Not Treble Damages: Cartel Recoveries Are Mostly Less Than Single Damages

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ABSTRACT: *Antitrust law provides treble damages for victims of antitrust violations, but the vast majority of private cases settle. The average or median size of these settlements relative to the overcharges involved has, until now, been only the subject of anecdotes or speculation. To ascertain what we term "Recovery Ratios," we assembled a sample consisting of every completed private U.S. cartel case discovered from 1990 to mid-2014 for which we could find the necessary information. For each of these 71 cases we collected, we assembled neutral scholarly estimates of affected commerce and overcharges. We compared these to the damages secured in the private cases filed against these cartels. Our main findings are that the victims of only 14 of the 71 cartels (20%) recovered their initial damages (or more) in settlement. Only seven (10%) received more than double damages. The rest—the victims in 57 cases—received less than their initial damages. In four cases the victims received less than 1% of damages and in 12 they received less than 10%. Overall the median average settlement was 37% of single damages. The unweighted mean settlement (a figure that gives equal weights to the cartels that operated in large markets and to those that operated in small markets) was 66%. However, because plaintiffs tend to be rewarded relatively poorly in the largest cases, the weighted mean (a figure that weights settlements according to cartels' sales) was only 19%. The mean and median average Recovery Ratios are higher (81.2% and 52.4%, respectively) for the 36 cases that followed criminal convictions of U.S. antitrust law. The conclusion of this Essay briefly discusses some of the implications of these findings.*

I.   INTRODUCTION

In theory, victims of antitrust violations receive treble damages.[1] In practice, however, almost every successful antitrust damages action settles. Because final verdicts in antitrust cases are exceptional, it may be more accurate to describe the antitrust damages level not as "treble" damages, but as the average or median percentage of damages successful antitrust cases actually settle for.

Until now the actual average or median size of antitrust settlements has only been a matter of speculation. To bring empirical analysis to this issue, we assembled a sample of 71 cartels for which we could find the necessary information. We believe that the sample includes every completed private U.S. cartel case since 1990. For each cartel a neutral scholar calculated the firms' United States overcharges. We compared these results to the damages secured in the private cases filed in the United States against these cartels. We find that the victims of only 14 of the 71 cartels (20%) recovered their initial damages (or more) in settlement; of these, only seven (10%) received at least double damages. The rest—the victims in 57 cases—received less than their initial damages. Four received less than 1% of their damages and 12 received less than 10%. Overall, the median average settlement was 37% of single damages. Because the distribution of settlement percentages is so skewed, the weighted mean (a figure that weights settlements according to their sales) is much lower (19%) than the unweighted mean settlement of 66% (which gives equal weights to the cartels that operated in large markets and those that operated in small markets), because plaintiffs tend to be rewarded relatively poorly in the biggest cases.

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    1.   15 U.S.C. § 15(a) (2012). Successful victims also receive "the cost of suit, including a reasonable attorney's fee." *Id.*

Our analysis of the "Recovery Ratios" (i.e., size of antitrust settlements relative to damages) will proceed in the following parts. Part II briefly explains why almost every antitrust case settles. Part III analyzes whether these settlements are likely to be at the "right" levels. Part IV analyzes our sample of cartel settlements and the size of the damages recovered by plaintiffs in these cases. Part V shows that both the deterrence and the compensation goals of antitrust necessitate damages that significantly exceed the violations' actual damages. Finally, in Part VI, we present some conclusions and implications of our work. Throughout this Essay we will use cartels as an example, although we also will discuss how these results might apply to different types of antitrust violations.

II.   ALMOST EVERY SUCCESSFUL ANTITRUST DAMAGES ACTION SETTLES

Almost every successful antitrust damage action settles.[2] We expect this to happen.[3] We expect that most parties would settle for a sum that might be

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2.   "Settlement agreements invariably involve compromise and risk, and the decision to settle or not is a strategic one that is an ordinary part of the litigation process." 1 PHILIP E. AREEDA & HERBERT HOVENKAMP, ANTITRUST LAW: AN ANALYSIS OF ANTITRUST PRINCIPLES AND THEIR APPLICATION ¶ 205g, at 285 (3d ed. 2006). "As would be expected, a large percentage (70–88%) of antitrust cases are settled." E. THOMAS SULLIVAN, HERBERT HOVENKAMP, HOWARD A. SHELANSKI & CHRISTOPHER R. LESLIE, ANTITRUST LAW, POLICY, AND PROCEDURE: CASES, MATERIALS, PROBLEMS 137 (7th ed. 2014) (citing S. Salop & L. White, *Private Antitrust Litigation: An Introduction and Framework*, *in* PRIVATE ANTITRUST LITIGATION 10–11 (L. White ed., 1988)). This is true for many or most other areas of law as well. For example, "the overwhelming majority of all patent litigation settles." Aaron Edlin, Scott Hemphill, Herbert Hovenkamp & Carl Shapiro, *Activating* Actavis, 28 ANTITRUST 16, 23 n.51 (2013). For convenience, we will sometimes refer to the parties using such terms as "victims" and "violators" even though, unless there was a civil or criminal judgment in the same matter, a term like "alleged victims" or "alleged violators" would be more accurate.

3.   As Professor Leslie cogently observes:

Judges and litigants generally view settlement as a win-win outcome. Because plaintiffs face great difficulty in winning antitrust cases, settlement is attractive to class counsel, who want to ensure some recovery for both the class and themselves. Conversely, because damages awarded upon a plaintiff's victory in antitrust litigation are automatically trebled, the risk-averse defendant has a strong incentive to settle in order to eliminate the pricey worst-case scenario. Presiding judges, too, favor settlement and routinely attempt to convince and sometimes cajole litigants to settle their litigation rather than rely on juries to resolve the dispute. Courts often invoke the "'strong judicial policy in favor of settlements, particularly in the class action context.'"

Settlement purportedly carries several benefits. First, settlement brings certainty to an inherently uncertain process. All interested parties seek repose: defendants want to minimize their exposure, the class wants some compensation, and the class counsel want to ensure that they recover their costs and receive some remuneration for their efforts. A settlement guarantees that defendants will not face bankrupting liability and that the class members (and their counsel) will not end up with nothing. In addition to assuring some recovery for the class, settlements generally speed the delivery of payments, as class members do not have to wait for the years of pre-trial,

expressed as the discounted present value of the expected probabilities that various recovery amounts would constitute the final verdict if the case went to trial and survived appeal.[4] Of course, this would be true only if a number of conditions held, including rationality on the parts of both plaintiffs and defendants, adequate and symmetric information, risk neutrality, an equal view of the strength of the plaintiffs' case, and no compelling short-term need on the part of either party.[5] If these assumptions hold, and if the parties share an assessment of the likely underlying parameters, then—in light of the extreme cost, risk, and time involved in litigation—both parties have a strong incentive to settle.[6]

We know of no reliable data on the percentage of antitrust cases that settle or that go to final verdict, either for cartels or for other types of antitrust cases. We do know, however, that final verdicts in cartel cases are extremely rare. In an earlier study, we searched antitrust cases since 1890 for final verdicts in cartel damages actions that calculated an overcharge amount and

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> trial, and appeals processes to run their courses before receiving recompense from the defendant. Similarly, the class counsel—who, absent a settlement, would not get paid until years later—receive their fees and reimbursements for costs sooner with a settlement.
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>   Second, settlements conserve judicial resources. Class action litigation taxes the legal system, contributing to the backlog in American courts. Judges favor settlements as a docket-clearing mechanism. Judges are especially eager to remove complex class action suits from their dockets. Indeed, some judges have gone so far as to endorse "the familiar axiom that a bad settlement is almost always better than a good trial." Other judges view a trial as evidence that the attorneys have failed.

Christopher R. Leslie, *De Facto Detrebeling: The Rush to Settlement in Antitrust Class Action Litigation*, 50 ARIZ. L. REV. 1009, 1012–13 (2008) (citations omitted).

    4.   For example, if the parties both believed the case involved a 50% chance of a $1 million recovery, a 25% chance of a $4 million recovery and a 25% chance of no recovery, we would expect a settlement of, *ceteris paribus*, $1.5 million. Of course, other factors, such as the time-value of money, also would have to be examined.

    5.   The effects of both sides' legal fees also would have to be considered, as well as antitrust law's one-sided fee-shifting provision.

    6.   Professor Leslie observes that the test most frequently used by courts to determine the reasonableness of a settlement is the "*Grinnell* factor test," which considers:

> (1) the complexity, expense and likely duration of the litigation; (2) the reaction of the class to the settlement; (3) the stage of the proceedings and the amount of discovery completed; (4) the risks of establishing liability; (5) the risks of establishing damages; (6) the risks of maintaining the class action through the trial; (7) the ability of the defendants to withstand a greater judgment; (8) the range of reasonableness of the settlement fund in light of the best possible recovery; [and] (9) the range of reasonableness of the settlement fund to a possible recovery in light of all the attendant risks of litigation.

Leslie, *supra* note 3, at 1017 (alteration in original) (citation omitted) (internal quotation marks omitted).

were not overturned on appeal. We found only 25.[7] Our search surely missed cases, and final verdicts in other areas of antitrust might well be more common. But we safely can say that final verdicts in damages cases are unusual.[8]

Although we do not know what proportion of private cartel cases go to final verdict, we do know that virtually every filed U.S. criminal cartel case is followed by or accompanied by at least one private damages action.[9] Thus, although we do not know the percentage of filed damages actions litigated to a final verdict, an upper bound on this figure can be calculated very approximately[10] by dividing the number of final victories we found—25—by the number of criminal cartel cases filed during the same time period: 2569.[11] This crude approximation indicates that at most perhaps only 1% of filed

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7. *See* John M. Connor & Robert H. Lande, *How High Do Cartels Raise Prices? Implications for Optimal Cartel Fines*, 80 TUL. L. REV. 513, 551–59 (2005) (surveying final verdicts in cases against cartels).

8. This Essay's study of 71 cartels found verdicts only in e-books and in vitamin C imports from China. *See generally* United States v. Apple Inc., 952 F. Supp. 2d 638 (S.D.N.Y. 2013); *In re* Vitamin C Antitrust Litig., 279 F.R.D. 90 (E.D.N.Y. 2012).

9. *See* John M. Connor, *Private Recoveries in International Cartel Cases Worldwide: What Do the Data Show?* 11, 31 (Am. Antitrust Inst., Working Paper No. 12-03, 2012), *available at* http://www.antitrustinstitute.org/sites/default/files/WorkingPaperNo12-03.pdf. This study of 130 private settlements shows that for every international cartel that resulted in a criminal conviction, a private case was filed. Sometimes private cases are filed before the Department of Justice's ("DOJ") criminal case is filed, and it can be extremely difficult to determine which party first uncovered the alleged violation. For examples, see Robert H. Lande & Joshua P. Davis, *Benefits from Private Antitrust Enforcement: An Analysis of Forty Cases*, 42 U.S.F. L. REV. 879, 897–99 (2008). Indeed, "[i]n a typical year more than 90% of antitrust complaints filed in the United States are by private plaintiffs rather than the federal government." Herbert Hovenkamp, *Quantification of Harm in Private Antitrust Actions in the United States* 1 (Univ. of Iowa Legal Studies, Working Paper, 2011), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1758751.

10. Of course, many damages actions are filed in cartel cases where there was no criminal complaint, and often more than one private case is filed against a cartel, so this calculation is only an order of magnitude approximation. For examples, see Joshua P. Davis & Robert H. Lande, *Toward an Empirical and Theoretical Assessment of Private Antitrust Enforcement*, 36 SEATTLE U. L. REV. 1269, 1292 (2013); Lande & Davis, *supra* note 9, at 898.

11. Total calculated as followed: 694 criminal antitrust cases were brought by the DOJ between 1890 and 1969. *See* Richard A. Posner, *A Statistical Study of Antitrust Enforcement*, 13 J.L. & ECON. 365, 385 (1970). An additional 1875 criminal antitrust cases were brought by the DOJ between 1970 and 2004. *See* ANTIRUST DIV., U.S. DEP'T OF ANTITRUST, ANTIRUST DIVISION WORKLOAD STATISTICS FY 1970–1979, at 6, *available at* http://www.justice.gov/atr/public/215792.pdf (showing 236 cases brought between 1970 and 1979); ANTIRUST DIV., U.S. DEP'T OF ANTITRUST, ANTIRUST DIVISION WORKLOAD STATISTICS FY 1980–1989, at 6, *available at* http://www.justice.gov/atr/public/215423.pdf (showing 782 cases brought between 1980 and 1989); ANTIRUST DIV., U.S. DEP'T OF ANTITRUST, ANTIRUST DIVISION WORKLOAD STATISTICS FY 1990–1999, at 4, *available at* http://www.justice.gov/atr/public/246419.pdf (showing 634 cases brought between 1990 and 1999); ANTIRUST DIV., U.S. DEP'T OF ANTITRUST, ANTIRUST DIVISION WORKLOAD STATISTICS FY 2000–2009, at 5, *available at* http://www.justice.gov/atr/public/281484.pdf (showing 223 cases brought between 2000 and 2004). Adding together the statistics compiled by Richard Posner to the DOJ figures, the total number of criminal antitrust cases filed by the DOJ between 1890 and 2004 was 2569.

cartel damages cases have been litigated to a verdict that stands up on appeal. Because many private damages actions are filed even though no related criminal case is filed, and because often more than one damages case is filed against a cartel, this percentage is a high estimate.[12] Nevertheless, this indicates that, as a very rough approximation, perhaps 99% of filed damages actions were dismissed or settled.

By contrast, a lower bound on the percentage of cartel damages actions that settle can be computed by dividing the total number of final cartel verdicts by the total number of antitrust cases filed during the same (1890 to 2004) time period: approximately 40,000.[13] This second rough estimate suggests that, if every private case had been a damages action against a cartel, only perhaps .06% of the private cases would result in a final verdict. Interestingly, if cartel cases historically have constituted 16% of all private cases filed, our two approximations would be roughly equivalent. Regardless of the actual percentage, however, it is safe to conclude that final verdicts are a tiny percentage of the total damages actions filed against cartels. The overwhelming majority of damages actions settle or are dismissed.

Even if most of the meritorious damages cases settle, we naturally would not expect many to settle for even close to treble damages.[14] The next Part explores whether antitrust settlements are likely to be greater or less than the "right" amount, if they were based only on the merits and plaintiffs' probability of being awarded various sums.[15]

III. Are Settlements Likely to Be at the "Right" Level?

There is a long-held belief in the antitrust community—one that never was supported with systematic evidence—that "good" antitrust cases settled for single damages.[16] More recently there have been assertions that "[p]ayments well below single damages are now the norm."[17] Surely victims

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12.   *See* Davis & Lande, *supra* note 10, at 1280.

13.   Richard Posner estimated that the number of private antitrust cases filed from 1890 to 1969 was 7495. Posner, *supra* note 11, at 371. Between 1970 and 1974, approximately 6000 private antitrust cases were filed. William Kolasky, *Antitrust Litigation: What's Changed in Twenty-Five Years?*, 27 Antitrust 9, 9 (2012) (providing a chart of private antitrust filings, upon which we base our approximation). Between 1975 and 2004, 26,958 private antitrust cases were filed. *See* Admin. Office of the U.S. Courts, Sourcebook of Criminal Justice Statistics Online: Antitrust Cases Filed in U.S. District Courts, *available at* http://www.albany.edu/source book/pdf/t5412012.pdf. These three figures total 40,453.

14.   Indeed, in light of the factors mentioned in this Part, we would expect defendants to settle for actual treble damages only if they are mistaken about the actual amount of damages involved.

15.   This formulation is subject to many conditions and caveats. *See supra* note 5 and accompanying text.

16.   *See* Robert H. Lande, *Five Myths About Antitrust Damages*, 40 U.S.F. L. Rev. 651, 660 n.40 (2006).

17.   Leslie, *supra* note 3, at 1036. "In the usual antitrust case (particularly a class action), even though the antitrust laws provide for damages three times the amount of the illegal overcharge, the settlement amount is a fraction of the estimated actual overcharge." David Boies,

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sometimes recover less than they "should" based only on the merits and the other conditions noted earlier.[18] Surely on other occasions the victims receive more. It seems extraordinarily unlikely that every case would settle for just the "right" amount.

Assuming we knew how much particular cases "should" settle for, should we expect actual settlements to be generally too high, too low, or at the right level? It is important to keep in mind not only the parties' incentives but also the attorneys' and judges' incentives. This applies with particular force to the plaintiffs' attorneys in class actions, who exercise a great deal of control over litigation and settlement.

Some "characterize class actions in general, and antitrust class actions in particular, as 'extortionate settlements.'"[19] Some "speculate that[, especially] in class actions[,] the potential for great liability based on the outcome of a single trial can cause even innocent defendants to settle meritless claims [for large sums] rather than risk a catastrophic—and errant—adverse decision."[20]

Conversely, other "commentators claim that plaintiffs' class action lawyers have incentive to 'sell out' the classes they represent. They note that [plaintiffs'] lawyers generally do best on an hourly basis [if they settle] quickly, even [if they do so] at a steep discount from the expected value of a case."[21] They also surmise that lawyers shortchange the class by seeking hard cash for legal fees and "a less valuable form of compensation for the class, such as coupons."[22]

Note the strong tension between these views. The first perspective suggests that plaintiffs are likely to recover too much from defendants, and the second suggests that plaintiffs are likely to recover too little from defendants, especially in class actions. It is difficult to imagine both views

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COURTING JUSTICE 252 (2004); *id.* at 333 ("Although the antitrust laws provide for treble damages, most price-fixing class actions settle for some amount less than the actual overcharge.").

18.   Much of the analysis in this Part is based upon Joshua P. Davis & Robert H. Lande, *Defying Conventional Wisdom: The Case for Private Antitrust Enforcement*, 48 GA. L. REV. 1, 11–16, 33–38 (2013).

19.   *Id.* at 34.

20.   *Id.*

21.   *Id.*; *see also* John C. Coffee, Jr., *Class Wars: The Dilemma of the Mass Tort Class Action*, 95 COLUM. L. REV. 1343, 1354 (1995) ("Even in the absence of bad faith, suspect settlements result in large measure because of the defendants' ability to shop for favorable settlement terms, either by contacting multiple plaintiffs' attorneys or by inducing them to compete against each other. At its worst, this process can develop into a reverse auction, with the low bidder among the plaintiffs' attorneys winning the right to settle with the defendant."); Susan P. Koniak & George M. Cohen, *Under Cloak of Settlement*, 82 VA. L. REV. 1051, 1112 (1996) ("If the court uses the 'lodestar' method, which involves multiplying the number of hours worked by some hourly rate and then adjusting further based on a risk factor, then class counsel can collude with defendants and their lawyers by exaggerating or unnecessarily running up the class lawyer's hours.").

22.   Davis & Lande, *supra* note 18, at 35.

generally are correct.[23] How, then, can we know which of these points is likely to predominate in practice?

The relevant empirical evidence is exceedingly thin, although the 60 cases in the Davis/Lande study help somewhat. While we cannot know whether those cases settled for the "right" amount, plaintiffs recovered approximately $500 million per case on average.[24] Defendants are unlikely to settle for such large amounts unless there was a significant chance they ultimately would lose on the merits. These cases also suggest that at least some plaintiffs' attorneys do not sell out their class members entirely. Because the empirical evidence is quite thin, we now turn to an analysis of incentives and legal doctrine.

Professor Hovenkamp notes a key starting point in the analysis: "Most lawsuits settle when each party has some prospect of winning or losing. The settlement discounts these probabilities into a certain agreement immediately rather than an uncertain outcome later."[25] In addition, it is extremely unlikely for defendants to knowingly pay treble damages because, inter alia, defendants rarely, if ever, pay prejudgment interest in antitrust cases.[26] And given the long delay between a violation and resolution through trial or settlement, the recovery is reduced significantly by this factor. Further, defendants are rarely—if ever—held liable for various kinds of harms their antitrust violations cause, including umbrella effects of market power and allocative inefficiency effects of market power.[27] Of course, often a private

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23. It is possible for both views to be accurate. If the wrong plaintiffs recover—direct purchasers, for instance, when indirect purchasers are the real victims—then private antitrust enforcement could result in both excessive and insufficient compensation. We have, however, seen no evidence that this occurs systematically.

24. Davis & Lande, *supra* note 10, at 1273 (noting that plaintiffs in those 60 cases recovered between $33.8 billion and $35.8 billion).

25. Herbert Hovenkamp, *The Rule of Reason and the Scope of the Patent*, SAN DIEGO L. REV. (forthcoming 2015).

26. The antitrust remedy statute allows for prejudgment interest only in such unusual cases where, for example, the court finds that defendant delayed in bad faith. *See* 15 U.S.C. § 15(a)(1) (2012). Prejudgment interest is rarely awarded in an antitrust case. On September 11, 2014, the U.S. District Court for the District of New Jersey entered judgment for plaintiff and awarded prejudgment interest—possibly for the first time in an antitrust case. Judgment in a Civil Action, Avaya Inc. v. Telecom Labs, Inc., No. 1:06-cv-2490-JEI-KMW, 2014 WL 97335 (D.N.J. Sept. 11, 2014), *appeal docketed*, No. 14-04277 (3d Cir. Oct. 28, 2014). Avaya Inc. was ordered to pay $62,613,052.10 in damages, calculated as $60 million dollars in treble damages from a $20 million jury award, plus $2,613,052.10 in prejudgment interest. *Id.* Avaya Inc. appealed on Oct. 10, 2014. Notice of Appeal, *Avaya*, No. 1:06-cv-2490-JEI-KMW, 2014 WL 97335 (D.N.J. Oct. 10, 2014).

27. Market power produces allocative inefficiency—the deadweight loss welfare triangle. *See* EDWIN MANSFIELD, MICROECONOMICS: THEORY AND APPLICATIONS 277–92 (4th ed. 1982) (defining allocative inefficiency and showing how it is created by monopoly pricing). Allocative inefficiency often is significant empirically, but it apparently has never been awarded in an antitrust case. *See* David C. Hjelmfelt & Channing D. Strother, Jr., *Antitrust Damages for Consumer Welfare Loss*, 39 CLEV. ST. L. REV. 505, 505 (1991) ("The authors have been unable to locate any antitrust case which has permitted recovery of damages for this consumer welfare loss."). Second,

action will not make economic sense because the damages are too low and the costs of litigation are too high. Victims in these cases might settle for a fraction of their damages—or might not file at all.

Antitrust defendants likely have a significant advantage over plaintiffs in settlement negotiations for other reasons. Plaintiffs may suffer in the short term and defendants may benefit from delay, placing defendants at a significant advantage in the settlement negotiations. Antitrust defendants often are rich and powerful economic actors; they can exploit market power to the detriment of the victims, who usually are in a more vulnerable position. This disparity can affect the litigation and settlement process. Plaintiffs will often lack the resources to tolerate the expense and disruption that litigation entails, and be forced to settle for less than if they were able to wait for a final verdict.[28]

There is no doubt that many defendants in antitrust cases are risk-averse, especially when extremely large sums of money are involved. But the same is true for plaintiffs and their attorneys, especially since many plaintiff cases are class actions that are financed by the attorneys involved. Moreover, we might

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market power can produce "umbrella" effects—the name given to higher prices charged by non-violating members that were permitted or caused by the violation's supracompetitive prices. *See* 1 AREEDA & HOVENKAMP, *supra* note 2, ¶ 337.3, at 429–32 (Supp. 1992). This factor also is never, or virtually never, awarded. *Id.*

Moreover, there are several additional types of harms typically caused by antitrust violations. These include the uncompensated value of plaintiffs' time spent pursuing the case and the costs of the judicial system. In addition, firms with market power may have less incentive to innovate or to offer as wide an array of non-price variety or quality options. Alternatively, one could argue that cartel members will have more funds to use for socially desirable innovation. We know of no evidence, however, that these innovation effects are significant empirically. The price fixers' own legal costs, the disruption in their own efficiency as a result of sanctions litigation, and any harm to their corporate reputation, by contrast, are not "harms to others" from collusion, and therefore should not be included in the optimal deterrence analysis. For an extended discussion of these issues, see Robert H. Lande, *Are Antitrust "Treble" Damages Really Single Damages?*, 54 OHIO ST. L.J. 115, 151 (1993).

28.   Plaintiffs' counsel in antitrust cases generally proceed on a contingent basis, spending their time without immediate payment and incurring litigation costs on behalf of their clients. They receive no compensation or reimbursement if they lose. Plaintiffs' attorneys in effect provide an interest-free loan, albeit a voluntary one. As a result, plaintiff attorneys tend to obtain the best return on their time if they settle cases quickly, even for a relatively small amount. Defense attorneys, in contrast, are paid by the hour. Therefore, they fare best in protracted litigation. Defendants also may often be better situated to oversee their attorneys than the clients of plaintiffs' attorneys if the case is a class action.

Two assumptions tend to underlie the claim that antitrust defendants often settle cases for more than the merits make appropriate. First is the claim that defendants in class actions in general—and in antitrust class actions in particular—are unduly risk-averse and are willing to pay a premium to avoid the possibility of losing at trial. Second is the suggestion that antitrust defendants pay significantly higher litigation costs than antitrust plaintiffs, placing the defendants at a disadvantage in settlement negotiations. To the extent these assumptions are true, defendants in antitrust class actions should feel compelled to settle even meritless cases for substantial sums. *See* Davis & Lande, *supra* note 18, at 37–39 (describing the incentives for both sides to sue and settle in antitrust class action suits).

expect that the decisionmakers for the plaintiffs—often their attorneys—are even more risk-averse than defendants. We know of no reason why defendants would be more risk-averse than plaintiffs.[29] Moreover, defense counsel themselves may not be overly risk-averse. They have no direct stake in the outcome of trial and, given the extraordinarily high rate of settlement in class action cases, likely feel comfortable they can settle eventually if their pretrial efforts prove unsuccessful.[30]

The U.S. Supreme Court and lower courts in recent years have also made it easier for defendants to prevail when they move to dismiss, move for summary judgment, and when they oppose class certification.[31] These factors all tend to significantly lower the settlement amount.

One legal settlement principle seems worthy of special mention: the *Grinnell* doctrine.[32] As Professor Leslie has documented after the U.S. Court

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29.   Evidence that defendants regularly settle class actions for large sums simply to avoid the risk of an erroneous, catastrophic loss and also for the judicial assertions that class certification coerces defendants into settling is questionable. *See, e.g.*, Szabo v. Bridgeport Machs., Inc., 249 F.3d 672 (7th Cir. 2001); *In re* Rhone–Poulenc Rorer Inc., 51 F.3d 1293 (7th Cir. 1995). Moreover, there is an odd asymmetry in the judicial concern about vulnerable corporations— what about victims who are unable to pursue their legal rights against large corporations simply because their individual claims are not large enough to warrant litigation? None of this establishes that critics of private litigation and class actions are wrong and surely some of their anecdotes are correct. It does suggest, however, that their claims have not been proven on a systematic basis. *See* Davis & Lande, *supra* note 18, at 38–40.

30.   Moreover, while commentators sometimes suggest that litigation costs fall disproportionately on antitrust defendants, the evidence on this issue is at least mixed. These costs may well fall as heavily on antitrust plaintiffs. Shifting the focus from the incentives before the parties to those before the attorneys reveals a third reason to believe settlements in private antitrust actions are likely to be too small. As noted above, plaintiffs' attorneys generally receive a contingency fee as a percentage of the recovery. They also have to wait until a recovery to obtain any compensation for the time they have expended and the costs they have incurred. In addition, there is evidence that plaintiffs in large cases actually incur *higher* litigation costs than defendants. This may well be especially true in antitrust class actions, where plaintiffs must pay economic experts to gather data and analyze an industry that defendants know relatively well.

None of this analysis is meant to generally impugn the ethics or integrity of attorneys in antitrust cases. No doubt most attorneys abide by their ethical obligation to place their clients' interests above their own. We should not jump from predictions to conclusions. The incentive for defense attorneys paid by the hour is to drag out litigation and undertake unnecessary tasks, and no doubt these unethical practices sometimes occur. But we should develop evidence concerning how often this occurs before we attribute improper conduct to defense attorneys in general. And we should do the same regarding plaintiffs' attorneys who might sometime sell out their class. But to the extent we look at the incentives of attorneys, they reinforce the conclusion that recoveries in private antitrust cases are apt to be too small rather than too large. For citations, see Davis & Lande, *supra* note 18, at 37.

31.   *See generally* Joshua P. Davis & Eric L. Cramer, *Antitrust, Class Certification, and the Politics of Procedure*, 17 GEO. MASON L. REV. 969 (2010); Einer Elhauge, *Harvard, Not Chicago: Which Antitrust School Drives Recent U.S. Supreme Court Decisions?*, 3 COMPETITION POL'Y INT'L 59, 59 (2007) (surveying every antitrust case decided from 1998 to 2007, and concluding that "[t]he U.S. Supreme Court has now decided 14 antitrust cases in a row in favor of the defendant").

32.   City of Detroit v. Grinnell Corp., 495 F.2d 448 (2d Cir. 1974).

of Appeals for the Second Circuit's 1974 *Grinnell* opinion, "courts evaluating the reasonableness of a proposed class action settlement almost uniformly decline to consider the trebling of antitrust damages."[33] However, despite its longevity, "[t]he very origin of the rule to disregard trebling is founded on an apparent misreading of the law."[34] As Professor Leslie shows:

> Despite the fact that trebling is mandatory, federal courts generally refuse to consider the trebling of antitrust damages when evaluating proposed settlements in antitrust class action litigation . . . . The Second Circuit in its influential decision opined that it would be "improper" to consider the fact that any damages following trial would be trebled "when computing a base recovery figure which will be used to measure the adequacy of a settlement offer." . . .
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> Subsequent courts followed *Grinnell* en masse.[35]

Because almost every meritorious damages case settles, Professor Leslie concludes "that courts have already effectively detrebled antitrust damages."[36]

Perhaps for all these reasons, the courts rarely reject proposed antitrust settlements as being too low. When asked about the court rejecting the proposed $324 million settlement in the recent *High-Tech Employee* cartel case, Professor Daniel Crane thoughtfully responded: "I cannot recall a judge saying in a class-action case that the amount of settlement is too low and you need to go back and go for broke at trial[] . . . . This is very striking."[37]

Just because most successful cases settle for relatively low amounts does not mean that plaintiffs rarely recover significant damage amounts. Professor Connor's analysis of over 100 international cartels prosecuted between 1990 and 2008 found a total of $29 billion in announced private settlements in

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33.   Leslie, *supra* note 3, at 1020.

34.   *Id.* at 1025.

35.   *Id.* at 1018–19 (quoting *Grinnell*, 495 F.2d at 458).

36.   *Id.* at 1009.

37.   David Streitfeld, *Court Rejects Deal on Hiring in Silicon Valley*, N.Y. TIMES (Aug. 8, 2014), http://www.nytimes.com/2014/08/09/technology/settlement-rejected-in-silicon-valley-hiring-case.html (quoting Professor Daniel Crane) (internal quotation marks omitted).

> In April, lawyers for the 64,000 class members and the companies reached a tentative deal. But the judge said the money did not fall "within the range of reasonableness." After the plaintiffs' lawyers took their 25 percent cut, the settlement would have given about $4,000 to every member of the class. Judge Koh said that she believed the case was stronger than that, and that the plaintiffs' lawyers were taking the easy way out by settling . . . . While judges often fine-tune proposed class-action settlements, it is unusual for one to be entirely thrown out in favor of a trial.

Id.; see also Order Denying Plaintiff's Motion for Preliminary Approval Settlements with Adobe, Apple, Google, and Intel, *In re* High-Tech Employee Antitrust Litig., No. 11-CV-02509-LHK, 2014 WL 3917126 (N.D. Cal. Aug. 8, 2014).

U.S. cases.[38] The only other aggregate estimate of which we are aware is the Davis/Lande study of 60 large private cases that settled after 1990. Twenty-five actions filed against large cartels produced between $9.2 billion and $10.6 billion in cash payments, and all 60 cases together produced cash payments of $33.8 to $35.8 billion.[39]

Are these settlements for "high" or for "low" amounts? The key information that is missing, of course, is the percentage of the violators' overcharges that these cases settled for. Thanks to Professor Connor's cartel database we can now test these suppositions.

IV. ANALYSIS OF THE SETTLEMENTS: THE RECOVERY RATIO

The Private International Cartels ("PIC") database contains information on more than 1000 cartels discovered since 1990.[40] We searched it to find cartels for which (1) there was a completed U.S. damages suit; and (2) a disinterested evaluator calculated the cartel's U.S. overcharges. We did not include any overcharge estimates prepared by parties working on the cases, or their lawyers or economists, or any subsequent estimate that we knew to be published by interested parties.[41] Economists prepared most of the relevant 71 overcharge calculations as part of their scholarly research and published the calculations in peer-reviewed journals, book chapters, or posted working papers.[42]

We limited our sample to cartels for which we could identify the United States sales during the allegedly illegal periods.[43] We only included the damages secured in private cases filed in the United States. We included damages paid to both direct and indirect purchasers (but not criminal fines). We limited our sample to cartels that were originally discovered after January

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38.   John M. Connor, *Cartels & Antitrust Portrayed: Private International Cartels from 1990 to 2008*, at 51 (Am. Antitrust Inst., Working Paper No. 09-06, 2009), *available at* http://ssrn.com/abstract=1467310.

39.   These figures do not include the value of products, coupons, or discounts. Davis & Lande, *supra* note 10, at 1272.

40.   For this Essay, the August 30, 2014 version was employed. For a description of the PIC and a discussion of sources and methods, see generally John M. Connor, The Private International Cartels (PIC) Data Set: Guide and Summary Statistics, 1990–2013 (Aug. 9, 2014) (unpublished manuscript), *available at* http://ssrn.com/abstract=2478271.

41.   John M. Connor, *Cartel Overcharges*, *in* 26 THE LAW AND ECONOMICS OF CLASS ACTIONS 249, 285–87 (James Langenfeld ed., 2014). For a fuller discussion of the sources and a descriptive analysis of the overcharges data, see *id.* at 268–312, 316–21.

42.   For example, for the *Private Equity Buyout* cartel, we employed the undercharge estimate prepared from a complex econometric model published in a distinguished academic journal. *See* Micah S. Officer, Oguzhan Ozbas & Berk A. Sensoy, *Club Deals in Leveraged Buyouts*, 98 J. FIN. ECON. 214, 237–40 (2010).

43.   Obtaining affected commerce is often difficult, but is necessary because many published overcharge figures are given in percentage terms.

1990 and all defendants' settlements amounts were announced.[44] We used nominal dollars: we did not adjust for the fact that the overcharges occur years before payments in damages actions.

We combined multiple suits by different victims or classes of victims of the same cartel, including opt-out cases, into one "case." Indeed, even the definition of a "cartel" is open to dispute or judgment. For example, was the international Vitamins cartel one huge interconnected "super cartel," was it three large cartels that affected a differing array of vitamins and formed and waned over time (because there were three separate damages cases filed), or was it actually 16 separate cartels as the European Commission and economists would prefer to treat them? There is no easy way to resolve these issues and reasonable people could differ as to the answer.[45] Counting the 16 vitamins cartels as one observation or "case," we identified 71 cartel cases for which we could find the necessary information.

To summarize the results, we present data on the Recovery Ratio, the amount recovered by plaintiffs divided by the amount overcharged.[46] A Recovery Ratio of 1.0 (or 100%) would indicate full disgorgement of the cartel's illegal profits, a Ratio of 3.0 (300%) would signal treble damages recovered, and so forth.

A Recovery Ratio Example: Lysine

The global *Lysine* cartel operated in the United States from 1992 to 1995, generating affected sales of $495 million. A posted economic study concluded that overcharges were $80 million. Direct purchasers recovered $55 million and indirect purchasers recovered $27.5 million.[47]

The Recovery Ratio = ($55 + $27.5)/$80 = **1.03**

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44. It is not unusual for many years to elapse between the filing of the first case against a cartel and the resolution of the last case against them. The most recent settlement in our sample is *Private Equity Buyouts*, which was filed in December 2007. The first two defendants agreed to settle on June 11, 2014 and the last in August 2014. *See* Mike Spector, *Buyout Firms Settle Suit Alleging Collusion over Deals*, WALL ST. J. (Aug. 7, 2014, 6:58 PM), http://www.wsj.com/articles/blackstone-kkr-tpg-to-pay-combined-325-million-to-settle-club-deals-lawsuit-1407426128.

45. For an analysis of the issues in the Vitamins cartel, see generally John M. Connor, The Great Global Vitamins Conspiracies, 1985–1999 (May 15, 2008) (unpublished manuscript), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=885968. *See also In re* Vitamins Antitrust Litig., 320 F. Supp. 2d 1 (D.D.C. 2004).

46. The authors thank Professor Herbert Hovenkamp for suggesting this felicitous term.

47. John M. Connor, *Global Cartels Redux: The Lysine Antitrust Litigation (1996), in* THE ANTITRUST REVOLUTION: ECONOMICS, COMPETITION, AND POLICY 336, 348–57 (John E. Kwoka, Jr. & Lawrence J. White eds., 6th ed. 2013).

Our analysis of the 71 cartel cases shows that the victims of only 14 cartels enjoyed Recovery Ratios of 100% or higher, and only seven received more than 200%. The rest—the victims in 57 cases—failed to recover the amount the cartels initially overcharged them.

Overall, the average (i.e., the simple arithmetic mean average) Recovery Ratio is 66%.[48] However, when one plots the probability densities of the settlement/overcharges percentages, it is immediately apparent that these ratios look nothing like the usual bell-shaped curve of a "normal" distribution. In fact, the distribution is highly skewed, with the number of very small percentages much greater than the number of large percentages (see Appendix). Under such circumstances, the *median average* is a better representation of central tendency than is the mean average. And the median Recovery Ratio is considerably lower, 37%.[49]

We note that the 71 cartels vary greatly in size, both in terms of sales and dollar overcharges. The mean and median averages treat each cartel observation as though they are of equal size. A third representation of central tendency—and the one we prefer—is the *weighted average*. The weighted average Recovery Ratio (a figure that weights the settlement/overcharges percentages according to their dollar overcharges) is 19%.[50]

Private damages cases are believed to be on a surer footing if they are preceded by criminal convictions.[51] Plaintiffs in civil cases can introduce these convictions as prima facie evidence of collusion. Moreover, evidence gleaned from the earlier cases provides details about cartel conduct that helps build superior empirical models to estimate damages. Finally, the Department of Justice ("DOJ") may tend to prosecute cartels with the highest damages. Thus, followership advantages ought to confer higher Recovery Ratios *ceteris paribus*. To see whether followership explains the height of average Recovery Ratios, we divided the 71 cartel cases into three groups: (1) 36 suits that followed successful U.S. government convictions;[52] (2) six that followed findings of price-fixing violations by civil European Union ("EU") administrative antitrust authorities,[53] and (3) 29 non-follow-on damages suits.[54] As expected,

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48.   We have rounded off the figure in the text. The calculated figure was 65.98%.

49.   The calculated figure was 36.73%.

50.   The calculated figure was 19.45%.

51.   Connor, *supra* note 9, at 10–12.

52.   All but two cartels were convicted criminally by the U.S. DOJ. The two exceptions were *Buspirone* and *Anti-Anxiety Drugs*, which were the subjects of detailed investigations and condemnation by the Federal Trade Commission ("FTC"). *See In re* Lorazepam & Clorazepate Antitrust Litig., 205 F.R.D. 369 (D.D.C. 2002); *In re* Bristol-Myers Squibb Co., No. C-4076 (F.T.C. 2004).

53.   These suits followed European Commission decisions that fined the cartels for collusive conduct in the European Union ("EU"). Cartel participants typically sold the same products in the both the United States and the EU, and the European Commission decisions often suggested that the collusive conduct extended outside of the EU's economic space.

54.   It can be an extremely difficult and controversial matter to classify cases into one of these groups, and sometimes reasonable people can differ as to these classifications. Moreover,

the mean and median average Recovery Ratios are highest for the follow-on suits, where the cartels were previously convicted by the U.S. antitrust authorities (81.2% and 52.4%, respectively). The average Recovery Ratios are much lower for the non-follow-on suits (54.8% and 22.7%). Prior adverse EU decisions provided the least assistance by far: the mean and median Recovery Ratios are 26.8% and 8.7%.

The figures presented in this Part are subject to the caveats noted throughout this Essay, and the "true" figures could be different for many reasons.[55] For example, although we attempted to include every opt-out case, surely we missed some, especially smaller opt-out cases. Unless we had reason to disbelieve the parties' information, we accepted their statements about the settlements' value.[56] Similarly, some cases yielded products, coupons, or discounts that were too difficult for us to quantify easily, so we ignored their possible value. And, of course, some of these products or discounts had different values to the plaintiffs than to the defendants, and reasonable people could differ about which is the best measure of value. Similarly, some settlements had non-monetary value, such as injunctive relief. And, fundamentally, we relied upon the overcharge estimate of the neutral scholar who studied the case. The only exceptions were when a judge or jury made a finding that, for example, accepted the estimate of plaintiffs' expert. On the rare occasion that this happened, we allowed court decisions to trump economists' findings.

The highest Recovery Ratio (expressed in nominal dollars) in our sample was secured in the *EPDM* cartel case: 365%.[57] It is of course puzzling why a cartel would ever settle for treble damages, let alone for a higher sum. There are several possible explanations. First, the calculations shown in this Essay make no adjustments for the time value of money. Since the overcharges often

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sometimes the publicly available information does not permit one to determine whether private actions were follow-up cases to government actions.

55.   All three of the measures of central tendency just discussed are point estimates from a sample. Our sample of cartels is about half of the entire population of all international cartels discovered operating in the United States after January 1990. An important consideration in this Essay is to ask to what extent any of these averages is representative of the "true" or population average. The usual procedure is to construct a confidence interval. A *confidence band* or *confidence interval* is a pair of numbers within which a statistic calculated from a sample (e.g., the mean average) can be reasonably expected to occur for the entire population at some chosen level of confidence, such as 90% or 95%. Unfortunately, because the distribution of settlement percentages is abnormal, this method is unavailable. *See* JEFFREY M. WOOLDRIDGE, INTRODUCTORY ECONOMETRICS: A MODERN APPROACH 138, 825 (5th ed. 2012).

56.   We certainly are aware that parties sometimes have incentives to distort the value of their settlement. Plaintiffs' attorneys, for example, could have an incentive to exaggerate settlement values that include discounts, coupons, or products in the hope that this will cause a court to award them a higher fee.

57.   *See* John M. Connor, *Price-Fixing Overcharges: Revised 3rd Edition* 303 (Am. Antitrust Inst., 2014), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2400780; *see also In re* Ethylene Propylene Diene Monomer (EPDM) Antitrust Litig., 256 F.R.D. 82 (D. Conn. 2009).

arise many years before the payouts in the private cases, adjusting the payment using net present value to the year the settlement was made will result in a smaller payment number. Consequently, the final payment/overcharge ratio will be smaller. Both the settlement amount and the damages ought to be expressed in the dollars of the same year. To take the *EPDM* example, adjusting the 365% Recovery Ratio for the time value of money reduces the ratio to 165.5%—well below treble damages.[58] Adjusting all the other cartels' ratios would result in smaller ratios as well.

Second, the statutory maximum actually is treble damages, plus reasonable attorneys' fees, plus reasonable expert witness costs.[59] Perhaps the legal and expert witness fees, in addition to treble damages, could total 365% of the overcharges. Or, it is possible the parties involved in the case miscalculated the cartel's actual damages, or disagreed with the case evaluation overcharge results in the report we utilized in our calculations.[60]

Conversely, in four of the 71 cartel cases the Recovery Ratios were less than 1%, in 12 they were less than 10%, and another eight were between 10% and 20%. Although there are many reasons for such low settlements, some that might make us sympathetic to plaintiffs and others that might make us sympathetic to defendants, these results certainly are grounds for reflection.

It should be stressed that these results apply only to overcharges and sales made in the United States. Most of these cartels operated worldwide. Thus, for example, we calculated that the U.S. Recovery Ratio of the Vitamins "super cartel" is 246% (expressed in dollars not adjusted for inflation). Our calculations did not, however, consider the Vitamin cartel's overcharges or sales outside of the United States. If this cartel were evaluated on a worldwide basis, when all of its payments in private suits are added to the fines it paid worldwide, and this total is compared to the collusive overcharges it was able to enjoy worldwide during the period of the alleged conspiracy, overall the Vitamins cartel still made a profit.[61]

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58. To find the net present value of the settlement amount of the $74 million overcharge made on average in the year 2000, we made a conventional assumption in financial economics that the direct buyers (manufacturers of plastic products) would have earned a rate equal to the prime rate of interest plus one percentage point, compounded for nine years. This raises the overcharge to a net present value in the year 2000 to $129.1 million. To calculate the Recovery Ratio accurately, both the numerator and denominator must be expressed in dollars from the same year. For convenience, we chose 2010, the settlement year. Then we used the Consumer Price Index to inflate the overcharge in year 2000 dollars to year 2010 dollars; the latter is $163.3 million. The Recovery Ratio is $270.2/$163.3 = 165.5%.

59. *See* 15 U.S.C. § 15(a) (2012).

60. For example, the evaluation of the *EPDM* synthetic rubber cartel case calculated the cartel's United States overcharges at $74 million. Perhaps defendants feared that plaintiffs might be able to prove damages of $100 million or more. Perhaps these defendants were unusually risk-averse and were working off of imperfect information and so they (perhaps mistakenly) settled for what turned out to be a high level of damages.

61. *See* Connor, *supra* note 45, at 149–50.

One caveat is that the affected sales data were estimated by the first author.[62] Some of the sales figures are exceedingly precise and most are based on reliable base numbers, but some rely on the best available resources on market sales found in business libraries. As an example of a precise estimate, plaintiffs' counsel in the *Private Equity Buyouts* case provided the transaction values of the nine leveraged buyouts at issue in the case; these data are fully public figures.[63] The more reliable sales data began with the cartel's sales as revealed by government prosecutors for one or a few years; then total sales were estimated with a reasonable growth rate over the collusive years. However, the Private International Cartels ("PIC") data takes note of sales estimates that are judged to be less reliable.

Of the 71 observations, 30 were flagged as having less reliable sales estimates. For example, in *Refrigerant Compressors*, sales data was obtained for all such compressors, but the private suit limited sales to only compressors of one horsepower or less, and the latter was not available.[64] Thus, sales for this cartel may be overestimated, so a dollar overcharge figure will underestimate the settlement percentage. To investigate the extent of the bias created by unsure sales data, we recalculated the average Recovery Ratio for the remaining 42 cartels. The median average rises to 42%, the weighted mean

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62. Another problem we mention in passing is the difficulty of deciding on the appropriate sales concept in some cases. For example, in a few international cartels in recent years, participants have used energy or security surcharges to raise prices of air cargo or air passenger services. The conventional view is that the relevant price increase was in the total charge for air cargo shipments or airline tickets. However, one might take the view that it is the surcharge itself that was affected, not the charge as a whole. In fact, plaintiffs' attorneys when announcing settlements in the *International Air Transportation Surcharge* case boasted that their $200 million recovery was 33% of the fuel surcharge levied on passengers. Christine Caulfield, *BA, Virgin Settle Price-Fixing Class Action for $200M*, LAW360 (Feb. 15, 2008, 12:00 AM), http://www.law360.com/articles/47240/ba-virgin-settle-price-fixing-class-action-for-200m ("Each ticket purchaser can recover one-third of the fuel levy, [attorney Michael] Hausfeld said."); *see also In re* Int'l Air Transp. Surcharge Antitrust Litig., 577 Fed. App'x 711 (2014). However, when gauged against ticket sales, recovery was 6% to 13% (assuming the average ticket was priced between $500 and $800 for the 3 to 4 million buyers). *See id.*

63. *See* Third Amended Class Action Complaint at 39–62, Police & Fire Retirement Sys. v. Apollo Global Mgmt., No. 107-CV-12388, 2008 WL 5679238 (D. Mass. Aug. 26, 2008); Jonathan Stempel, *Goldman, Bain to Pay $121 Million in LBO Collusion Settlement*, REUTERS (Jun. 11, 2014, 7:43 PM), http://www.businessinsider.com/r-goldman-bain-to-pay-121-million-in-lbo-collusion-settlement-2014-11.

64. *In re* Refrigerant Compressors Antitrust Litig., 795 F. Supp. 2d 647, 651–52, 659 (E.D. Mich. 2011). The government prosecutions in the United States and Brazil make no mention of horsepower. *See, e.g.*, Third Consolidated Amended Complaint, *In re Refrigerant Compressors Antitrust Litig.*, 795 F. Supp. 2d 647 (No. 2:09-02042), 2012 WL 9494136; Plea Agreement at 2, United States v. Embraco N. Am., No. 2:10-CR-20577-PJD-RSW (E.D. Mich. Sept. 30, 2010), *available at* http://www.justice.gov/atr/cases/f263200/263223.pdf (defining the market as "household and light commercial compressors sold in the United States and elsewhere").

average rises to 31%, and the simple mean average falls to 62%.[65] Because the differences in averages between the two samples are small, the less reliable sales estimates did not significantly bias our results.[66]

Notwithstanding the fact that the *Vitamins* defendants were large and paid high overcharge amounts in the cases filed against them,[67] on average plaintiffs tend to be rewarded relatively poorly in the biggest cases.[68] For example, the cartels with the ten smallest U.S. sales have median overcharges of 81% of affected sales; examples of highly successful cases in the group are *PVC Window Coverings*,[69] *Nitrile Butadiene Rubber*,[70] and *Buspirone*.[71] By contrast, the ten largest cartels have median settlement of 11% of sales. Correlation analysis confirms the inverse relationship.[72]

V. ANTITRUST'S NEED FOR MULTIPLE DAMAGES

The antitrust statutes provide that violations give rise to automatic treble damages plus "reasonable attorney's fee[s]."[73] The legislative history[74] and case law[75] indicate that compensation is a goal, perhaps the dominant goal, of

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65.   This confirms our suspicions that either early sales estimates tend to be too broadly defined or that prosecutors often carve away some products or geographic areas when defining the cartelized market.

66.   That is, errors made on the high side were mostly compensated by errors on the low side.

67.   *See supra* note 45 and accompanying text.

68.   We are not aware that this finding has been hypothesized in the cartel literature.

69.   John M. Connor & Robert H. Lande, *Cartels as Rational Business Strategy: Crime Pays*, 34 CARDOZO L. REV. 427, 474 (2012).

70.   Commission Decision 38/628, *In re* Nitrile Butadiene Rubber, 2009 O.J. (C 86/7) (EC), *available at* http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.C_.2009.086.01. 0007.01.ENG.

71.   *In re* Buspirone Antitrust Litig., 211 F.R.D. 249 (S.D.N.Y. 2002).

72.   The Pearson correlation between sales and the settlement percentage is r = -0.095. The rank correlation is stronger, r = -0.278.

73.   15 U.S.C. § 15(a) (2012).

74.   In the legislative debates, Senator Richard Coke complained about a bill that would have provided only for double damages:

> How would a citizen who has been plundered in his family consumption of sugar by the sugar trust . . . recover his damages under that clause? It is simply an impossible remedy offered him. . . . [H]ow could the consumers of the articles produced by these trusts, the great mass of our people—the individuals—go about showing the damages they had suffered? How would they establish the damage which they had sustained so as to get a judgment under this bill? I do not believe they could do it.

21 CONG. REC. 2615 (1890) (statement of Sen. Richard Coke). Representative Edwin Webb stated that the damages provision "opens the door of justice to every man, whenever he may be injured by those who violate the antitrust laws, and gives the injured party ample damages for the wrong suffered." 51 CONG. REC. 9073 (1914) (statement of Rep. Edwin Webb). He also stated that "we are liberalizing the procedure in the courts in order to give the individual who is damaged the right to get his damages anywhere—anywhere you can catch the offender." *Id.* at 16,274.

75.   *See* John B. Kirkwood & Robert H. Lande, *The Fundamental Goal of Antitrust: Protecting Consumers, Not Increasing Efficiency*, 84 NOTRE DAME L. REV. 191, 211–36 (2008).

antitrust's damages remedy.[76] In addition, the statutes were primarily aimed at avoiding wealth transfers from purchasers to firms with market power caused by this market power—which is analogous to a compensation goal. The congressional decision to award treble damages certainly could lead one to conclude that two-thirds of antitrust damages were meant for some purpose other than compensation, such as deterrence. However, it is possible that even the "extra" damages were intended to compensate victims for such unawarded items as prejudgment interest, or damages that are difficult to measure, such as umbrella effects of market power or the victims' time spent pursuing a remedy.[77]

Indeed, when these factors are considered, antitrust's nominal "treble damages" probably are only approximately single damages.[78]

Although it is possible that compensation is the only goal of the antitrust damages remedy, "[v]irtually every analysis of antitrust damages issues assumes that . . . [at least a purpose, and perhaps] the entire purpose . . . is deterrence."[79] Many scholars believe that the primary purpose of the

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76.   "The language of [s]ection 4 of the Clayton Act permitting a private plaintiff to recover three times the damages 'by him sustained' suggests rather strongly that compensation of victims, rather than deterrence of violators, is the principal goal of private damage actions under the antitrust laws." SULLIVAN, HOVENKAMP, SHELANSKI & LESLIE, *supra* note 2, at 161.

77.   Lande, *supra* note 27, at 123. If compensation is the purpose for the damages remedy, then the damages should include every "relatively predictable" injury that reaches everyone except the defendants, including "the wealth transferred from consumers to the violator(s)"; "the allocative inefficiency effects felt by society," both direct and indirect; attorney's fees for the plaintiffs and compensation for plaintiffs' time spent litigating; and judicial costs. *Id.* at 124; *see also* Robert H. Lande, *Wealth Transfers as the Original and Primary Concern of Antitrust: The Efficiency Interpretation Challenged*, 34 HASTINGS L.J. 65, 94–95 (1982) [hereinafter Lande, *Wealth Transfers*] (citations omitted).

A summary of comments by legislators suggests congressional intent: "Congress was well aware . . . that higher prices transfer wealth from consumers to firms with market power." Robert H. Lande, *The Rise and (Coming) Fall of Efficiency as the Ruler of Antitrust*, 33 ANTITRUST BULL. 429, 499 (1988). The debates strongly suggest that Congress condemned trusts and monopolies for exactly this reason. In one example, Senator Sherman called overcharges by monopolies "extortion which makes the people poor," and "extorted wealth." Congressman Coke called them "robbery." Representative Heard said the trusts, "without rendering the slightest equivalent," have "stolen untold millions from the people." Congressman Wilson complained that a particular trust "robs the farmer on the one hand and the consumer on the other." Representative Fithian said the trusts were "impoverishing" the people through "robbery." Senator Hoar said a monopoly's prices were "a transaction the direct purpose of which is to extort from the community . . . wealth which ought to be generally diffused over the whole community." Senator George complained that monopolies "aggregate to themselves great enormous wealth by extortion which makes the people poor." Lande, *Wealth Transfers*, *supra*, at 94–95.

78.   Lande, *supra* note 27, at 119.

79.   *Id.* at 124; *see also* Connor & Lande, *supra* note 69, at 431–33. In the Sherman Act debates Representative Webb stated, "[u]nder the civil remedies any man throughout the United States, hundreds and thousands, can bring suit in the various jurisdictions, and thus the offender will begin to open his eyes because you are threatening to take money out of his pocket." 51 CONG. REC. 16,275 (1914) (statement of Rep. Edwin Webb). See discussion of these debates in Herbert Hovenkamp, *Antitrust's Protected Classes*, 88 MICH. L. REV. 1, 21–30 (1989).

underlying substantive provisions is to enhance economic efficiency,[80] which typically is the goal of optimal-deterrence approaches.[81]

The antitrust community usually uses the deterrence framework developed by Professor William Landes.[82] Landes showed that, to achieve optimal deterrence, the damages should be equal to the violation's expected "net harm to others"[83] divided by the probability of detection and proof of the violation.[84] As an example of how this approach would operate in practice, one should multiply the "net harm to others" by the inverse of the probability of detection and conviction.[85] Despite government efforts to eliminate cartels,

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80. Robert Bork analyzed the relevant legislative history and concluded that "[t]he whole task of antitrust can be summed up as the effort to improve allocative efficiency without impairing productive efficiency so greatly as to produce either no gain or a net loss in consumer welfare." ROBERT H. BORK, THE ANTITRUST PARADOX: A POLICY AT WAR WITH ITSELF 91 (1978). For additional citations and analysis, see Kirkwood & Lande, *supra* note 75, at 193–95.

81. *See* William M. Landes, *Optimal Sanctions for Antitrust Violations*, 50 U. CHI. L. REV. 652, 655 (1983) ("[D]eterrence alone is not the aim of penalties. The purpose of penalties . . . is to deter inefficient offenses, not efficient ones.").

82. *Id.* at 656. An alternative analysis of optimal anti-cartel policies has grown in the past ten years. *See, e.g.*, Paolo Buccirossi & Giancarlo Spagnolo, *Optimal Fines in the Era of Whistleblowers. Should Price Fixers Still Go to Prison?*, *in* 282 CONTRIBUTIONS TO ECONOMIC ANALYSIS: THE POLITICAL ECONOMY OF ANTITRUST 81, 82 (Vivek Ghosal & Johan Stennek eds., 2007) ("This paper discusses the issue in the light of two major recent innovations[,] . . . leniency programs and reward schemes for whistleblowers."). This perspective focuses on policies like corporate or individual leniency programs that will destabilize cartels that are already formed. *See id.* at 114–18. Thus, policy prescriptions arising from this body of scholarship are ex post, *see id.* at 114–15, and far from being contradictory, they are supplementary to the ex ante policies we examine in the present Essay.

83. Landes, *supra* note 81, at 656. The logic underlying the "net harm to others" optimal deterrence standard was explained clearly by Professors Breit & Elzinga:

> Assume that a potential cartelist calculates that joining a horizontal price-fixing conspiracy will increase his profits by $100 million. He also is aware that the deadweight loss imposed on society by his activity is $50 million. If the expected value of the fine imposed is the entire amount of consumers' surplus ($150 million) would he enter the cartel? He would do so if he believed that the cartel would be accompanied by cost reductions to him greater than $50 million. If the cost saving were, say, $60 million, he would still enter the price-fixing conspiracy because he would know that his fine would be $100 million (his cartel profits) plus $50 million (the deadweight loss) leaving him $10 million more revenue than would be the case if he did not enter the cartel. In this case the cartel is accompanied by cost reductions greater than the deadweight loss it imposes on society. On efficiency grounds, it should be permitted.

WILLIAM BREIT & KENNETH G. ELZINGA, ANTITRUST PENALTY REFORM: AN ECONOMIC ANALYSIS 12 (1986).

84. *See* Landes, *supra* note 81, at 656–57. This assumes risk neutrality and makes other common assumptions. *Id.* at 653–54. "Multiplication is essential to create optimal incentives for would-be violators when unlawful acts are not certain to be prosecuted successfully. Indeed, some multiplication is necessary even when most of the liability-creating acts are open and notorious. The defendants may be able to conceal facts that are essential to liability." Frank H. Easterbrook, *Detrebling Antitrust Damages*, 28 J.L. & ECON. 445, 454 (1985).

85. Connor & Lande, *supra* note 69, at 433.

evidence continues to show that many cartels are still in operation. For ideal deterrence, sanctions should be more than a cartel's "net harms to others" in order to account for this less than 100% probability that the government will find a cartel and that the cartel will be later convicted. If a cartel expected to overcharge by $100 but only had a 33% chance it would be discovered and then convicted, the sanctions should slightly exceed $300. Without multiplying a firm's "net harm to others" by the likelihood that the firm will actually pay for that harm, firms will not be deterred from violating antitrust law.[86]

For cartels, the relevant literature indicates there is a 20% to 25% probability that they will be detected and convicted.[87] Most analysts of both the Chicago and post-Chicago schools of antitrust accept these principles.[88]

From a compensation perspective, these damages should of course be awarded to the victims of the anticompetitive behavior. From a deterrence perspective, however, these damages could instead be awarded to the state as fines. The United States has of course chosen a mixed antitrust remedies system, one that awards nominally trebled damages (which, as noted earlier, do not account for all of the losses) to victims, and also imposes fines and other sanctions. As the authors have shown, however, the totality of the current remedies system is inadequate to achieve optimal deterrence, at least for cartels.[89]

The precise optimal multiplier certainly might well be different for different types of antitrust offenses. For example, cartels are hidden because price fixing is per se illegal, and in part for this reason a large multiplier is necessary. Moreover, there is general agreement that collusion is

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86.   *Id.* at 433–34. The continued high number of DOJ grand juries and the recent DOJ success rate in the courts also suggests that many cartels still exist. As of 2013 (the most recent year for which data was available), the DOJ had 62 pending grand jury investigations. ANTITRUST DIV., U.S. DEP'T OF ANTITRUST, ANTITRUST DIVISION WORKLOAD STATISTICS FY 2004–2013, at 4, *available at* http://www.justice.gov/atr/public/workload-statistics.pdf.

87.   Douglas H. Ginsburg & Joshua D. Wright, *Antitrust Sanctions*, 6 COMPETITION POL'Y INT'L 3, 7–8 (2010). Optimal deterrence should focus upon the actual expectations of members of the cartels being deterred, not upon what has happened to similar cartels. We would like to know, for example, how much they expect to raise prices and how often would-be cartelists take into account the possible legal consequences of their actions—expectations that are impossible to ascertain. What we can calculate is how much overall cartels have raised prices historically and how often and how much they have been sanctioned. We can use this information as proxies for the relevant expectations. Essentially, we are forced to use a general deterrence approach because a specific deterrence approach is not possible. Connor & Lande, *supra* note 69, at 434–35.

88.   See the discussion in Lande, *supra* note 27, at 161–68. Despite the general acknowledgement of the superiority of the Landes approach, many highly respected scholars instead focus upon the gain to the lawbreakers, perhaps because it is simpler to observe or calculate. For a recent example, see Gregory J. Werden, *Sanctioning Cartel Activity: Let the Punishment Fit the Crime*, 5 EUR. COMPETITION J. 19, 28–31 (2009). For an insightful analysis, see Wouter P.J. Wils, *Optimal Antitrust Fines: Theory and Practice*, 29 WORLD COMPETITION 183, 190–93 (2006).

89.   *See* Connor & Lande, *supra* note 69, at 476–79.

anticompetitive, and there is less fear that high cartel fines could deter procompetitive behavior that is close to the margin of legality. However, cartels can also be the subject of corporate fines as well as fines and prison for the executives involved, so the damages in private cases do not have to provide all the necessary deterrence.

By contrast, many other types of antitrust violations involve relatively public conduct, so detection can be relatively easy. Even in monopolization cases, however, many of the issues crucial to liability—did the defendant price above or below average variable cost? What is the relevant market? Does the defendant have monopoly power?—are difficult to ascertain. In fact, these issues often are more difficult for plaintiffs to prove than many of the most important questions at issue in the liability stage of most collusion cases, including the crucial issue of whether defendants fixed prices. It is much easier to show that a discovered cartel has violated the antitrust laws than a discovered monopoly, so an extremely high multiplier might be appropriate for these cases as well.

Thus, the optimal damages multipliers will be different for different types of offenses. Nevertheless, because even relatively public violations are difficult to prove, from a compensation or—especially—from a deterrence perspective, antitrust violations should give rise to a damages multiplier that is greater than one. As our calculations in Part IV have shown, however, few antitrust settlements achieve this goal.

VI. CONCLUSIONS

Victims of only 14 of the 71 cartels (20%) we studied had Recovery Ratios above 100%. Of these, only seven (10%) received at least double damages. The rest—the victims in 57 cases—received less than their initial damages, and 12 received less than 10% of their damages. Three averages may be calculated. First, the median Recovery Ratio is 37%. However, because the distribution of the Recovery Ratio is so skewed, the weighted mean (a figure that weights the settlements according to their overcharges) is much lower (19%) than the unweighted mean Ratio of 66% (which gives equal weights to the cartels that operated in large markets and those that operated in small markets). Plaintiffs are generally rewarded relatively poorly in the biggest cases.

Not surprisingly, damages actions that follow adverse legal enforcement by the DOJ or the Federal Trade Commission result in higher average Recovery Ratios than non-follow-on settlements. The variation in the ratios among cartels is large, but we do not fully understand the reasons for the disparities in recoveries. Future empirical studies might investigate whether the number and types of defendants,[90] the size of fines imposed, the presence

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90.   For example, we suspect that Recovery Ratios will be different for direct purchasers than for indirect purchasers.

of an immunized amnesty applicant,[91] the length of the civil proceedings, or other measurable factors can explain the variation in Recovery Ratios. Other determinants of variation in Recovery Ratios (e.g., changes in the stringency of class certification rules, sweetheart deals by plaintiffs' lawyers) may be more difficult to measure.

As Part III showed, antitrust damage awards should be significantly greater than the actual damages caused by violations. In an earlier article, one of the authors showed that even on those relatively unusual occasions where the parties do not settle and the victims do receive nominal treble damages, due to the absence of prejudgment interest and a number of other factors, they are likely to receive only an amount that is close to single damages.[92] This Essay in many ways takes that conclusion further by demonstrating that most cartel damages cases settle for significantly less than single damages. Several important policy implications follow from this.

First, judges should realize that antitrust settlements can be for almost any percentage of the damages caused by the underlying cartel. As noted in Part IV, several Recovery Ratios are less than 1%, and 12 are under 10%. By contrast, a small number of settlements were for more than actual or double damages. Of course, the "just," "reasonable," or "fair" percentage will vary according to the relative strength of the case, and will depend on many other factors.

Although this point might seem obvious, in court decisions the parties tend to discuss the settlement/sales ratio, which is an inappropriate measure of victim's welfare. Moreover, parties sometimes agree to settle for very low percentages of sales (e.g., less than 10%), and then represent to the court that it should accept their low proposed settlements *because these ratios are what actually occur* in private class action cases.[93]

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91.   *See* D. Daniel Sokol, *Cartels, Corporate Compliance, and What Practitioners Really Think About Enforcement*, 78 ANTITRUST L.J. 201, 208–11 (2012) (reporting on a survey of antitrust practitioners, who opined that the Antitrust Criminal Penalty Enhancement and Reform Act of 2004 had little effect on optimal deterrence).

92.   *See generally* Lande, *supra* note 27.

93.   There have been many cases where a party seeking judicial approval of a low settlement percentage has provided citations to similarly low settlements (or purportedly low settlement amounts) that received court approval. Although we are not aware of any party explicitly asserting that such figures were "average" or "median" amounts, the lengthy lists of low settlements—without counsel providing any relatively high examples—would tend to give judges the impression that these very low settlements are indeed average or median figures. *See, e.g.*, Direct Purchaser Plaintiffs' Memorandum in Support of Their Motion for Final Approval of Settlements at 13–14, *In re* Aftermarket Filters Antitrust Litig., No. 08-cv-4883 (N.D. Ill. Sept. 4, 2012) (noting that the proposed settlement would "amount to a total recovery for the Class of more than 10% of single damages" and citing cases approving settlement amounts of "5.35% of damages," "approximately 12.7% to 15.3%," and "12.2% [as well as a] study by Columbia University Law School, which determined that since 1995, class action settlements have typically recovered between 5.5% and 6.2% of the class members estimated losses" (internal quotation marks omitted)); Memorandum in Support of Plaintiffs' Motion for Final Approval of Settlements with

Of course, sometimes very low settlements are indeed appropriate. Nevertheless, courts should ignore the parties' assertions as to what typically, often, or usually happens in settlements. Most of these submissions are neither reliable[94] nor as relevant as the Recovery Ratio. We instead urge courts to evaluate each settlement on its merits. If necessary, courts should follow the lead of the wise and courageous judge in the *High-Tech Employee* cartel case[95] and reject a proposed settlement as being too low, even if it would have returned $324 million to the victims.

Second, judges should realize that awarded antitrust damages are usually much less than actual damages, so they should fight any conscious or unconscious tendency they might have to award defendants close factual or legal decisions out of a fear that the action will lead to true treble damages that will "over-punish" defendants and/or "over-reward" plaintiffs.[96] Because awarded damages are not as a practical matter even close to true treble

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Defendants Lan Airlines, S.A., Lan Cargo, S.A., Aerolinhas Brasileiras, S.A., British Airways PLC, South African Airways LTD., Malaysia Airlines, Saudi Arabian Airlines, LTD., Emirates, El Al Israel Airlines LTD., Air Canada, AC Cargo LP, and Salvatore Sanfilippo at 22, *In re* Air Cargo Shipping Servs. Antitrust Litig., No. 06-MD-1775 (JG) (VVP), 2012 WL 5989756 (E.D.N.Y. June 22, 2012), 2012 WL 3137845 (citing cases for support in which settlement "recovery represented approximately 2% of sales," "1.62% of sales," and "2.4% of sales"); Plaintiffs' Motion for Final Approval of Settlements with St. John Health, Oakwood Healthcare Inc., and Bon Secours Cottage Health Services at 9–11, Cason-Merenda v. Detroit Med. Ctr., No. 06-15601 (E.D. Mich. July 19, 2010), 2010 WL 3973333 (citing cases for support in which settlements represented between 0.1% and 1.6% of relevant sales). We should stress, however, that we are not commenting on the merits of any of these examples. And, as we have noted elsewhere, sometimes low settlement percentages are indeed appropriate. *See* Caulfield, *supra* note 62 ("In other antitrust cases, recovering 10% of the total price charged—you're doing well. Recovering 15% to 18%, you're doing very well. Recovering a third of the total price charged—is extraordinary . . . ." (quoting attorney Michael Hausfeld)).

94.   For example, we would be extremely interested to know how each of the estimates presented in note 93, *supra*, were calculated. Perhaps the expressed percentages are percentages of plaintiff's alleged damages? If so, we would like to know whether a neutral scholar ever re-examined these calculations to determine whether plaintiff's assertions were accurate.

95.   *See supra* note 37 and accompanying text.

96.   As Professor (and former FTC Chairman) William E. Kovacic observed,

a court might fear that the US statutory requirement that successful private plaintiffs receive treble damages runs a risk of over-deterrence. A court might seek to correct such perceived infirmities in the anti-trust system by recourse to means directly within its control—namely by modifying doctrine governing liability standards or by devising special doctrinal tests to evaluate the worthiness of private claims.

William E. Kovacic, *Private Participation in the Enforcement of Public Competition Laws, in* 2 CURRENT COMPETITION L. 167, 173–74 (Mads Andenas et al. eds., 2004); *see also* Stephen Calkins, *Summary Judgment, Motions to Dismiss, and Other Examples of Equilibrating Tendencies in the Antitrust System*, 74 GEO. L.J. 1065, 1140 (1986) ("One of the ways in which courts have adjusted to the treble damages remedy is by being relatively more willing to keep cases from going to trial.").

damages, judges should also refrain from being ungenerous to victims when they decide standing issues or compute the amounts of damages to award.[97]

Third, *Illinois Brick* repealers make more sense.[98] The specter of six-fold or higher damages for civil antitrust violations seems remote. If federal or state *Illinois Brick* repealers led to effective double damages for antitrust violations, this would almost certainly be more nearly optimal than the current situation. Moreover, *Illinois Brick* repealers are almost certainly the best way to compensate consumers who are indirect purchasers of supracompetitively priced items. Potentially overlapping state antitrust and tort laws are also more likely to be in the public interest, because their combined effects are likely only to increase awarded damages to the two-fold level, rather than the six-fold level.[99]

Fourth, the *Grinnell* doctrine, which measures the adequacy of antitrust settlements as compared to single damages, should be abolished. Professor Leslie's analysis of why this doctrine is unsound and should be overturned is compelling. His conclusions are made even stronger by this Essay's conclusion that few cases settle for even single damages. The *Grinnell* doctrine could, moreover, be a large part of the reason why antitrust settlements are so low.

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97. On antitrust and its administrability, see generally Rebecca Haw Allensworth, *The Influence of the Areeda–Hovenkamp Treatise in the Lower Courts and What It Means for Institutional Reform in Antitrust*, 100 IOWA L. REV. 1919 (2015); Roger D. Blair & Christine Piette Durrance, *Licensing Health Care Professionals, State Action and Antitrust Policy*, 100 IOWA L. REV. 1943 (2015); Roger D. Blair & D. Daniel Sokol, *Quality-Enhancing Merger Efficiencies*, 100 IOWA L. REV. 1969 (2015); Daniel A. Crane, *All I Really Need to Know About Antitrust I Learned in 1912*, 100 IOWA L. REV. 2025 (2015); Hillary Greene & D. Daniel Sokol, *Judicial Treatment of the Antitrust Treatise*, 100 IOWA L. REV. 2039 (2015); Keith N. Hylton, *Deterrence and Antitrust Punishment: Firms Versus Agents*, 100 IOWA L. REV. 2069 (2015); William E. Kovacic & Marc Winerman, *The Federal Trade Commission as an Independent Agency: Autonomy, Legitimacy, and Effectiveness*, 100 IOWA L. REV. 2085 (2015); Mark A. Lemley & Christopher R. Leslie, *Antitrust Arbitration and* Illinois Brick, 100 IOWA L. REV. 2115 (2015); Christopher R. Leslie, *The Commerce Requirement in Tying Law*, 100 IOWA L. REV. 2135 (2015); Alan J. Meese, *Antitrust Federalism and State Restraints of Interstate Commerce: An Essay for Professor Hovenkamp*, 100 IOWA L. REV. 2161 (2015); Barak Orbach, *The Durability of Formalism in Antitrust*, 100 IOWA L. REV. 2197 (2015); Spencer Weber Waller & Matthew Sag, *Promoting Innovation*, 100 IOWA L. REV. 2223 (2015).

98. For a definition and analysis of *Illinois Brick* repealer legislation, see Robert H. Lande, *New Options for State Indirect Purchaser Legislation: Protecting the Real Victims of Antitrust Violations*, 61 ALA. L. REV. 447, 451–60 (2010). *See generally* Ill. Brick Co. v. Illinois, 431 U.S. 720 (1977).

99. In addition, on occasions some have proposed that antitrust "treble damages" should be lowered, at least for certain types of violations. *See generally* Easterbrook, *supra* note 84. Because damages usually are less than single-fold, Congress should not pass legislation that would lower the damages awarded for rule of reason or for relatively public antitrust violations. Instead, a crucial question is whether "hardcore" violations are adequately deterred by criminal penalties. Elsewhere the authors have written that Congress should raise the damages levels for hardcore cartels. *See generally* Connor & Lande, *supra* note 69. Moreover, even relatively public rule of reason violations often are difficult to prove, so all antitrust violations should give rise to awards that really are in excess of actual damages. A relatively noncontroversial first step that almost certainly would lead to the imposition of more nearly optimal damages would be for Congress to pass a law awarding prejudgment interest for antitrust violations.

Fifth, the antitrust community should seriously explore the possibility that criminal antitrust fines should be raised. As the authors have shown elsewhere, overall cartels are not adequately deterred by the current combination of private and public remedies.[100] Higher criminal fines would help provide more nearly optimal deterrence in the cartel area although not, of course, for other areas of antitrust. This Essay has shown that the contribution of private cases to cartel deterrence, while certainly important and significant,[101] is not nearly as large as it would be if private cases usually did secure treble damages.

The primary purpose of this Essay has been to advance the discussion within the antitrust community about the true relative levels of antitrust damages, and to help correct the myth that antitrust violations do, or typically do, lead to treble damages. We analyzed damages in settlements against cartels simply because we had the necessary information. We urge other scholars to duplicate our analysis for other areas of antitrust law. We would be extremely surprised if there is any area of antitrust law for which settlements average more than single damages, but we would be delighted to be proven incorrect.[102]

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100. *See generally* Connor & Lande, *supra* note 69.

101. *See generally* Robert H. Lande & Joshua P. Davis, *Comparative Deterrence from Private Enforcement and Criminal Enforcement of the U.S. Antitrust Laws*, 2011 BYU L. REV. 315.

102. This Essay's analysis shows that antitrust violations probably on average give rise to less than single damages. An analysis of tort, contract, and other types of cases might well show these areas of law produce similar or even lower recoveries on average. Even if this is true, such a showing would not be a reason to fail to correct the antitrust damages multiplier. This Essay does not assert that the antitrust damages situation is unique, or even that it is more egregious than that involving other areas of the law. We urge scholars in other areas of law to undertake an analysis similar to the one performed in this Essay.

APPENDIX

Probability Density of 71 Recovery Ratios