significant risk-bearing costs on the parties. They can readily control the degree of risk; more directly, they can choose to reduce the risk by asking for a larger sample (in the extreme, they could have all claims "sampled" and eliminate all risk, as well as all savings).²² In a large set of claims, even a sample of five or ten claims would greatly reduce the variance from the mean value, and correspondingly, eliminate a great amount of risk.

²¹ On the nature and effects of risk-aversion in regard to the choice to purchase insurance and relatedly to litigate or settle civil lawsuits, see SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW, *supra* note 5, at 186.

²² For example, assume multiple plaintiffs whose claims could have three possible trial outcomes: 0, 10, or 20, each with a probability of 1/3. (The outcome of 0 corresponds to losing, 10 to winning with low damages, and 20 to winning with relatively high damages.) If one trial determines the payoff for each plaintiff, then all face the following distribution of outcomes, each with a probability of 1/3: 0, 10, and 20. If two trials determine the payoff for each plaintiff, there are nine possible outcomes, each with a probability of 1/9: (0,0); (0,10); (0,20); (10,0); (10,10); (10,20); (20,0); (20,10); (20,20). Corresponding to these nine outcomes is an average over the two trials for each outcome: 0 (the average of 0 and 0), 5, 10, 5, 10, 15, 10, 15, 20. Note that there are two ways that 5 can be the average, three ways that 10 can be the average, etc. So the probabilities (given in parentheses) of the possible averages are these: 0(1/9); 5(2/9); 10(1/3); 15(2/9); 20(1/9). When comparing this distribution of payoffs to the distribution obtained from one trial, note that the probability of extremes of 0 and 20 falls from 1/3 in one trial to 1/9 after two trials. Also, in one trial, there is no possibility of 5 or 15, but there is after two trials. This is because, with each trial, probabilities near the mean of 10 become more likely, while the extreme results become less likely. Three trials would generate 27 outcomes [(0,0,0); (0,0,10); (0,0,20);(0,10,0); (0,10,10); (0,10,20); etc.], each with a probability of 1/27, and further increasing probabilities near the mean and decreasing the likelihood of the extreme outcomes.

Moreover, the parties will normally have available conventional options for further reducing risk-bearing costs. Thus they can settle on final or partial (e.g., high-low) terms to resolve some or all of the set of claims or sampled claims before or anytime during the random sampling process. For this very reason, the risk-bearing disadvantage of the proposal is self-limiting. If parties are highly risk-averse, they will be very likely to settle in the early stage. Also, as discussed below, the parties prosecuting and defending claims in the collectivized system are likely to be relatively risk-neutral first-party subrogated and liability insurers.

It should be noted that random sampling actually reduces the potential for risk-bearing costs that is thought to encumber the benchmark process for adjudicating similar claims, class or consolidated actions. As described by Judge Richard Posner, the prospect of resolving all class claims in a single class action trial subjects the risk-averse defendant to "blackmail" or "in terrorem" pressures to settle questionable claims or face a potentially bankrupting outlier class-wide judgment of damages.²³ Random sampling eliminates the single class-wide trial and the related risks and costs of the outlier class-wide judgment.²⁴

2. Litigation Expense

The question here is whether the parties will spend more in litigating the sampled claims than they would to resolve those claims in the benchmark process. On the realistic assumption that with more at stake in litigation, more will be spent to achieve a favorable outcome, it is likely that the parties will

²³ In re Rhone-Poulenc Rorer Inc., 51 F.3d 1293, 1299; see also AT&T Mobility LLC v. Concepcion, 131 S. Ct. 1740, 1752 (2011). It is important to note that Posner's account is incomplete. He leaves out the existence of similar pressure from the single class-wide trial on risk-averse plaintiffs and class counsel, who lack liability insurance and other risk-spreading options available to defendants. It is likely the single class-wide trial will thus pressure both sides to run for the cover of settlement with the more risk-averse paying a net premium to avoid the gamble.

²⁴ For elaboration of this argument and the use of random sampling to avoid the risk-bearing cost of class-wide trial, see Bruce Hay & David Rosenberg, "Sweetheart" and "Blackmail" Settlements in Class Actions: Reality and Remedy, 75 NOTRE DAME L. REV. 1377, 1378 nn.4-6 (2000) (pointing out that, contrary to the one-sided depiction by courts and commentators of the "blackmail" settlement problem, the prospect of having aggregate liability and damages being determined by a single class-wide trial may induce risk-averse plaintiffs as well as the defendant to pay a "premium" in accepting unfavorable terms for the certainty of settlement).

incur greater cost to resolve a randomly sampled claim than they would to resolve the same claim in the benchmark process. The expected judgment value of the sampled claims will be magnified by the inverse of their fraction of all claims. For example, if the sample consists of 10 claims out of 1000, the amount at stake in each claim is 100 times as much as it would be if each claim were resolved on an individual basis in the benchmark process.

However, not all of this extra expense on litigation of sampled claims will result in social cost. Notably, the extra expense for resolving sampled claims that share similar factual or legal elements, but which would not be resolved by class or consolidated actions in the benchmark process, will result in social benefit, not cost. The parties' incentive to increase spending on common questions of law and fact, mimicking the centralized investment in class and other collectivized actions, is socially productive because it eliminates the pro-defendant bias in the benchmark process. Class action de-biases the adjudication of common question claims, in short, by correcting the stakedriven asymmetry in investment incentives between the common defendant and each individual plaintiff proceeding alone or in any group smaller than the class of all claims as a whole. By vesting the plaintiff class with the same centralized control over the class-wide stakes and investment as the defendant naturally possesses and exploits in the litigation of common question claims, class action enables class counsel to make the best case for liability and maximize the aggregate expected recovery, thereby enhancing the quality of the information that the court will have to resolve the common questions and render judgments that will increase the social deterrence (and, in the rare case that it may be useful, compensation) value of mass injury litigation.²⁵

Although the parties will have an incentive to invest more than in the benchmark process to litigate the sample of dissimilar claims or the noncommon elements of similar claims, how much more is hard to gauge. There are a number of constraining factors, including the power of courts to control the discovery and admission of cumulative testimony and the diminished marginal payoff from the search and use of additional evidence under the preponderant evidence rule governing the burden of proof in civil cases.²⁶ The parties also can control their expenditures by agreement, essentially by settling claims presenting the greatest complexity, potential cost, and variability of outcomes. Moreover, expenditures are unlikely to rise proportionally to the amount at

²⁵ For further discussion of the key and unique de-biasing function of class action, see *infra* Section III.A.

²⁶ Rosenberg, supra note 5.

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stake on the general principle that the most promising legal investments are made first, so that the marginal return to further investment declines.²⁷

Ultimately, of course, this comparative assessment turns on the welfare effects rather than the absolute amount of any extra litigation expense involved. Notably, in this regard the greater the number of claims in the set and sample, the greater is the ratio of social benefit to cost from litigating the sampled dissimilar claims. Thus as the sample size increases relative to the set size, the incentive to spend more than in benchmark process to litigate the sampled claims diminishes. When there are 1000 claims in the set and the parties choose to sample 50 rather than 10 claims, the multiplier drops from 100 to 20. Also, as the total number of claims in the set increases, the necessary percentage of sampled claims decreases, as will the percentage of any extra expenditures attributable to litigating the sampled claims. Suppose that a sample of fifty claims would reasonably minimize deviation of the aggregate outcome result from aggregate mean value, and the extra expenditure per claim in the sample is \$100, for a total of \$5000. When there are 1000 claims, the sample size constitutes 5% of the total, and the extra cost per claim is \$5; if there are 10,000 claims, the sample percentage drops to 0.5% of the total and the extra cost per claim falls to \$0.50.

3. Settlement Versus Trial

Theory and commonsense explain why parties frequently settle. Settlement means that parties avoid further litigation expense. Settlement also eliminates the risk of trial, something the parties would not like to bear if they are risk-averse. These benefits can be substantial and hence it is not surprising that settlement characterizes the resolution of a super-majority of claims in the benchmark process, perhaps well over ninety percent (counting settlement prior to filing of claims) of cases, including class actions, that are not ousted by courts pre-trial on summary judgment or other dispositive motion.²⁸

²⁷ For an empirical study showing that legal expenditures rise less than in proportion to the amount awarded or obtained in settlement, see JAMES S. KAKALIK ET AL., VARIATION IN ASBESTOS LITIGATION COMPENSATION AND EXPENSES 88 (1984).

²⁸ See LEONIDAS RALPH MECHAM, JUDICIAL BUSINESS OF THE UNITED STATES COURTS: 2001 ANNUAL REPORT OF THE DIRECTOR 154 (2001); NAT'L CTR. FOR STATE COURTS, EXAMINING THE WORK OF STATE COURTS, 1999-2000: A NATIONAL PERSPECTIVE FROM THE COURT STATISTICS PROJECT 29 (Brian J. Ostrom et al. eds., 2001); Samuel Issacharoff & Richard A. Nagareda, Class Settlements Under Attack, 156 U. PA. L. REV. 1649, 1649 (2008). Even if the parties go to trial in only a small percentage of the millions of civil claims filed each year, the resulting litigation costs will remain high in the aggregate and hence sampling will still provide benefits in substantially reducing parties' expenditures and related distortion

Although the key drivers of settlement — trial risk and cost — operate differently in the two systems, it is unlikely that use of random sampling will significantly change the benchmark probability of resolving claims without resorting to trial. In the individualized process trial risk and cost align to motivate settlement; with roughly symmetrical risk and cost as well as information the parties will probably settle around the mean of the total net expected value they will derive from litigating the claim to trial and judgment.²⁹ Under random sampling, by contrast, settlement drivers tend to move in opposite, offsetting directions. The lower aggregate trial costs from random sampling — essentially trial of a small number of sample claims automatically resolves all claims in the set — will tend to lower the parties' incentives to settle sampled claims relative to the benchmark level. In other words, random sampling makes trial more economically attractive because the cost of trying a given sampled claim typically represents a small fraction (typically a tiny fraction compared to the benchmark process) of the total value the parties expect to derive from rejecting settlement and pressing on to judgment.

Nevertheless, because using sampling to resolve and assess damages across a large number of non-common question (non-classable) claims increases trial risk relative to the benchmark process, it is unlikely that sampling's reduction in trial will substantially dampen the prevailing litigation forces that compel the parties to settle the vast majority of triable claims. It is crucial to keep in mind that we are comparing the settlement rate of the *claims selected for sampling* to the counterfactual settlement rate for the same claims in the benchmark process. Even if all sampled claims are tried rather than settled, the number and expense of such trials will typically represent only a small fraction of the trial costs that would otherwise occur in the benchmark process. However, beyond the normal reasons for settlement of the sampled claims, there is the added pressure from the multiplier effect,³⁰ which attaches greater expense and risk to the trial of such claims. It is therefore quite likely that the multi-claim

30 See supra Subsection II.B.2.

of deterrence effects from the plaintiff (or defendant) settling under duress of such expense for too little (or too much) relative to the expected value of their case at trial, or simply forfeiting meritorious claims (or defenses) altogether. Moreover, sampling will reduce the costs of reaching settlement, which are inferred from the high rate of settlement to comprise the great bulk of the civil liability system's huge overhead expense. *See* A. Mitchell Polinisky & Steven Shavell, *Costly Litigation and Optimal Damages* 10-11 (Harv. John M. Olin Discussion Paper Series, Discussion Paper No. 739, 2012), *available at* http://www.law.harvard.edu/programs/olin_center/papers/pdf/Shavell_739.pdf.

²⁹ See Steven Shavell, Foundations of Economic Analysis of Law 401-03 (2004).

litigation will be settled in bulk prior to the drawing of sample claims. As discussed above,³¹ risk-averse parties will use a mixed strategy of sampling multiple claims and settlement to reduce risk-bearing costs. Settlement indeed becomes necessary at the point of negative marginal expected benefit from opting to sample an additional claim to reduce the risk-bearing cost related to fear of incurring big loss of wealth from an outlier trial outcome, but may also be useful to provide a further hedge against the possibility of drawing a significantly skewed sample.

The settlement effects of sampling in the class action context deserve brief separate mention. By replacing a single class-wide trial with (the prospect of) multiple trials, sampling also might raise trial costs directly, thereby possibly increasing settlement incentives. However, the effect on settlement is likely to be small because conducting multiple trials, if any, will not entail great additional expense as they will be largely carbon copies of one another. In cases where class action would not have been certified but for sampling, the rate of settlement is likely to increase significantly more than it would were the classed claims resolved individually in the benchmark process. As noted above,³² the parties' greatly increased incentives to invest on the common questions will raise their overall litigation costs and hence they will be more highly motivated to settle rather than bear further expense in proceeding to trial.³³

4. Gaming

It is difficult to predict all of the opportunistic games that an actual or potential litigant might concoct to take advantage of an adversary or the public. It might be thought that the most likely games would be played by the plaintiff-side, since it will have control over what claims will comprise the pool from which the randomly selected sample would be drawn. The concern in particular might be that the plaintiffs could stack the deck either by trying to fill the

³¹ See supra Subsection II.B.1.

³² See supra Subsection II.B.2.

³³ Use of sampling in cases certified (or likely to be certified) as class actions will not substantially change the prevailing settlement rate. Sampling eliminates risk of gambling an aggregate judgment of liability and damages in a single class-wide trial, and thereby lowers the "in terrorem" settlement pressures on plaintiffs as well as the defendant. However, it is doubtful that sampling will result in substantially higher trial costs. In most cases, where "in terrorem" risk induces parties to settle frivolous claims or defenses, eliminating that source of settlement pressure will generally result not in trials, but rather in snuffing out the abusive strategy. In cases involving triable claims, sampling will largely shift the amount rather than change the rate of settlement. *See* Hay & Rosenberg, *supra* note 24, at 1406.

pool with as many claims as possible, which will probably include many with little or no merit and chance of success at trial, or, conversely, by limiting the pool to claims with relatively high merit and chance of success at trial. The concern is that such strategies could excessively magnify the defendant's potential aggregate liability and damages, the first by increasing the numerical multiplier, the second by increasing the average strength of sampled claims. However random sampling is not realistically susceptible to either game, as the strategies offer plaintiffs no expected net payoff, and the latter in any event poses no socially problematic consequences.

Stacking the deck with lots of claims having little or no merit would increase the multiplier effect, but any expected net payoff from that strategy is fully negated by the diminution in the expected value of the average outcome from sampling. Thus, suppose random sampling is applied to a pool that could be comprised of two claims, each with a value of \$100, or that could be expanded to include a third claim worth \$0. The two-claim pool doubles the outcome of the randomly selected claim, yielding for plaintiffs an expected average outcome of \$200 (1/2 x \$200 + 1/2 x \$200). Although the expanded pool trebles the outcome, the greater probability of a low-value outcome negates the marginally greater multiplier, thus yielding the identical expected average outcome as the two-claim pool, \$200 (1/3 x \$300 + 1/3 x \$300 + 1/3 x \$0). It follows that the incentive of the plaintiff-side is not only to refrain from this sort of gaming, but also to affirmatively screen claims to cull the weak and meritless ones from the pool.

Stacking the deck with high-quality claims and placing lower-quality claims in another pool for separate sampling might well maximize the net expected recovery from sampling. Yet this strategy should not be regarded as a problematic "game" because it disadvantages neither the defendant nor the public. Specifically, selective pooling does not expose the defendant to excessive aggregate expected liability and damages and thus does not distort incentives for taking precautions. In reality, the defendant would probably settle the high-quality claims before sampling, just as quickly and fully as it would were it to face these claims in the benchmark process.

III. Collectivized Adjudication

In this Part, I briefly sketch the principal components of the system for collectivized adjudication that would greatly enhance the social value of using civil liability for deterrence and law enforcement purposes, and that is generally facilitated and indeed, to a large extent, made practically possible by simple random sampling.³⁴

A. Mandatory Collective Adjudication

It should be apparent that the cost saving (and for negative expected value claims, deterrence) advantages of random sampling of dissimilar claims operates most efficiently when the average outcome derived from the optimally risk-neutralizing sample resolves the largest set of claims.³⁵ Obviously, maximizing benefit from such random sampling requires that no positive-expected value claim should be permitted to proceed outside the collective process. But, although rarely mentioned, the case for mandatory collectivization is even stronger for resolving similar claims by random sampling. Cost-savings will surely accrue from its use. Given the limited availability of class and consolidated actions in the benchmark process, random sampling of similar claims will avoid substantial costs from needless duplicative effort as well as litigation of a great number of claims (above and beyond the subgroup of claims selected for sampling to reduce the risk-bearing costs). But the general case for random sampling of similar claims is more than just cost-savings; it is crucial to maximizing the deterrence value of civil liability.

Essentially, random sampling facilitates the general use of collective adjudication to eliminate the pro-defendant structural bias that plagues the resolution of similar claims on an individualized basis in the benchmark process.³⁶ This bias arises because the stakes of the defendant and each plaintiff starkly differ, as do their corresponding incentives to invest in making their cases on common questions. A common defendant always has the greater stake (indeed, a class-wide stake) and consequently the greater incentive (usually by many orders of magnitude) to spend than the plaintiff. In contrast

³⁴ In this Part, I draw upon and extend arguments developed in my prior writings. See Reinker & Rosenberg, supra note 5; Rosenberg, supra note 5; Rosenberg & Spier, supra note 1; David Rosenberg & James P. Sullivan, Coordinating Private Class Action and Public Agency Enforcement of Antitrust Law, 2 J. COMP. L. & ECON. 159 (2006).

³⁵ I emphasize that the random sampling does not require trial of the sampled claims. Settlement of some or all of them suffices. Nor is it necessary for the parties to actually resolve any selected claim or even select any claim for sampling. Risk-bearing cost can be eliminated from negotiations for aggregate settlement simply by offering the parties the option of randomly sampling some number of claims.

³⁶ This argument is informally developed in Rosenberg, *supra* note 5; and formally demonstrated with important extensions in Rosenberg & Spier, *supra* note 1.

to the plaintiff's stake and related investment incentive, which are defined and limited by the expected recovery on his or her particular claim, the defendant litigates from an aggregate-class-wide perspective. Even though its liability will be determined claim-by-claim, the defendant invests to develop the common question defense that minimizes its class-wide exposure to the costs of liability and litigation in the aggregate, not for any particular claim. On the realistic assumption that the amount spent on lawyers, experts, discovery, and other litigation needs correlates with their quality and hence with the odds of winning at trial, the defendant's resulting superior litigation power will skew outcomes in its favor class-wide, across all claims.

Exploiting such class-wide scale efficiencies to optimally invest on a classwide basis against an adversary limited to investing based on a fractional, typically minute stake, the defendant can deploy a common question defense in any given individual case that will likely overwhelm the plaintiff's case. Knowing that the defendant will spend more and win more often, potential plaintiffs may never bring claims. Thus, for example, a defendant facing 100 similar claims each for \$1000 would, all else equal, rationally spend up to \$100,000 in developing its best case on the common questions to deploy against the plaintiff. In response, each plaintiff would rationally spend up to the \$1000 at stake in the particular case. Spending 100 times more than each plaintiff in an individual arbitration likely will allow the common defendant to wield a decisive upper hand at trial, which in many cases will preclude plaintiffs from filing claims in the first place.

This pro-defendant bias is endemic to the process of resolving similar claims on an individual basis. Its existence is not a function of the defendant's wealth, the business or governmental activity involved, or the size, type, or complexity of the litigation — though any combination of these factors may compound or mitigate the problem. Indeed the defendant's investment advantage in individual cases pervades the entire spectrum of common question litigations, including consumer, franchise, and other contractual disputes; personal-injury claims for noneconomic damages; and controversies implicating important public policies, such as those presented in constitutional, civil rights, employment discrimination, copyright, securities, and antitrust cases. However, as indicated above, the number of independently prosecuted individual claims is a highly significant variable; the more plaintiffs that must proceed independently in separate actions, the more the process becomes biased against them. The bias decreases as the number of plaintiffs proceeding alone falls and vanishes when plaintiffs proceed as one by collective action. It follows that allowing opt-out of the system will reinstate the bias and undermine the deterrence value of civil liability.

B. Distribution of Aggregate Recovery to Social Security

In the collective adjudication system aimed at enhancing individuals' wellbeing, any aggregate recovery (net of attorney fees and costs) would be paid over to commercial insurers or national social insurance programs such as Social Security. In effect, the whole of all potential civil liability claims for damages would be assigned by law to insurers ex ante. Under this regime of "unlimited insurance subrogation," the insurer would obtain a controlling interest in the entire potential claim, and in the event the claim accrues, only the insurer could sue and, if successful, recover damages. The insured would receive compensation in the amount of the standard insurance benefits that his or her private or government insurer normally pays for the given type and extent of loss. In other words, the insured receives the same insurance compensation regardless of whether the risk and resulting harm are subject to civil liability sanctions. Paying over the civil liability proceeds from sampling directly to subrogated insurers or a national social insurance program thereby converts aggregate civil liability recoveries, which otherwise undermine the optimal insurance objective, into socially meaningful, more valuable first-party coverage. Conversion is accomplished as the insurers will, in the normal course or by virtue of regulatory mandate, reduce individuals' premiums and taxes commensurate with the expected revenue stream of net collective recoveries.³⁷

Although civil liability is primarily justified as a source of needed compensation, this rationale has absolutely no reality today (if it ever did).³⁸

The "distributive" advantages to this form of "ex ante compensation" are 37 worth noting. Compared to the promise of receiving "ex post compensation" for injury resulting from risk-taking subject to civil liability sanction, ex ante compensation redress the bearing of sanctionable risk, paying the expected value of such injury to individuals before and regardless of whether they suffer any such injury. Payment of the expected value in cash puts money in the pockets of individuals to use as they choose. Paving over aggregate damages into social security effectively compensates everyone in society for the average risk of being injured by conduct that would be sanctionable under the system of collective adjudication. In the beginning, there will be a mismatch between the provision of ex ante compensation for average risk and the actual distribution of risk among the actual population. However, over time, as people are born into the system, the population will become more and more akin to that comprised by individuals "behind a veil of ignorance," who have roughly equal chance of suffering injury from sanctionable risk-taking.

³⁸ Of course, there are a number of rational uses for civil liability damages, such as paying legal costs, rewarding plaintiffs for prosecuting claims with deterrence value, or inhibiting resort to retaliatory violence, but insurance-type compensation is generally not one of them.

Commercial and social insurance is widely available for all types of insurable risk to person and property. More fundamentally, coercing everyone to pay "civil liability premiums" in higher product prices and lower wages to secure accident loss compensation is in all respects the antithesis of what is meant by optimal first-party insurance.³⁹ Compared to first-party commercial and public insurance (including "emergency room" services), civil liability is far too costly, dilatory, and risky to provide meaningful insurance. The statistics are dismal: it costs more than a dollar for lawyers, experts and other litigation-related necessities to transfer one dollar to a plaintiff; claims take many years to resolve; and, what is surely most troubling for anyone in need of insurance, there is a substantial risk of recovering nothing or only a small fraction of the loss from trial or settlement.⁴⁰

Notably, the prospective plaintiff pays a "premium" for such civil liability coverage for nonpecuniary harm that no one wants to pay for, as is evident from the complete lack of such coverage by any commerical or public insurance program anywhere in the world, and on top of that, that expense is inflated by the prospective defendant's defense as well as liability insurance costs.⁴¹ No seriously injured person in his or her right mind would or does

³⁹ See Shavell, Economic Analysis of Accident Law, supra note 5, at 193-96.

⁴⁰ See Thomas H. Cohen & KRISTEN A. HUGES, BUREAU OF JUSTICE STATISTICS, MEDICAL MALPRACTICE INSURANCE CLAIMS IN SEVEN STATES, 2000-2004 (2007), available at http://www.bjs.gov/content/pub/pdf/mmicss04.pdf; LYNN LANGTON & Thomas H. Cohen, CIVIL BENCH AND JURY TRIALS IN STATE COURTS, 2005, at 8 (rev. Apr. 9, 2009), available at http://www.ojp.usdoj.gov/bjs/pub/pdf/cbjtsc05. pdf; TILLINGHAST-TOWERS PERRIN, U.S. TORT COSTS: 2002 UPDATE: TRENDS AND FINDINGS ON THE COSTS OF THE U.S. TORT SYSTEM 17 (2002).

⁴¹ For elaboration of this argument from optimal insurance theory, see SHAVELL, ECONOMIC ANALYSIS OF ACCIDENT LAW, supra note 5, at 186-99; and David Rosenberg, Deregulating Insurance Subrogation: Towards an Ex Ante Market in Tort Claims (Harv. L. Sch., Pub. L. Research Paper No. 43, 2002), available at http://ssrn.com/abstract=350940. Moreover, in the case of those with belowaverage incomes, charging them the average premium in product prices or forgone wages to cover those with above-average incomes subjects the less well-off to a distributively regressive tax. Rosenberg, supra note 5, at 918. And, to the extent there is a potential deterrent benefit, it is likely to be lost or outweighed by litigation cost because of the divergence between the parties' "private" wealthmaximizing and "public" welfare-maximizing motives for suit in cases where litigation costs exceed the plaintiff-side's expected recovery or, more generally, where total transaction costs for the parties, insurers, and taxpayers exceed the deterrent value of litigation. See generally Shavell, Fundamental Divergence, supra note 5 (discussing the disconnection between the incentives and costs of litigation for private parties and society).

rely on recovery from civil liability to pay for ongoing medical and other economic needs. (That no first-party insurance excludes coverage for tort risks proves the point.) They would be dead or too far gone to save if they had taken the chance of delayed judgments and discounted settlements. And, even assuming (unrealistically) that civil liability with non-pecuniary harm damages systematically paid more than first-party insurance for a given type of accident loss, say from a broken arm, it would be socially irresponsible from the perspective of insurance theory and practice to view such damages as a form of supplemental insurance coverage. The provision of more or less coverage for the same harm depending on whether it arises from a legally sanctionable risk or not violates the first principles of the optimal insurance that coverage of accident risk should be based solely on the severity of the resulting loss without regard to its source or cause (except when needed to address problems of moral hazard by reducing or conditioning the provision of benefits). No one needing to insure such a risk would, given risk-aversion, knowingly and rationally buy coverage that varied payouts significantly according to a factor bearing no relevance to the severity of loss: whether or not the risk that gives rise to the loss was legally sanctionable. In short, civil liability "insurance" is a fraud.42

My proposal for unlimited insurance subrogation is likely to be met with skepticism that the plaintiff, who will receive no payoff from the litigation, may be less cooperative in the prosecution of the claim than he or she would in the benchmark process. There are many reasons to expect full cooperation, including that there is no evidence of plaintiffs withholding cooperation in the prosecution of property loss claims where the entire recovery is economic and hence retained in full by the insurer. Yet a case might possibly arise in which a plaintiff whose testimony could substantially affect the expected judgment is able to hold out and condition cooperation on receiving a share of the recovery. The concern is that however the first-party insurer responds to the plaintiff's demand in such a case, it will confront and be forced to accept a settlement offer by the liability insurer that is discounted, with adverse deterrence consequenses, to reflect either the plaintiff's noncooperation or, if

⁴² To the extent that they are not simply misinformed, most commentators deliberately ignore this elemental critique of civil liability compensation from the basic and applied theory as well as empirics of insurance practice. *See, e.g., John C.P.* Goldberg & Benjamin C. Zipursky, *The Easy Case for Products Liability: A Response to Professors Polinsky and Shavell,* 123 HARV. L. REV. 1919, 1935-40 (2010) (exhibiting a mix of both failings as well as the cardinal error of evaluating the cost-effectiveness of a source of insurance from the *ex post* rather than *ex ante* perspective).

the claim is handled as it would be in the benchmark process, the first-party insurer's fractional rather than optimal litigation investment.

If rejecting or agreeing to the plaintiff's demand were the only alternatives open to the first-party insurer, cases of noncooperative plaintiffs thus could undermine the beneficial restructuring effected by unlimited insurance subrogation. But because the plaintiff has assigned the entire claim to the first-party insurer, the insurer has another option, one that maximizes its profits by inducing the liability insurer to make an undiscounted settlement offer. Essentially, the first-party insurer can counter a discounted settlement offer with the threat (1) to reassign a portion of the claim and related expected recovery to the plaintiff, thereby securing cooperation, and (2) to make the optimal investment that would maximize total expected recovery, just as it would otherwise under unlimited subrogation. This threat is credible because the first-party insurer and plaintiff can split the maximized total expected recovery in a way that makes them both better off than they would be under either alternative, accepting a discounted settlement or re-assigning the whole claim to the plaintiff. Anticipating exposure to the maximum total expected recovery if the case were to go to trial, the liability insurer will then rationally offer to settle the case without any uncooperative-plaintiff or claim reassignment discount. Therefore, in the vast majority of cases that are otherwise destined to settle, unlimited subrogation promotes optimal deterrence exactly as it would were the plaintiff cooperating fully.

C. Coordination of Complementary Private and Public Law Enforcers

My proposal for collectivized, deterrence-prioritized adjudication based on random sampling, like any civil liability system, must be designed and operated to complement and not impede let alone counteract the efforts of public and other private modes of enforcing the law aimed at preventing and redressing harm from socially inappropriate risk-taking.⁴³

⁴³ To be sure, some would deny that the rules of civil liability are or should be made and applied to optimally promote the goals of public law enforcement. Those who take this position regard it as implied by a so-called "private law" conceptualization of torts (and other arbitrary conceptualizations of common law subject matter) as the instantiation or medium for effectuating "corrective justice" (and such recent knockoffs as "civil recourse"). Typically these exercises in scholasticism are based on nothing more than assertions of some nebulous and unexamined moralistic postulate gleaned from superficial and selective parsing of ambiguous texts, purple prose, and foggy-headed judicial reasoning in first-year casebook-anointed classics such as *Palsgraf v. Long Is. R.R. Co.*, 162 N.E. 99 (N.Y. 1928). *See, e.g.*, John C.P. Goldberg, *Introduction: Pragmatism and*

The "complementarity problem" is the most important obstacle to designing a socially responsible system of privately (funded and controlled) law enforcement by means of civil liability. Limiting discussion to coordination of privately enforced civil liability and public enforcement of administrative regulations, the puzzle is finding a way to enable public enforcers to check excessive (or deficient) private enforcement without sacrificing the prospect of privately enforced collective actions serving to effectively check and supplement deficient public enforcement efforts. The best solution would be a mechanism that coordinates the contributions of both sets of enforcers to produce the optimal joint level of law enforcement.

Like others who have considered this design problem,⁴⁴ I presume that public enforcers are better informed than courts or other neutrals for purposes of making coordination decisions. I also presume that private enforcers, being motivated to recover as much as they can from collective actions, lack the appropriate incentive to conform their enforcement contribution to the socially appropriate level. Beyond that, however, I adopt a markedly different coordination approach. Unlike others, my approach does not vest public enforcers with preemptive control over private enforcers, but rather employs a double-sided, market appraisal mechanism to set politically transparent prices on the competing allocations of private and public enforcement effort available in particular cases.

This mechanism would operate in three phases. In the first, the public enforcement agency possesses all public and private powers of law enforcement ("total law enforcement license"). For a preset period, the public enforcer would proceed to enforce the public component of the total law enforcement license, exercising normal agency discretion in determining the warrant for investigating and prosecuting criminal and civil charges of regulatory violations involving particular targets. During this phase, the public enforcer holds the private enforcement license provisionally, solely in a custodial capacity. It has

Private Law, 125 HARV. L. REV. 1640 (2012) (Symposium on *The New Private Law*); Benjamin C. Zipursky, *Palsgraf, Punitive Damages, and Preemption*, 125 HARV. L. REV. 1757 (2012). Denying that torts have a deterrence objective is like commanding the tide to halt; torts will inevitably have deterrence effects. To shape torts from a deontological viewpoint that disregards the resulting deterrence consequences and related increase in the risk of death, disability, and destitution, is socially irresponsible, indeed, pathological.

⁴⁴ See, e.g., RICHARD A. POSNER, ANTITRUST LAW 274-75 (2d ed. 2001); Jil E. Fisch, Class Action Reform, Qui Tam, and the Role of the Plaintiff, 60 LAW & CONTEMP. PROBS. 167 (1997); David Freeman Engstrom, Agencies as Litigation Gatekeepers, 123 YALE L.J. 616 (2013).

no authority to preempt in any degree the exercise of the private license to institute a collective action against the targets of the public enforcement action.

The second phase commences at the close of the period for exclusive public enforcement action. Regardless of the outcome of that action, the public enforcer is required to put the private enforcement license up for auction and transfer to the highest bidder. In the event there are no bids, the private license reverts to the public enforcer, which can litigate, abandon, or otherwise resolve the collective action claim at its prosecutorial discretion. If the auction attracts bidders, then the winner acquires complete "ownership" control over the prosecution of and recovery from the collective action, which includes litigating, settling, abandoning, or otherwise seeking to resolve it in the normal course.

The third phase involves the public enforcer buyback option. Having auctioned the private license to the winning bidder, the public enforcer must immediately either assign the license to the private enforcer or buy it back at the winning bid price. Once the public enforcer has exercised the buyback option, it is free to litigate, settle or otherwise resolve the collective civil liability claim at its prosecutorial discretion. Whether the winning bid price is paid by winning bidder or the public enforcer, the proceeds will be deposited with the court and then immediately paid over to the subrogated insurers or Social Security. The main virtue of the buyback option is that it enables public enforcers to avoid deficient or excessive private enforcement of the collective action, while payment of the winning bid price renders this exercise of prosecutorial discretion financially determinative and publicly transparent, facilitating political monitoring and discipline.

IV. CONCLUSION: RESPONSES TO POSSIBLE CRITIQUES

Sections A and B indicate appropriate limitations on the use of sampling, while Sections C and D offer brief responses to some of the comments on the paper from conference participants. Participants generously offered many comments, all of which were thought-provoking and deserving of further attention; however, in the limited space available, I shall confine my remarks to the most salient.

A. Sampling Part of a Claim

The proposed use of random sampling is not a monolithic process. It is always subject to judicial oversight and the parties' agreements. Thus, as noted above, the proposal accommodates the division of claims into different pools to reduce litigation risk and cost. Similarly, it accommodates designating differently sized samples for different questions. Notably, in class actions, the parties may designate one sample size for determining the average outcome of all or some subset of common questions, and another sample size for determining the average outcome on damages. For example, in a class action involving 20,000 claims the parties might designate sampling of the common questions in 10 randomly selected claims to determine the plaintiffs' probability of success at trial, and designate random selection of 30 other claims to determine the aggregate sanctionable loss. Suppose the former sample yields a 50% probability of success (5 judgments for plaintiffs versus 5 judgments for defendant) or the parties settle on a 50% probability, while the latter yields average damages of \$10,000. On this basis, the defendant's aggregate liability and damages would be \$100,000,000 (50% (\$10,000 x 20,000)).

Relatedly, random sampling can be used in conjunction with other statistical methods. Complementary use with other methods will indeed be necessary in some types of cases. The proposed method samples claims as they would otherwise be developed in the benchmark process. Thus, the proposed method cannot resolve a claim on its own if liability and damages turn on a question the answer to which requires use of another statistical method, such as stratification to determine the counterfactual competitive market price in an antitrust price-fixing case.

As always, the parties and courts will choose between the proposed and other sampling methods based on their relative functional cost-effectiveness. Thus other more particularizing statistical methods may be preferable in the very rare case where civil liability damages provide useful insurance benefits, such as to redress employment discrimination losses for which there exists no cost-effective alternative public or commercial supply of coverage. In contrast to the proposed simple sampling method, statistical assessments based on refined groupings of representative claims can do double duty, determining aggregate liability and damages and at the same time establishing the categories and criteria for effectuating direct distribution of the aggregate recovery to plaintiffs.⁴⁵

⁴⁵ See, e.g., Hilao v. Marcos, 103 F.3d 767 (9th Cir. 1996). Wal-Mart Stores, Inc. v. Dukes, 131 S. Ct. 2541 (2011) rejected use of sampling to determine back-pay awards for class members in a large-scale employment discrimination case. The opinion rather high-handedly and indiscriminately dismissed what it called "Trial by Formula" as a "novel project," in part because it prevented the defendant from asserting statutory defenses to individual claims. In context, the decision makes sense, though critical thinking on the question is not apparent in either the majority or dissenting opinion. Employment discrimination cases involving alleged promotion decisions may be one of the rare types of litigation in which damages have some insurance value. Public insurance could provide coverage,

B. Types of Claims Not Subject to Sampling

The random sampling proposal would not apply perforce to cases involving in-kind remedies such as actions brought for injunctions or divorce and similar family disputes. Imposing the average outcome in these cases would necessarily distort incentives as well as result in ill-fitting remedies in every case, especially when the best form of relief is not proportional but rather all-or-nothing. Support awards in divorce cases provide a useful form of civil liability insurance, and as noted above, the proposal would not be effective to serve this purpose.

Would the proposal cover contract cases involving damage claims? The short answer is "it depends" on the nature of the contract. The proposal would apply with full force and effect to claims arising from business-consumer contracts, the terms of which are typically adhesive, standardized, and onesidedly specified by the business party. It is unlikely that such "contracts" reasonably allocate between the parties the expected costs and benefits of the given transaction. On the other hand, it can be assumed that commercial contracts reasonably allocate the transaction's prospects and do not involve externalized social costs, aside from the expense borne by the public to resolve them. Consequently, it should be left to the parties' pre-dispute agreement whether to have the case adjudicated in court (as opposed to being resolved in arbitration, by liquidated damages, or otherwise), and if so whether it would be included in a set of claims for random sampling or decided on an individualized basis. To address the effects of the public subsidy for courts, an election to submit the claim for judicial resolution would entail the parties paying a user-fee.46

but would, like coverage from civil liability, enforce statutory defenses to address the moral hazard problem of paying damages on false positive claims. Avoidance of the moral hazard problem also explains why defendant employers, even after determination of aggregate liability and damages by sampling, retain an interest in enforcing the defenses to sort employees who earned promotion from those who by slacking or otherwise were properly denied advancement.

⁴⁶ See Bruce L. Hay, Christopher Rendall-Jackson & David Rosenberg, Litigating BP's Contribution Claims in Publicly Subsidized Courts: Should Contracting Parties Pay Their Own Way?, 64 VAND. L. REV. 1919 (2011) (noting that eliminating the public subsidy for using courts would lead commercial parties to optimally choose between judicial and arbitral resolution of their contract disputes).

C. The Effect of Sampling on Judicial Lawmaking

The concern was expressed that random sampling would reduce the number or slant the nature of cases that provide courts with the opportunity to make law, either by reaffirming or by departing from existing approaches and rules. First of all, this concern has no bearing on the litigation of common question claims. Because all of the claims present similar questions, sampling would provide courts with undiminished lawmaking opportunities. The concern is thus only relevant to non-common claims or non-common aspects of common claims. It is true that under my proposal relatively few such claims would be selected from the set for litigation. However, it is far from obvious that this number would be proportionately lower than would be chosen for litigation (as opposed to being dropped, resolved before suit, or settled early on in the process) in the benchmark process. The proportion might well be higher. If lower by a significant and material degree, my proposal would offset the deficit by motivating more intense litigation of the sampled claims and affording courts with more time to consider the questions presented for lawmaking than they presently do in the benchmark process.

To the extent that the need arises to increase lawmaking opportunities, the system can be restructured to give parties who have an interest, for example as repeat players in the cases or underlying transactions, to present a non-sampled case for judicial review. Although damages would have been awarded according to the sample average, the legal and factual questions could be decided by declaratory judgment. In the absence of interestedparty sponsorship of the litigation, courts could establish a "certiorari" type system for reviewing claims that present useful opportunities to make law. To motivate filing and effective prosecution of such litigation, courts would pay the attorney fees and expenses incurred in cases accepted for review. As the benefit of lawmaking is a public good (and indeed because it is) the public should bear the cost of maximizing the social benefit.

D. Alon Klement's Comment on Sampling's Effect on Litigation Cost

Klement incisively demonstrates how random sampling lowers average trial cost and thus may reduce settlement incentives relative to the benchmark level. However, his conclusion that because of this effect on settlement incentives "litigation costs will not necessarily be as low as Rosenberg's proposal implies" requires clarifying empirical and analytical qualification. In short, the higher trial rate Klement predicts is unlikely to materialize, but in the event trial costs do rise, the consequence will be socially positive, not negative. Enhancing the economic feasibility of trial — though not necessarily

the rate of actual trials — will increase the net deterrence benefit from random sampling relative to the benchmark process.

As a practical matter, it is doubtful that random sampling will significantly raise trial costs.⁴⁷ Despite diminished settlement incentives, parties anticipating non-negligible costs for trial of a sample claim will usually have sufficient motivation to settle. Moreover, Klement fails to account for the offsetting force of trial risk; as noted above, the lower average trial cost that reduces settlement incentives results from the same increase in claim-set size that simultaneously intensifies the countering, settlement driver of trial risk.

However, the criterion for evaluating social welfare effects of litigation cost is not whether it goes up or down in absolute terms; rather, the question is whether the change in amount raises or lowers net benefit relative to the posited benchmark (or design alternative). As Klement appears to recognize,

47 Klement problematically bases his prediction on the parties' incentives and the defendant's preferences for settlement. Once adjusted for the reality that neither of these motivators directly determines the occurrence or rate of settlement, the presumed gap between the higher settlement rate in the individualized process and a comparatively lower settlement rate under random sampling shrinks nearly to the vanishing point. Obviously, trial is not the inevitable consequence of diminished motivations to settle; the amount paid by the defendant to the plaintiff will change, but settlement is still the probable outcome when trial costs are non-negligible and exceed bargaining costs.

Klement's comment provides an illustrative example. In the example, random sampling cut total benchmark trial costs by 90% from \$800 for individualized trial of 10 claims to \$80 (\$40 for each side) for trial of one sample claim, yet Klement plausibly supposes that the parties' joint trial costs would nonetheless provide sufficient bargaining range and incentive for reaching an aggregate settlement. At the same time, Klement's example posits that the defendant's aggregate offer of \$60 to each of 10 plaintiffs - overpaying five \$50 claims and paying the net expected value of five \$100 claims — would achieve a global settlement in the benchmark process. However, there is no reason, and Klement suggests none, to explain why this would be so or even likely. Notably, he does not assume that the defendant is making - credibly - a take-it-or-leave-it "offer." More realistically, the plaintiffs holding \$100 claims would reject defendant's low-ball offer; with nothing to lose by going to trial — they will net \$60 by judgment or settlement - each would demand that the defendant increase its offer by some amount up to the \$40 it would otherwise spend at trial. To weed out low from high claims, the defendant might condition an offer of \$140 on the plaintiff agreeing to pay some multiple of that amount plus attorney fees and costs to the defendant in the event the claim turns out to be worth only \$50. This would give the defendant enough offsetting expected value to rationalize bringing suit randomly against some number of the plaintiffs.

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the increased probability of the sample claim going to trial under random sampling relative to the benchmark process better promotes the optimal deterrence function of civil liability by cost-effectively internalizing more of the social loss resulting from the defendant's sanctionable risk-taking.⁴⁸

⁴⁸ Again, as Klement's example illustrates, by lowering average trial cost, random sampling avoids the dysfunctional outcomes in the individual process where the defendant evades socially appropriate sanctions by compelling the five plaintiffs with \$100 claims to choose between accepting low-ball \$60 settlement offers (that will also distort the incentives of plaintiffs with \$50 claims by overpaying them) or going to trial and thereby potentially raising overall litigation cost by \$400. In the random sampling system the defendant's options are more socially salutary: avoid trial costs entirely by settling all claims for their aggregate expected judgment value — by assumption achieving optimal deterrence — or go to trial on the sample claim and pay the aggregate sanction (judgment multiplied by number of claims in the set), thereby achieving the same level of deterrence at slightly more litigation cost, \$80.