1-1-1998

Punitive Awards After BMW, a New Capping System, and the Reported Opinion Bias

Theodore Eisenberg
Cornell Law School, ted-eisenberg@lawschool.cornell.edu

Martin T. Wells
Cornell University, mtw1@cornell.edu

PUNITIVE AWARDS AFTER *BMW*, A NEW CAPPING SYSTEM, AND THE REPORTED OPINION BIAS

THEODORE EISENBERG[*] & MARTIN T. WELLS[**]

*   Henry Allen Mark Professor of Law, Cornell Law School. We would like to thank Kevin Clermont and A. Mitchell Polinksy for comments on this Article.
**   Associate Professor, Department of Social Statistics, Cornell University.

I. INTRODUCTION

Capping punitive damages awards is a centerpiece of the tort reform movement. According to the American Tort Reform Association, as of June 30, 1996, forty-three states allowed punitive damages awards. Of these, twenty-nine states impose no caps on punitive damages and fourteen impose some form of cap. In states that cap punitive awards, the preferred method is to employ a simple multiple of the compensatory award. Eleven states rely on a multiple of the compensatory damages award. The most popular multiple is three times the compensatory award, but this is used by only five states. The capping multiples range from one to five.[1]

Two developments highlight the importance of rethinking punitive damages caps. First, the Supreme Court's decision in *BMW of North America, Inc. v. Gore*[2] shifts the range of argument in the punitive damages area. The Court relied on, inter alia, "a breathtaking 500 to 1"[3] punitive to compensatory damages ratio to invalidate an Alabama punitive damages award. Since *BMW*, several courts have relied on it to reduce punitive damages awards.[4]

Thus, the central question is no longer whether there will be review of punitive-compensatory ratios. Rather, the question is whether caps will be systematically defined by legislatures, or applied on an ad hoc basis by courts as a matter of federal constitutional law.[5] Plaintiffs' trial lawyers and consumer advocates must abandon the hope of avoiding *any* review of the relationship between compensatory and punitive awards. Absent a federal constitutional amendment, all punitive awards are now subject to ad hoc caps.

Second, systematic knowledge of the patterns of compensatory and punitive damages awards is now available.[6] The available data suggest that businesses, insurance companies, and defense lawyers cannot support the claim that punitive awards are frequent, or that they follow a crazy pattern with little or no relation to compensatory awards.[7] The strongest

---

1.   *See* AMERICAN TORT REFORM ASSOCIATION, 1986-1995 LEGISLATIVE REFORM OF PUNITIVE DAMAGES (As of June 30, 1996).

2.   116 S. Ct. 1589 (1996).

3.   *Id.* at 1603.

4.   *See infra* Part IV.B.

5.   In most cases, review of the ratio will yield no constitutional flaw. *See BMW*, 116 S. Ct. at 1603.

6.   *See* Theodore Eisenberg et al., *The Predictability of Punitive Damages*, 26 J. LEGAL STUD. 623 (1997).

7.   Either through typographical error, misunderstanding of the legal system, or intentional oversight, some members of the business community continue to assert the existence of a rate of punitive awards bearing no relation to reality. Dennis Chookaszian,

claim that the data support is that some punitive damages awards have been extreme. The mass of punitive awards satisfy a surprisingly regular pattern.

Together, these two developments suggest a new approach to capping punitive awards. The approach is not based on arbitrarily chosen multiples of compensatory damages, the dominant current practice, but on experience. Using publicly available data, caps can be constructed that leave unaffected the mass of punitive awards while reining in, or triggering more active review of, the few extreme awards. We present here the empirical case for a system that caps punitive awards at ten times the compensatory award. The new approach offers increased certainty about the upper limits of potential punitive damages exposure while respecting the sober mass of actual awards. Experience-based caps preserve awards that, although in no sense statistically extreme, are vulnerable under existing capping systems. Experience-based caps affect awards that are, by statistical definition, unusual.

After developing a capping method based on the mass of punitive awards, we compare that method with the post-*BMW* pattern of punitive awards and courts' behavior in reviewing punitive awards. We find that post-*BMW* awards follow a pattern similar to that of the mass of pre-*BMW* awards. Punitive awards tend to increase with the size of compensatory awards. And courts reviewing punitive awards are much more likely to strike an award that falls above our empirically derived caps than they are to strike an award falling below the caps. Interestingly, the awards reported in opinions tend to be much higher than the awards in the mass of cases. Judges reviewing awards in light of prior opinions thus may systematically inflate the awards above what the mass of awards would support.

The focus here is narrow. This Article concerns one aspect of caps on punitive damages, the relationship between the compensatory and

Chairman and CEO, CNA, asserts: "According to a recent study by the Institute for Civil Justice, punitive damages were awarded in about 16 percent of cases between 1985 and 1989 and in about 13 percent of cases between 1990 and 1994." *Tort Reform: Reining in Punitive Damages Will Make American Business More Competitive*, FORBES, July 28, 1997, at 166 (advertisement). The study referred to supports no such claim. The study is by the RAND Institute for Civil Justice and reports percentages similar to those mentioned in the advertisement only for financial injury verdicts in tried cases. Financial injury verdicts are described as those rendered in disputes arising from contractual or commercial relationships, including, for example, disputes stemming from insurance or employment contracts, or from unfair business practices. *See* ERIK MOLLER ET AL., INSTITUTE FOR CIVIL JUSTICE (RAND), PUNITIVE DAMAGES IN FINANCIAL INJURY JURY VERDICTS (1997). Thus, Mr. Chookaszian ignores both that the study is limited to the small subset of cases that reach trial and that the study does not include products liability or medical malpractice cases.

punitive award. This relationship is important because the punishment imposed ought to relate in some measure to the harm caused. Even if one satisfactorily prescribes the relation between compensatory and punitive awards, important issues remain. A seemingly out-of-line award need not always be invalidated. It might only be subject to enhanced or de novo judicial review to determine whether special circumstances warrant a departure from the cap. And other factors, such as the degree of reprehensibility of behavior, can and should play a role in the review of punitive damages awards.[8]

Part II of this Article reviews the relation between punitive and compensatory damages awards and refines our prior findings. It then responds to a critique of our prior findings that asserts we drew incorrect conclusions and again concludes that the historical pattern of awards can be put to good use. Part III explores the effect of existing capping systems on the historical pattern of punitive damages awards. The capping systems do little to rein in awards at the low and high ends of the punitive-compensatory ratio spectrum. Awards in the middle are most affected yet these awards are, as a group, not extraordinary. Part III illustrates the different and perhaps more rational impact of experience-based punitive damages caps and offers a simple capping system that comports with the historical awards pattern. Part IV explores the post-*BMW* pattern of awards and considers how experience-based caps would affect that pattern.

II. THE PATTERN OF PUNITIVE AWARDS AND THEIR MEANING

We first refine the description of the punitive-compensatory awards relation by using a more refined statistical model. We then consider the implications of that relation.

A. Description of the Pattern

We report in detail elsewhere the pattern of punitive damages awards contained in one year of data, covering fiscal 1991-1992, gathered by the Civil Trial Court Network (CTCN) for state courts from forty-five of the country's largest urban counties, and from twenty-five years of data, covering 1960-1984, assembled by RAND's Institute for Civil Justice for California and Cook County, Illinois.[9] The most striking finding is that

---

8.   *See BMW*, 116 S. Ct. at 1599.
9.   *See* Eisenberg et al., *supra* note 6. For a complete description of the CTCN data, see INTER-UNIVERSITY CONSORTIUM FOR POLITICAL AND SOCIAL RESEARCH, CIVIL JUSTICE SURVEY OF STATE COURTS, 1992: [UNITED STATES] (ICPSR 6587) (1st ICPSR ed., 1996). For a description of the RAND data, see INTER-UNIVERSITY CONSORTIUM

the relation between compensatory and punitive awards is similar in all three data sets. A strong, statistically significant relation exists between the logarithm of compensatory damages and the logarithm of punitive damages.

For this Article, we improve the model slightly by allowing for more curvature in the relation. The new model does a better job of capturing the pattern in the data for low and high compensatory awards. It does not differ from our prior linear model in the mid-range of compensatory awards. Table 1 reports the results of the new regression[10] of the logarithm of punitive damages as the dependent variable, and the logarithm of compensatory damages, the logarithm of compensatory damages squared, and the logarithm of compensatory damages cubed as the independent variables.[11]

FOR POLITICAL AND SOCIAL RESEARCH, JURY VERDICTS DATABASE FOR COOK COUNTY, ILLINOIS, AND ALL COUNTIES IN CALIFORNIA, 1960-1984 (ICPSR 6232).

10. Multivariate regression is a statistical technique that quantifies the influence of each of several factors (independent variables) on the phenomenon being studied (dependent variable). *See generally* MICHAEL O. FINKELSTEIN & BRUCE A. LEVIN, STATISTICS FOR LAWYERS ch. 12 (1990); DAVID W. HOSMER & STANLEY LEMESHOW, APPLIED LOGISTIC REGRESSION (1989).

11. The model accounts for the county-level clustered nature of the sample, *see* 3 Stata Corp., Statistical Software: Release 5, at 119 (1997), and robust standard errors are used, *see* Peter J. Huber, *The Behavior of Maximum Likelihood Estimates Under Nonstandard Conditions*, 1 PROC. FIFTH BERKELEY SYMP. ON MATHEMATICAL STAT. & PROBABILITY 221 (1967); Halbert White, *A Heteroskedasticity-Consistent Covariance Matrix Estimator and a Direct Test for Heteroskedasticity*, 48 ECONOMETRICA 817 (1980).

TABLE ONE
Cubic Model of Punitive Damages
As a Function of Compensatory Damages

(dependent variable = logarithm of punitive award)	
Explanatory Variable	
Compensatory award (log)	-5.220**
	(2.352)
Compensatory award (log)-squared	.498**
	(.223)
Compensatory award (log)-cubed	-.013*
	(.007)
Constant	25.434
	(8.019)
Model significance	.0000
Adjusted r-squared	.473
Number of cases	173

Note, * p<.1, ** p<.05. Robust standard errors are in parentheses. Source: CTCN data, 45 urban trial courts, 1990-1991.

The significant or near-significant levels of all three independent variables[12] suggest the propriety of the cubic model. In addition, the model provides a slight improvement in the amount of the punitive award's variance explained (the adjusted r-squared in the table), from .46 to .47, over a linear model. Visual comparison of the residuals and predicted values for the two models, a standard technique for assessing the validity of regression models, also suggests the superiority of the cubic model over the linear model. We conclude that the cubic model offers a slightly better fit to the data than does the linear model.

---

12.   One can view Table 1 as exploring the hypothesis that the explanatory variables have no linear relation to the dependent variable. By convention, the hypothesis being tested is called the null hypothesis. *See* GEORGE W. SNEDECOR & WILLIAM G. COCHRAN, STATISTICAL METHODS 64 (8th ed. 1989). The reported significance levels (the p-values in the table legend) are the probability of rejecting the null hypothesis when it is true. The smaller the significance level, the more surprised one would be to observe the relation between the explanatory variable and the dependent variable if the tested hypothesis (no relation) were true. *See id.* By arbitrary convention, results that are significant at or below the .05 level are described as statistically significant. *See, e.g.*, THE EVOLVING ROLE OF STATISTICAL ASSESSMENTS AS EVIDENCE IN THE COURTS 197 (Stephen E. Fienberg ed., 1989).

Figure 1 in the Appendix shows the relation between compensatory and punitive awards for the CTCN data for fiscal 1991-1992, together with lines representing Table 1's cubic regression model. Each circle represents one case's compensatory damages award and its corresponding punitive damages award. Figure 1's middle curved line, labeled "Cubic Model" is the regression line that best fits the data.[13] The curved lines labeled "Upper 95%" and "Lower 95%" above and below the middle lines in Figure 1 are the upper and lower 95 percent prediction lines for the cubic model. They provide a way to designate punitive awards that, given the mass of awards, bears an extreme relationship to compensatory awards. Awards above the upper 95 percent line and below the lower 95 percent line could reasonably be said to differ from the mass of awards. Using 95 percent lines as a cutoff is conventional but arbitrary.[14] A different cutoff could be used. Based on the pattern of CTCN awards, there is less than one chance in twenty that an award would be above the 95 percent prediction line by chance. The straight line in Figure 1, labeled "Linear Model," is the linear robust regression line that best fits the data, as reported in our earlier article.[15] We present it for purposes of comparison with the cubic model.

Figure 1 in the Appendix also shows the cubic model's better visual fit with the scatterplot of the data than does the robust regression linear model used earlier. The cubic model captures the more level pattern of the data for low and high compensatory awards than does a linear model. As the two middle lines (one curved and one straight) in Figure 1 suggest, for the vast bulk of the range of compensatory awards, there is little material difference between the cubic and the linear models. The linear regression model closely tracks the cubic model for much of the range of compensatory awards. So little of what follows depends substantially on the particular functional form chosen for the model.

Two central results emerge from the pattern of compensatory and punitive awards. First, the pattern is not random. Table 1 shows that a strong, statistically significant, relationship exists between the level of punitive and compensatory awards. About half the variance in punitive awards is explained by the level of compensatory awards.[16] Second, using the upper 95 percent prediction line as a reference point, in the CTCN data sample there are virtually *no* extreme awards. All but one of the awards fit within the upper prediction band and the one above the line

---

13.   One constructs this line from Table 1 using the following equation, where y is the logarithm of the punitive award and x is the logarithm of the compensatory award:
$$y = -.013x^3 + .498x^2 - 5.220x + 25.434.$$
14.   *See supra* note 12.
15.   *See* Eisenberg et al., *supra* note 6, at 652.
16.   For similar results from our earlier linear model, see *id.* at 648, 650.

is only barely above it. Thus, in a sample of one year of a large fraction of the nation's state court litigation, no punitive awards were "off the charts" as a function of the corresponding compensatory award.

B. Does the Pattern of Punitive Awards Mean Anything?

Before discussing the implications of the awards pattern, commentary on our earlier work raises a preliminary question about whether the CTCN data should be used to explore the effects of capping systems or to help assess post-*BMW* punitive award experience. In a thoughtful critique, Professor Polinsky seems to question whether our findings show anything useful.[17] He argues that our results are consistent with punitive damages being a highly significant part of the legal system, a result that could be troubling in light of his assertion that our data are fully consistent with punitive damages being randomly awarded and irrationally related to compensatory damages. He concludes:

> Although the Eisenberg et al. study adds substantially to our empirical understanding of punitive damages, I believe . . . that they have seriously misinterpreted, or drawn incorrect conclusions from, their empirical results. I have explained why punitive damages may be a significant factor in litigation despite the fact that only a small fraction of cases in their sample involve punitive damage judgments, why their results are consistent with the possibility that punitive damages are awarded on a random basis, and why punitive damages may not be rational even if the level of punitive damages is systematically and positively related to the level of compensatory damages. In a nutshell, punitive damages may be significant, unpredictable, and irrational, contrary to what Eisenberg et al. would have us believe.[18]

A general response to Professor Polinsky's critique is that we need not establish that punitive damages are insignificant, predictable, and rational to have made our point. All we need claim is that our data support the notion that the system of punitive damages is *less* significant, *less* unpredictable, and *less* irrational than is widely believed. Since part of the basis for the widely held beliefs about punitive damages was the

---

17.	*See* A. Mitchell Polinsky, *Are Punitive Damages Really Insignificant, Predictable, and Rational? A Comment on Eisenberg et al.*, 26 J. LEGAL STUD. 663 (1997).

18.	*Id.* at 677.

presumed lack of relation between compensatory and punitive damages awards,[19] establishing the existence of that relation should reduce concern about the punitive damages system.

More specifically, we have no quarrel with Professor Polinsky's assertion that punitive damages may be a significant force in the legal system. We do, however, reject his empirically unsupported conclusions that the observed pattern of punitive awards is consistent with random imposition of such awards and that the observed pattern of awards is consistent with an irrational pattern of awards.

1. THE SIGNIFICANCE OF PUNITIVE DAMAGES IN SETTLED CASES

We do not dispute that "punitive damages may be a significant factor in litigation despite the fact that only a small fraction of cases" involve punitive awards. The insignificance claim is one Professor Polinsky teased out of our article, not one we make. He states:

> Given Eisenberg et al.'s explicit comments about the infrequency of punitive damages and the implications of their results regarding the magnitude of punitive damages, a reasonable interpretation of their position is that punitive damages are, on average, not significant.[20]

We do note the infrequency of punitive awards, but do not claim that our results imply that punitive damages are insignificant. This passage slides from invoking our statement that punitive awards are infrequent, to invoking our result that punitive and compensatory damages are highly correlated, to interpreting our position as being that punitive damages are insignificant. By the end of the passage, one has traveled quite a way from what we wrote. We might not even quarrel with the claim that "on average"— whatever that means in this context—punitive awards are not significant. But that is different than asserting that punitive damages are insignificant, which we do not do. "Less significant than widely believed" and "not a significant factor in the bulk of cases" are both reasonable characterizations of our results. An area of law that can generate $8 billion in Texaco-Pennzoil, $5 billion in Exxon-Valdez, and $1.2 billion in the Marcos Estate litigation cannot be dismissed as insignificant and we do not do so. So we accept the point that punitive awards are, in some absolute sense, significant and hope that we did not write in a way that conveyed the opposite impression.

---

19. *See* Eisenberg et al., *supra* note 6, at 624.
20. Polinsky, *supra* note 17, at 665.

Professor Polinsky's central theme on the significance issue is that punitive damages may be more significant in settled cases than in the subset of cases that reach trial[21] that we studied. He presents a balanced discussion that raises both the possibility that punitive damages cases are unusually likely to settle[22] and the possibility that punitive damages cases are unusually likely to go to trial.[23] These seemingly contradictory possibilities arise because uncertainty can fuel both proceeding to trial[24] and settlement,[25] albeit in different classes of cases. He correctly notes that we do not address the question whether punitive damages cases settle more often or less often than ordinary cases.[26] This leads him to state that, without knowing whether punitive damages cases settle more often or less often than other cases, "it is not possible to say whether the effect of punitive damages on trial outcomes is representative of the effect of punitive damages on settlements."[27]

Professor Polinsky presents hypothetical distributions of tried and settled cases in which punitive damages cases appear proportionately more often in the mass of settled cases than in the mass of tried cases. Furthermore, these punitive damages cases are hypothesized to settle on terms in which the punitive damages component dominates.[28]

But our argument does not depend on tried cases perfectly representing settled cases. It does depend on the outcomes of tried cases affecting the terms of settlement in settled cases. In the class of punitive damages cases that settle, we claim that the terms of settlement are affected by the outcomes of the potential punitive damages cases that reach trial. In the extreme, if the subset of potential punitive damages cases that reach trial never results in a punitive award, we would expect that result to be reflected ultimately in the settlement terms of the subset of the cases that settle. If, for example, after several years of punitive damages case trials, punitive damages were never awarded, we might even expect punitive damages to lose their influence on the terms of

---

21.   *See id.* at 667-70.

22.   *See id.* at 667-68.

23.   *See id.* at 669-71.

24.   *See* Theodore Eisenberg, *Commentary on "On the Nature of Bankruptcy":
Bankruptcy and Bargaining*, 75 VA. L. REV. 205, 209-10 (1989); Polinsky, *supra* note
17, at 668-70.

25.   Sometimes uncertainty fuels settlement rather than trial. *See* Eisenberg, *supra*
note 24, at 210 (noting that uncertainty pushed the Agent Orange and Texaco-Pennzoil
cases towards settlement); Conference on the Proposed Tobacco Settlement, Harvard Law
School, July 31, 1997 (uncertainty fueled the national tobacco settlement) (statement of
Meyer Koplow).

26.   *See* Polinksy, *supra* note 17, at 671.

27.   *Id.*

28.   *See id.* at 666-67.

settled cases. This is the reasoning embodied in our statement, quoted by Professor Polinsky, that "'pretrial effects should reflect what juries have done in prior cases.'"[29]

Professor Polinsky states that an implication of this claim is that, "if punitive damages are unimportant on average at trial, they will not have a significant effect on the settlement process either."[30] But ours is not a claim that punitive damages fall below some threshold level of absolute significance. A more precise statement of our position might be: "if punitive damages are rarely awarded in the cases that reach trial in which they might be awarded, and if, when they are awarded, they bear a strong relationship to compensatory damages, then these results will ultimately affect the terms on which cases that contain the possibility of a punitive award settle." Our claim is that the infrequency of punitive damages and their tight relation to compensatory awards help shape settlement terms. If we are correct that their tight relation to compensatory awards is news, then we might expect this fact to be reflected in future settlement terms.

One can accept Professor Polinsky's statement that we do not know whether punitive damages cases are disproportionately present or absent in a sample of tried cases and still agree with our assertion that the results in tried punitive damages cases affect the terms of settlement in potential punitive damages cases that do not reach trial. Strong evidence exists that outcomes at one stage of legal proceedings correlate with outcomes at other stages. A strong positive correlation exists between plaintiff win rates on pretrial motions and at trial.[31] And plaintiff success in settled cases seems to correlate with plaintiff win rates in cases reaching judgment.[32] In fact, though punitive damages were not its focus, a study of antitrust cases found that trial outcomes affect settlements.[33]

2. ARE PUNITIVE DAMAGES AWARDED ON A RANDOM BASIS?

We question whether one can realistically claim that our "results are consistent with the possibility that punitive damages are awarded on a random basis."[34] The greater prominence of punitive awards in classes of cases involving intentional misbehavior is direct evidence that they are

---

29.   *Id.* at 665 (quoting Eisenberg et al., *supra* note 6, at 625).

30.   *Id.* at 665-66.

31.   *See* Theodore Eisenberg, *The Relationship Between Plaintiff Success Rates Before Trial and at Trial*, J. ROYAL STAT. SOC'Y, ser. A, pt. 1, at 111 (1991).

32.   *See* Theodore Eisenberg, *Negotiation, Lawyering, and Adjudication: Kritzer on Brokers and Deals*, 19 L. & SOC. INQUIRY 275, 292-93 & n.64 (1994).

33.   *See* Jeffrey M. Perloff et al., *Antitrust Settlements and Trial Outcomes*, 78 REV. ECON. & STAT. 401 (1996).

34.   Polinsky, *supra* note 17, at 677.

not randomly awarded.[35] So the claim that the data are consistent with a random pattern of awards must shift to a claim that, within a class of cases, awards *may* be random. Our data preclude us from addressing that question directly. But we did note that studies that have looked more closely at a reasonable number of punitive award cases within case categories conclude that punitive awards tend to be given in appropriate cases.[36] Absent evidence to the contrary, we do not agree that our results, when combined with other studies, are consistent with random decisions to award punitive damages.

If there is a strong random component to the decision to award punitive damages we suspect that one would most likely detect it within the class of cases in which there has been serious misbehavior. Within this class of cases, it may be (we do not really know) that a substantial random component is at work; in particular, many defendants escape punitive damages who could be subjected to them. Such a pattern is not evidence of a random pattern of awards in the most troublesome sense. It would be evidence that, given serious misbehavior, not all defendants potentially subject to punitive awards suffer them. But those who do suffer them tend to do so appropriately. Criminal law may supply a useful analogy. Not all criminals are caught and convicted. But the vast majority of those who are caught and convicted are rightfully convicted. There may be a random component to who gets caught and convicted. But, absent pernicious selective prosecutorial behavior, those who are caught and convicted hardly have standing to complain.

Ultimately, Professor Polinsky is too candid and respected a scholar to not concede what he must: "I am not, of course, suggesting (nor do I believe) that punitive damages are awarded in practice in a random way."[37]

3. THE IMPLICATIONS OF THE RELATION BETWEEN COMPENSATORY AND PUNITIVE DAMAGES

Professor Polinsky's last claim is that "punitive damages may not be rational even if the level of punitive damages is systematically and positively related to the level of compensatory damages."[38] The discussion accompanying this claim makes clear that Professor Polinsky is using the term rational only in a fairly narrow law-and-economics

---

35.   *See* Eisenberg et al., *supra* note 6, at 635-37.

36.   *See id.* at 646-47 & nn.56-58. For a recent study of this issue, see Michael L. Rustad, *How the Common Good Is Served by the Remedy of Punitive Damages*, 64 TENN. L. REV. 793 (1997).

37.   Polinsky, *supra* note 17, at 673.

38.   *Id.* at 677.

sense. The legal system, including the Supreme Court in *BMW*, assumes that some increasing relation between compensatory and punitive damages is expected.

Within the narrower world of legal economic rationality, Professor Polinsky first develops a formula that seems "to support the premise of Eisenberg et al. that there should be a systematic positive relationship between the level of punitive damages and the level of compensatory damages."[39] He then argues that, from a deterrence perspective, "in some contexts . . . the proper level of punitive damages is inversely, not positively, related to the level of compensatory damages."[40] If one accepts a purely deterrent perspective, the inverse relation arises because greater harms (compensatory damages) lead to a greater likelihood of detection and liability, which reduces the need for a punitive award.

We note first that the possible inverse relation is a second-level effect. As a first approximation, Professor Polinsky produces a formula in which a positive relation between compensatory and punitive awards would be evidence of a system consistent with a deterrent approach. Only in the second iteration did the inverse term appear.

Second, the law has not accepted a purely deterrent theory of *punitive* damages. They are meant to punish as well as to deter, a purpose accepted even by vigorous advocates of tort reform.[41] From even a partial punishment perspective, an increase in punitive awards should accompany an increase in compensatory awards. Greater harms call for greater punishments. In this perspective, the fact that punitive awards increase with compensatory awards is evidence that the system is performing rationally, more rationally than one in which jurors "simply pick numbers out of the air."[42] Whether the relation we established supports some minimal level of desired rationality is a question we did not address. The relation at least suggests a more rational system than one in which there is no relation between compensatory and punitive awards, as some claimed before our data were published.

On balance, our data do contain meaningful information about the pattern of punitive awards and suggest that some concerns about punitive damages awards should be eased. We therefore proceed to consider the

---

39.   *Id.* at 675.

40.   *Id.* at 674.

41.   *See, e.g.*, Victor E. Schwartz & Mark A. Behrens, *Punitive Damages Reform-State Legislatures Can and Should Meet the Challenge Issued by the Supreme Court of the United States in* Haslip, 42 AM. U. L. REV. 1365, 1375 (1993). For an excellent discussion of the dual purposes of tort law, see Gary T. Schwartz, *Mixed Theories of Tort Law: Affirming Both Deterrence and Corrective Justice*, 75 TEX. L. REV. 1801 (1997).

42.   *Trial Lawyers Triumph*, WASH. POST, Mar. 19, 1996, at A16.

implications of our data for capping systems and for assessing the post-*BMW* pattern of punitive awards.

III. THE IMPACT OF CAPPING SYSTEMS ON PUNITIVE AWARDS

Part I and other studies find no evidence that the historical mass of punitive awards, in contrast to occasional aberrational awards,[43] is suspect. This suggests that policymakers might wish to use the existing pattern of awards to identify suspect awards. Using the pattern of awards to cap the punitive-compensatory ratio would be consistent with some aspects of the current approaches to caps. In one view, it merely extends the reasoning already implicitly applied to low compensatory awards to mid-level awards.

A. Existing Capping Mechanisms

Punitive damages capping statutes usually contain two central components. First, they are discussed and implemented in terms of multiples of compensatory damages. From the vetoed federal Commonsense Product Liability Reform Act of 1996 (1996 Act) to the many state-enacted caps, the use of a multiple of compensatory damages is a standard feature. As noted above, the punitive award's extremely high multiple of compensatory damages, 500, in *BMW of North America, Inc.* played a substantial role in the Supreme Court's invalidation of the punitive award.

Second, capping statutes usually contain an alternative cap, stated as a fixed amount. The 1996 Act employed a fixed amount of $200,000. The operative cap is usually the greater of the compensatory multiple or the fixed amount. For example, under the 1996 Act, the actual cap would have been the greater of $200,000 or twice the compensatory award. Most states with caps follow a similar pattern, combining a multiple with a fixed amount. For example, Alaska's vetoed tort reform legislation would have capped awards at three times compensatory damages or $300,000,[44] and the legislation that passed in 1997 raised the $300,000

---

43. Some of the awards most frequently cited as aberrational may turn out, on more careful review, not to have been as extraordinary as initially thought. *See* NEIL VIDMAR, MEDICAL MALPRACTICE AND THE AMERICAN JURY 11-12 (1995); Andrea Gerlin, *A Matter of Degree: How a Jury Decided That a Coffee Spill Is Worth $2.9 Million*, WALL ST. J., Sept. 1, 1994, at A1.

44. *See* SCS CSHB 158 (RLS) am S(ct rls fls S) § 7 (vetoed by Governor Knowles).

cap to $500,000, with some circumstances supporting greater or lesser awards.[45]

Use of an alternative fixed amount in nearly all capping statutes shows legislative unwillingness to rely on a single multiplier as a cap for the entire range of compensatory awards. The fixed amount removes the cap otherwise imposed by the simple multiple for low compensatory awards.

To illustrate, consider how caps function under one popular capping method, $300,000 or three times the compensatory award, whichever is greater. For convenience we refer to the $300,000-or-three-times system as the "Three Times" system. The $300,000 alternative cap increases the multiple of compensatory damages permitted at the low end of the compensatory award distribution. For a compensatory award of $10,000, the cap is the fixed amount, $300,000, not the multiple of three. At the $10,000 compensatory award level, therefore, a punitive award can be thirty times the compensatory award, not three times the compensatory award. The increased permissible multiple fades at the $100,000 compensatory award level. For a $100,000 compensatory award, the multiple and the fixed amount yield the same cap, $300,000. At compensatory award levels above $100,000, the multiple is the effective cap, and the fixed amount of $300,000 no longer functions.

It is no accident that so many capping statutes rely on a fixed amount alternative to the simple multiplier-based cap. The fixed amount alternative reflects the view that, for low compensatory awards, higher multiples are needed to accomplish punitive damages' purposes than are needed for high compensatory awards. The Supreme Court acknowledged this in *BMW*.[46] If the purposes of punitive damages are to punish and deter, capping the punitive award by a multiple of three times a $1,000 compensatory award may not allow the punitive award to be high enough to fulfill its purpose. Capping the punitive award by a multiple of three times a one million dollar compensatory award is less confining. Thus, existing capping systems reflect the belief that no single multiplier of compensatory awards suffices.

B. The Impact of Caps on the Existing Pattern of Awards

The observed pattern of punitive awards raises the question whether the reigning systems of fixed amount plus single multipliers affects awards that are truly out of line, or arbitrarily clamps awards that, in the larger

---

45. ·*See* 1997 Alaska Sess. Laws, ch. 26, § 10 (repealing and reenacting ALASKA STAT. § 09.17.020(f), (g), & (h)).

46.   116 S. Ct. 1589, 1602 (1996).

pattern of awards, are not unusual. In fact, the awards in which multipliers dictate the punitive cap do not seem out of line compared to other awards. They tend to be mid-range compensatory awards in which jurors implicitly employ a multiple of compensatory awards that is lower than the multiple used for low compensatory awards but higher than the multiple used for high compensatory awards. That is, as measured by multiples of compensatory awards, caps tend to affect middle-of-the-road punitive awards and not extremely high awards.

1. CTCN NATIONAL SAMPLE

Figure 2 in the Appendix, which explores the effect of the Three Times capping method on the pattern of punitive awards in the CTCN data, illustrates this point. It shows the scatterplot of punitive and compensatory awards, together with three lines. Two of the lines are the best fitting regression line, labeled the "Cubic Model," and the upper 95 percent prediction line, both taken from Figure 1 in the Appendix. The third line represents the Three Times capping method. It is a horizontal line equal to $300,000 for compensatory awards less than $100,000. At the $100,000 compensatory award level, the line slopes upward to represent three times the compensatory award.

According to Figure 2 in the Appendix, few awards, about 11 out of 173,[47] would be affected by the Three Times capping system. In addition, Figure 2 suggests that punitive awards at the low and high ends of the compensatory award distribution would be largely unaffected by the cap. At the low end of compensatory awards, the punitive awards exhibit high multiples of compensatory awards. Many punitive awards given in cases involving less than $20,000 in compensatory awards exceed three times the compensatory award. Below $20,000 in compensatory awards, a fairly large portion of the punitive awards exceed triple the compensatory award. The $300,000 fixed amount cap protects these low-end punitive awards. None of them would be affected by the illustrated cap.

At the high end, the Three Times system also would have little effect on actual awards, but for a different reason. If we take the "high end" to be compensatory awards above one million dollars, then few awards at the high end of the CTCN data would be affected. But here the reason is that punitive damages awards have not been in excess of three times the compensatory award.

---

47. Figure 2 excludes four cases with zero compensatory awards in which punitive damages were awarded. For such cases, a multiple of compensatory damages cannot serve as a cap.

In the CTCN data, the only group of awards affected by the Three Times cap are those in the mid-range of compensatory awards, between about $20,000 and one million dollars. These affected awards are above the Three Times line in Figure 2 in the Appendix and below the line labeled "Upper 95%." Are these awards so out of line as to call for legislative correction? The data suggest that jurors are employing roughly the same mechanism to govern the relationship between compensatory and punitive awards in this mid-range of awards as they are in the upper and lower ranges of compensatory awards. They are multiplying the mid-range awards by less than they multiply the low end awards and by more than they multiply the high end awards. This behavior probably reflects the view that some middle level of multiple is appropriate for the middle range of awards. It is the same implicit reasoning that leads to higher multiples for low compensatory awards.

2. COOK COUNTY AND CALIFORNIA DATA

Figures 3 and 4 in the Appendix explore the effect of the Three Times system on the two punitive damage data sets compiled by the RAND Institute for Civil Justice. Figure 3 reports data from Cook County, Illinois for the years 1960 through 1984. Figure 4 covers California for the same years.[48] Figures 3 and 4 show Table 1's cubic model regression line based on the national CTCN data, the upper 95 percent prediction line, and, as in Figure 2 in the Appendix, a line representing a Three Times capping system.

The Three Times capping method has minor implications for the Cook County data. Nearly all awards would escape caps under either the Three Times system or an empirically driven system based on the upper 95 percent prediction line. In the middle and upper ranges of compensatory awards, no Cook County cases are above the upper 95 percent prediction line. Five or six cases in this range would be affected by a Three Times capping system. As in the case of the CTCN data, the affected awards do not appear to be distinctive for any reason other than that they would be affected by the Three Times system. They are within the upper 95 percent prediction line and not far away from the general pattern of punitive awards.

At the low end of awards, below $20,000, only two or three awards would be affected by the Three Times system. The $300,000 alternative cap kicks in to protect most low end awards.

---

48. Both figures omit cases with compensatory awards of less than $1,000, for which multiplier-based caps cannot work well. For figures that include these awards, see Eisenberg et al., *supra* note 6, at 661.

The Three Times system affects many more cases in the California data. Figure 4's RAND data for California in the Appendix reveal a more complex story, in part because of the far greater number of data points. In this denser data set, it is helpful to further subdivide the low end of compensatory awards. We refer to compensatory awards of less than $2,000 as being in the extreme low end, and awards from $2,000 to $20,000 as being in the low end.

At the extreme low end, the $300,000 alternative cap protects most awards. Only one award in the 25-year period would be affected by the Three Times capping system.[49]

At the rest of the low end of awards, from $2,000 to $20,000 in compensatory awards, all the awards affected by the Three Times system would also be affected by a CTCN-based 95 percent prediction-line based cap.

In the middle range of compensatory awards, many awards would be affected by the Three Times system that would not be affected under an empirically driven system capped using the upper 95 percent prediction line. This is in marked contrast to the CTCN and Cook County data. Many of the additional awards capped under the Three Times system do not appear to be distinctive for any reason other than that they would be affected by the system. They are within the upper 95 percent prediction line and not far away from the general pattern of punitive awards. A nontrivial group of awards are above both the upper 95 percent prediction line and the Three Times line. They would be suspect under either system. The number of awards above both lines comprise about one award per year.

Above one million dollars in compensatory damages, about seven or eight California awards would be affected by the Three Times system. Again, most of these additionally affected awards do not appear to be "off the charts."

C. Regional Variation

The Three Times system's greater impact on California awards is a consequence of the greater spread in the California data. A given level of compensatory awards in California supports a wider range of punitive awards than in the CTCN or Cook County data. This is part of a larger pattern of regional variation in the pattern of punitive awards.[50]

---

49.   At the extreme low and high ends, the data used to generate predictions are sparse.

50.   *See* Eisenberg et al., *supra* note 6, at 640-41.

This variation does not manifest itself through dramatically different best-fitting linear regression lines. As noted in our earlier article, the robust linear regression lines that best fit the three data sets do not substantially vary. But the upper 95 percent prediction lines do differ regardless of the model (linear or cubic) employed. The Cook County and CTCN prediction lines are reasonably similar but the upper 95 percent prediction line for the California data is substantially higher than the other two upper 95 percent prediction lines.

To illustrate, Table 2 presents, for each of the three data sets, the upper 95 percent prediction of punitive awards at three levels of compensatory awards, $10,000, $100,000, and $1,000,000. For Cook County and California, we use linear robust regression, as in our earlier article, because the nonlinear cubic model that is superior for the CTCN data is not demonstrably better than a linear model. The numbers have been rounded.

TABLE TWO
Upper 95% Predictions of Punitive Awards by
Data Set and Compensatory Award Level

	Compensatory Award Level		
	$10,000	$100,000	$1,000,000
Upper 95% prediction based on:			
CTCN data	$234,000	$1,318,000	$10,928,000
Cook County data	$207,000	$1,380,000	$9,297,000
California data	$484,000	$3,596,000	$27,000,000

At the $10,000 compensatory award level, the upper 95 percent prediction line for the CTCN data would support up to a $234,000 punitive award. The Cook County line would yield a $207,000 top punitive award and the California data a $484,000 top punitive award. At the $1 million compensatory award level the difference between the upper 95 percent award in California and the other data sets is about $16 to $18 million.

These large differences raise two issues. First, one would want somewhat greater confidence in the reliability of the California data and

the source of its greater variation. The data source used, jury verdict reporters, may overemphasize large, unusual awards.[51]

Second, if the large variation persisted one would have to decide whether experience-based caps should vary locally. But less may be at stake in the choice of local versus national caps than first appears. One could use the upper 95 percent prediction line generated by the geographically diverse CTCN data set and apply it locally. This would relieve anxiety about the reliability of the California data and allow for the possibility of a national system of caps. Because punitive damages awards are so rare, many states, unlike California, would have difficulty generating meaningful locally-based caps. Figure 5 in the Appendix shows the relation between the California-based and the CTCN-based upper 95 percent prediction lines on the California data.

Figure 5 in the Appendix shows that, if the CTCN upper 95 percent prediction line were applied to the California pattern of punitive damages awards, about twenty more punitive awards, roughly one per year, would be suspect than if the California upper 95 percent prediction line were used. But using either the CTCN or California upper 95 percent prediction line would affect a set of awards that seem more extreme than the set of awards capped by the Three Times system, as shown in Figure 4 in the Appendix.

D. A Simple Capping System Faithful to the Historical Pattern of Awards

The vast bulk of awards in all data sets fall below the upper 95 percent prediction line derived from the most thorough sample, the CTCN data. This suggests using that line as a cap for awards. Awards above that line could be subject to stricter review than awards below that line and might even be viewed as presumptively unconstitutional.

One practical problem associated with using the upper 95 percent prediction line is that it does not correspond to a single multiple. Throughout the range of most awards, however, a single multiple line will suffice. A multiple of ten to one provides a line strikingly close to the upper 95 percent prediction line throughout a large range of compensatory awards. Coincidentally, such a line has been adopted as the constitutionally mandated line by the United States Court of Appeals for the Tenth Circuit in economic injury cases if the damages are significant

---

51.   *See id.* at 636.

and the injury not hard to detect.[52] For an alternative cap on punitive awards in small compensatory damages cases, we borrow from Alaska's $500,000 cap on such awards[53] to construct Figure 6 in the Appendix.

The Figure 6 line in the Appendix labeled "500,000 or Ten Times Compensatory" represents a capping system relying on the same principles as the Three Times or similar systems but that provides a better fit with the existing pattern of awards. All awards in the CTCN data that would be suspect under the new system are either at or extremely close to the upper 95 percent prediction line.[54] The upper 95 percent prediction line and the "Ten Times" line cross at about $1.7 million in compensatory damages. So above that amount the upper 95 percent line provides a lower cap than the Ten Times line. This may not be an important issue because there are very few punitive awards near either line for that range of compensatory awards. Such high punitive awards might be subject to detailed review simply because of their size, without regard to how well they fit the pattern of awards. Indeed, the pattern of awards thins out considerably above $1 million in compensatory damages.

IV. POST-*BMW* ASSESSMENTS OF PUNITIVE DAMAGES AWARDS

To explore how courts have been treating punitive-compensatory ratios after *BMW*, and how that treatment compares with a system based on the CTCN upper 95 percent prediction line, we analyzed judicial treatment of the relation between compensatory and punitive awards in every post-*BMW* case that generated an opinion reported on WESTLAW. Analyzing these cases in light of the CTCN data suggests that courts have, in general, been assessing the punitive-compensatory ratio in a manner consistent with the CTCN data. But the pattern of opinion-based awards also suggests that courts should be cautious in relying solely on opinions as precedent in analyzing punitive-compensatory ratios. The mass of awards, represented in the CTCN data and not reflected in opinions, supports much lower ratios than the rarefied set of cases that lead to opinions.

---

52.   *See* FDIC v. Hamilton, 122 F.3d 854 (10th Cir. 1997); Continental Trend Resources, Inc. v. OXY USA, Inc., 101 F.3d 634, 639 (10th Cir. 1996), *cert. denied*, 117 S. Ct. 1846 (1997).

53.   *See supra* note 45 and the limitations in the referenced legislation.

54.   RAND reports that sixteen percent of financial injury punitive awards in several large jurisdictions would be affected by a Ten Times capping system. *See* MOLLER ET AL., *supra* note 7. For the meaning of financial injury awards, see *supra* note 7.

A. Methodology

We searched WESTLAW's ALLFEDS and ALLSTATES databases in mid-July 1997 using the query "BMW & GORE & PUNITIVE," limited to cases decided after *BMW of North America, Inc. v. Gore.* The search yielded 110 cases. Many of the cases were not suitable for inclusion in a study of the relation between compensatory and punitive awards. In some cases, the punitive award had been capped due to an existing state or federal cap.[55] Courts in such cases are more constrained than in a case without statutory caps. Studying statutorily-capped awards would not reveal how courts apply *BMW.*

Several cases without statutory caps on punitive damages were also not usable. In some cases, punitive awards with only nominal compensatory awards were revised or struck down.[56] In other cases, courts approved a punitive award even in the absence of a compensatory award.[57] In some cases, appellate courts held that no punitive award was warranted;[58] in others, the appellate court recast the merits of the case or changed the compensatory award.[59] Cases with these

---

55. *See* Jonasson v. Lutheran Child and Family Servs., 115 F.3d 436 (7th Cir. 1997); Benson v. Northwest Airlines, Inc., No. 4-95-581, 1997 WL 122897 (D. Minn. Mar. 18, 1997); Anderson v. YARP Restaurant, Inc., No. 94 Civ 7543, 1997 WL 27043 (S.D.N.Y. Jan. 23, 1997) (but Title VII cap not reached); Iannone v. Frederic R. Harris, Inc., 941 F. Supp. 403 (S.D.N.Y. 1996) (but Title VII cap not reached); Hearn v. General Elec. Co., 927 F. Supp. 1486 (M.D. Ala. 1996); Mobil Oil Corp. v. Ellender, 934 S.W.2d 439 (Tex. Ct. App. 1996).

56. *See* Lee v. Edwards, 101 F.3d 805 (2d Cir. 1996) ($1 nominal damages, $200,000 punitive award ordered remitted to $75,000); Creative Demos, Inc. v. Wal-Mart Stores, Inc., 955 F. Supp. 1032 (S.D. Ind. 1997) ($137 compensatory award, $6.5 million punitive award struck down); Southeastern Sec. Ins. Co. v. Hotle, 473 S.E.2d 256 (Ga. Ct. App. 1996) (nominal compensatory damages); Bain v. City of Springfield, 678 N.E.2d 155 (Mass. 1997) (zero compensatory, $100,000 punitive award remanded for new trial).

57. *See* Peter Scalamandre & Sons, Inc. v. Kaufman, 113 F.3d 556, 564 & n.6 (5th Cir. 1997) (noting Texas law prohibited punitive awards without a compensatory award but that the law was later amended); Shea v. Galaxie Lumber & Constr. Co., No. 94 C 0906, 1997 WL 51655 (N.D. Ill. Feb. 5, 1997) (sustaining $1 compensatory, $2,500 punitive award); Sheffield v. Andrews, 679 So. 2d 1052 (Ala.) (sustaining $10 compensatory, $1 million punitive award), *cert. denied,* 117 S. Ct. 610 (1996); Jacque v. Steenberg Homes, Inc., 563 N.W.2d 154, 156 (Wis. 1997) (reinstating $1 compensatory, $100,000 punitive award).

58. *See* Charles Shaid, Inc. v. George Hyman Constr. Co., 947 F. Supp. 844 (E.D. Pa. 1996); Langmead v. Admiral Cruises, Inc., 696 So. 2d 1189 (Fla. Dist. Ct. App. 1997); Kunewa v. Joshua, 924 P.2d 559 (Haw. Ct. App. 1996).

59. *See* BE & K Constr. Co. v. United Bhd. of Carpenters and Joiners, 90 F.3d 1318 (8th Cir. 1996); SK Hand Tool Corp. v. Dresser Indus., Inc., 672 N.E.2d 341 (Ill. App. Ct. 1996); Molenaar v. United Cattle Co., 553 N.W.2d 424 (Minn. Ct. App. 1996); Call v. Heard, 925 S.W.2d 840 (Mo. 1996); Green Bay Packaging, Inc. v. Preferred

characteristics cannot be used to study the relationship between a punitive award and a non-nominal compensatory award. Forty cases remained that contained forty-two usable compensatory and punitive awards that were reviewed by a court, at least in part, for the relation between the two awards. Two cases contained two different compensatory and punitive awards; in these cases we treat each separate award as a separate case.[60]

The 42 cases included 22 state court cases and 20 federal cases. All of the 22 state cases were appellate court decisions. Of the 20 federal cases, 12 were district court opinions reviewing or discussing a punitive award and eight were appellate opinions reviewing a punitive judgment entered by the district court.

B. Results

The post-*BMW* pattern of punitive awards and judicial review of such awards confirms, using a new data set, much of what the CTCN data suggest. The pattern of punitive-compensatory awards reviewed by courts reveals a strong, statistically significant relationship between compensatory and punitive damages.[61] And courts reviewing punitive awards place great weight on the level of compensatory damages. In a simple model of the decision to strike a punitive award, the level of compensatory awards is a significant predictor of whether an award will be struck.

The post-*BMW* awards pattern in reported opinions also provides new insights into how misimpressions of punitive awards may have developed. The universe of reported opinions, which is all most legal system observers ever see (in particular, observers almost never systematically see the mass of awards in the CTCN data), is systemically biased upwards. The multiple of compensatory damages observed in reported opinions is much higher than the multiple of compensatory damages observed in the mass of cases comprising the CTCN data. An observer who sees only reported opinions will therefore have a different impression of the pattern of punitive awards than an omniscient observer.

This bias in reported opinions has an important implication for judges reviewing punitive awards. If they assess awards only in relation to reported opinions, they will approve a pattern of awards that does not reflect the mass of awards. It will only reflect a group of fairly extreme awards.

Packaging, Inc., 932 P.2d 1091 (Okla. 1996).

60. One case required a present value calculation to assess the relationship between the punitive and compensatory awards. *See* Ingalls v. Paul Revere Life Ins. Group, 561 N.W.2d 273 (N.D. 1997). We used a six-percent discount rate.

61. *See* Figure 7 in the Appendix.

Reviewing reported punitive damages opinions also reveals a surprising prominence of judge-made punitive awards.

1. POST-*BMW* REDUCTION PATTERN

Because our sample of reported opinions contains cases from federal appellate courts, federal district courts, and state appellate courts, we first assess whether award patterns noticeably differ across these three groups of courts. We find no substantial evidence of significant differences in the treatment of the punitive-compensatory ratio by state and federal courts or by district courts and courts of appeals.

Table 3, panel A, presents summary statistics of the level of post-*BMW* awards, the ratio of punitive damages to compensatory damages, and the rate at which punitive awards were struck down or reduced. Although the mean punitive award varied substantially, the median punitive award was not strikingly different for the three categories of courts. (The mean federal appellate award is substantially increased by the $1.2 billion award in the Marcos estate case.[62]) Tests of the equality of punitive awards (log), the ratio of punitive and compensatory awards (log), and the rate at which punitive awards were struck down revealed no statistically significant difference across the three categories of cases.[63] Therefore no significant distortions are likely introduced in discussing the post-*BMW* line of cases as a single group of cases.

Table 3, panel B, presents probit estimates[64] of the decision to strike an award as a function of the logarithm of the punitive-compensatory ratio, and the court. Federal appellate cases serve as the reference category. In the first model, the decision to strike is a function of the punitive-compensatory ratio and the categories of courts. Only the punitive-compensatory ratio is statistically significant. In the second model, we add the logarithm of the punitive award as an explanatory variable and again find that only the punitive-compensatory ratio is statistically significant in modeling the decision to strike down a punitive

---

62.   *See* Hilao v. Estate of Marcos, 103 F.3d 767, 770-72 (9th Cir. 1996).

63.   We tested equality of means using an analysis of variance (ANOVA) test, equality of medians using a Kruskal-Wallis test, and equality of the rate at which awards were struck using chi-squared. For discussion of significance levels, see *supra* note 12.

64.   Because the dependent variable is dichotomous (punitive award struck or not struck), we use probit regression, which, for these data, yields a slightly better fit than logistic regression. *See* FINKELSTEIN & LEVIN, *supra* note 10, at 448.

award.[65]   The court-level dummy variables are not statistically significant in the models, either individually or collectively.

TABLE THREE
Post-*BMW* Punitive Awards Treatment
A. Description of Post-*BMW* Punitive Awards by Court

Court	Post-*BMW* Award (thousands)		Post-*BMW* Ratio: punitive/compens.		Percent of awards struck down	Number of Cases
	Mean	Median	Mean	Median		
Federal Appellate	154,639	750	35.3	6.2	50	8
Federal District	2,312	688	8.9	7.9	33.33	12
State Appellate	4,419	937	241.6	13.6	31.82	22
Significance level of tests of equality of populations	.358	.691	.155	.285	.642	

---

65.   There is no statistically significant correlation between the logarithm of punitive damages and the logarithm of the punitive-compensatory ratio.   Therefore, multicollinearity is not a substantial concern in the second model.

B. Probit Estimates of the Decision to Strike a Punitive Award

(dependent variable = whether punitive award was struck by court)		
Explanatory Variable		
Punitive/compensatory ratio (log)	.331**	.309**
	(.105)	(.111)
Punitive damages award (log)		.142
		(.116)
Court dummy variables		
Federal Appellate (reference category)		
Federal District	-.318	-.182
	(.639)	(.667)
State Appellate	-.885	-.848
	(.555)	(.577)
Constant	-.633	-2.631
	(.547)	(1.684)
Model significance	.009	.013
Pseudo r-squared	.167	.198
Log likelihood	-22.812	-21.954
Number of cases	42	42

Note, * $p < .05$, ** $p < .01$, *** $p < .001$. Robust standard errors are in parentheses. Source: Post-*BMW* punitive damages cases reported on WESTLAW, through mid-July 1997.

Without denying the importance of other factors on the decision to strike a punitive award, such as the nature of the defendant's misbehavior, and perhaps the defendant's wealth,[66] we conclude that substantial evidence exists that the punitive-compensatory ratio is a strong influence on judicial review of punitive damages awards.

---

66. *See* Jennifer H. Arlen, *Should Defendants' Wealth Matter?*, 21 J. LEGAL STUD. 413, 428-29 (1992) (presenting economic model in which wealth is relevant); Eisenberg et al., *supra* note 6, at 628-29 (describing law and economics literature on the role of defendant's wealth). *But see* Pivot Point Int'l, Inc. v. Charlene Prods., Inc., 932 F. Supp. 220, 223-24 (N.D. Ill. 1996) (Easterbrook, J.) (suggesting that the defendant's wealth may not be a permissible factor in determining punitive damages).

2. THE REPORTED OPINION BIAS AND ITS IMPLICATIONS

It is instructive to compare the pattern of punitive and compensatory awards in the cases for which post-*BMW* data are available with the pattern of awards in the CTCN national sample for 1991-1992. Such a comparison suggests that describing or assessing punitive awards based on reported opinions overstates the level of punitive awards and the ratio of punitive awards to compensatory awards. This results because published opinions are a highly filtered set of cases, often not representative of the mass of cases.[67]

Table 4 adds a row to Table 3, panel A, to facilitate comparison of the 173 state court trial level awards in the CTCN data with the awards in the cases reported on WESTLAW.

The state trial court awards differ substantially from the WESTLAW awards in both the level of punitive awards and the ratio of punitive to compensatory awards. The mean state trial court punitive award is less than one-quarter of the mean punitive award in any other category of cases. The median is less than one-tenth the median punitive award in any other category of cases. And the median punitive-compensatory ratio is about one-sixth the median ratio of any other category of cases. Not surprisingly, all cross-category tests of statistical significance now show highly significant differences across case categories. Similar vast disparities exist between the reported post-*BMW* opinions and the median ratios in the RAND 25-year data sets, and the median ratios in RAND data covering 1985-1989 and 1990-1994.[68]

---

67.   *See, e.g.,* Theodore Eisenberg & Sheri Lynn Johnson, *The Effects of Intent: Do We Know How Legal Standards Work?,* 76 CORNELL L. REV. 1151, 1172-75 (1991); Theodore Eisenberg & Stewart J. Schwab, *What Shapes Perceptions of the Federal Court System?,* 56 U. CHI. L. REV. 501 (1989).

68.   Both median ratios in the RAND 25-year data sets are less than two. In the more recent RAND financial injury data, the median ratio between punitive and compensatory damages was 1.4 for 1985-1994. *See* MOLLER ET AL., *supra* note 7. It declined from 1.5 for 1985-1989 to 1.2 for 1990-1994. *See id.* Comparing the post-*BMW* awards with the much older RAND awards could be made more precise by adjusting for inflation. But since our main concern is with the ratio of punitive to compensatory awards, this should not substantially alter our results.

TABLE FOUR
Description of Punitive Damages Awards by Court

Court	Award (thousands)		Ratio: punitive-compensatory		Number of cases
	mean	median	mean	median	
Federal Appellate	154,639	750	35.3	6.2	8
Federal District	2,312	688	8.9	7.9	12
State Appellate	4,419	937	241.6	13.6	22
State Trial (CTCN)	544	50	14.9	1.3	173
Significance level of tests of equality of populations	.000	.000	.000	.000	

The difference between the mass of cases decided in state trial courts and the highly filtered set of cases that lead to reported opinions has important implications for judicial review of the ratio of punitive to compensatory awards, either pre- or post-*BMW*. Courts reviewing punitive awards often try to assess such awards by comparing them with prior decisions.[69] Courts that search for prior patterns of awards can only be expected to find cases reporting punitive awards in cases with reported opinions, such as those reported by WESTLAW. Yet comparing punitive-compensatory ratios with the biased sample of reported opinions dramatically elevates the ratios that appear to have been approved in the past. This could lead courts that rely on past reported decisions to assess punitive-compensatory ratios to approve ratios that are higher than the actual mass of punitive-compensatory ratios, as represented by the CTCN data.

To further explore the implications of using reported opinions to assess punitive awards, Figure 7 in the Appendix again shows the three lines that represent the upper 95 percent prediction band, the best-fitting regression line, and the lower 95 percent prediction band for the CTCN awards. These lines are the same as those reported in Figure 1 in the Appendix. To these lines we add a scatterplot of the post-*BMW* awards. The data points represented by squares are post-*BMW* punitive awards that

---

69.   *See, e.g.*, Bain v. City of Springfield, 678 N.E.2d 155, 162 (Mass. 1997); Williams v. ITT Fin. Servs., No. C-960234, 1997 WL 346137, at *19 (Ohio Ct. App. June 25, 1997).

were rejected by courts. The data points represented by triangles are post-*BMW* awards that were approved by courts.

Figure 7 in the Appendix illustrates two important results. First, the model based on CTCN data has predictive value even when applied to the post-*BMW* pattern of awards. There is a tendency for awards above the CTCN upper 95 percent prediction band to be struck down and a strong tendency for punitive awards below the CTCN upper 95 percent prediction band to be sustained. Of the 16 awards above the CTCN upper 95 percent prediction band, 9 (56.25 percent) were struck down. Of the 26 awards below the CTCN upper 95 percent prediction band, only 6 (23.08 percent) were struck down. This difference is statistically significant.[70] The proposed Ten Times capping system yields results that differ by only one case in their predictive value. Of the 17 awards above the Ten Times line, 9 (52.94 percent) were struck down. Of the 25 awards below the Ten Times line, only 6 (24.00 percent) were struck down. This difference is marginally statistically significant (p = .10).

Incidentally, both the Ten Times and the CTCN upper 95 percent prediction line do a better job of explaining which awards the courts struck down than does a Three Times capping method. The Three Times method results in the striking of 11 of 24 (45.83 percent) punitive awards above the Three Times line, and in the striking of 4 of 18 (22.22 percent) punitive awards below the Three Times line. The CTCN-based line corresponds with court action in 29 of 42 cases, while the Three Times line corresponds with how courts behaved in 25 of 42 cases.

Second, *all* of the post-*BMW* reported awards lie above the best-fitting regression line for the CTCN data representing the mass of cases, most of which are not reported. Even if one limits the sample to those post-*BMW* awards approved by courts, all of those awards are above the best-fitting regression line that describes the mass of awards. The post-*BMW* set of awards, though driven downward by a change in law that imposed constitutional limits on punitive damages for the first time, is uniformly higher than the set of awards in the mass of tried cases predating *BMW*. This vast difference between the mass of punitive awards and the reported awards has important implications. The opinion-based impressions of judges and the public regarding the relation between punitive and compensatory awards must be systematically higher than the true relation.

Thus, a judge assessing a punitive award in light of reported precedents will assess that award in a manner that systematically biases upward the range of approved punitive-compensatory ratios. A judge

---

70. Using Fisher's exact test, p = .047. For discussion of significance levels (or p-values), see *supra* note 12.

looking at the mass of trial awards observes a median punitive-compensatory ratio of about 1.3 to 1. A judge looking only at awards in reported opinions observes a median ratio five to ten times higher. Figure 7 in the Appendix and Table 4 suggest that the rare judge who applied any form of statistical analysis to the prior pattern of awards would assess punitive-compensatory ratios quite differently depending on whether the judge looked at the CTCN mass of awards or the upwardly biased sample of reported opinions.

And the public or policymaker assessing the punitive damages system would have an exaggerated impression of the punitive-compensatory ratio. One looking only at those awards that lead to reported opinions observes a system different from one who has knowledge of the mass of awards. The further bias introduced by news media coverage oriented towards reporting the most extreme awards further distorts public and policymaker perceptions. Massive reform may be demanded when minor reform or no reform is called for.

3. FREQUENCY OF PUNITIVE AWARDS BY JUDGES

Studying the post-*BMW* published opinions yields another surprising result. Of the 110 opinions satisfying our WESTLAW search, seven contained punitive damages awards imposed by judges, not juries.[71] The 110 opinions include several in which punitive damages were not a serious issue. Roughly speaking, therefore, about 7% of the reported opinions discussing punitive damages address judge-imposed punitive awards. Since bench trials comprise only a small percentage of tort trials,[72] this seven percent figure strikes us as surprisingly high. Judges, perhaps almost as much as juries, seem moved to punish egregious wrongdoers. Punitive damages may not be awarded only by juries gone awry.

---

71. *See In re* Arnold, 206 B.R. 560 (Bankr. N.D. Ala. 1997); Gregory v. Chemical Waste Management, Inc., No. CIV 93-2343-H/V, 1996 WL 779774 (W.D. Tenn. Dec. 11, 1996); *In re* Solfanelli, 206 B.R. 699 (Bankr. M.D. Pa. 1996); Hearn v. General Elec. Co., 927 F. Supp. 1486 (M.D. Ala. 1996) (Title VII case); Means v. Kinney Shoe Corp., No. B093040, 1996 WL 617324 (Cal. Ct. App. Aug. 14, 1996); Call v. Heard, 925 S.W.2d 840 (Mo. 1996); Gianoli v. Pfleiderer, 563 N.W.2d 562 (Wis. Ct. App. 1997).

72. *See* Kevin M. Clermont & Theodore Eisenberg, *Trial by Jury or Judge: Transcending Empiricism*, 77 CORNELL L. REV. 1124, 1141 (1992); Theodore Eisenberg et al., *Litigation Outcomes in State and Federal Courts: A Statistical Portrait*, 19 SEATTLE U. L. REV. 433, 443 (1996).

V. CONCLUSION

The available evidence suggests that a capping system should not try to affect the mass of awards. No credible evidence supports the claim that punitive damages are awarded frequently, that when they are awarded they are unrelated to compensatory damages, or that punitive damages are systematically awarded in inappropriate cases. All of the evidence suggests just the opposite. Punitive damages are rarely awarded, especially in products liability and medical malpractice cases. The mass of punitive awards is significantly correlated with the corresponding compensatory award. And there is no evidence of punitive damages being awarded systematically in cases in which they should not be awarded.

Thus, the purpose of caps should be to rein in the relatively few extreme awards in which punitive damages are out of proportion to the nature of the defendant's misbehavior and the harm caused by the defendant. A capping system based on experience, rather than one based on arbitrarily chosen fixed multipliers, seems preferable to the current array of capping systems. The capping system discussed here, one based on the upper 95 percent prediction line derived from the national CTCN data, affects a more extreme set of awards than do existing capping systems. This line is well-represented by a capping system based on the greater of $500,000 or ten times the compensatory award. A Ten Times multiple may seem high to some observers. But recall that it is a cap, not a floor. Only highly extreme awards ought to be of constitutional interest or viewed as excessive as a matter of sub-constitutional legislative policy.

APPENDIX

Figure 1. Punitive and Compensatory Awards (log scales)—Cubic model, robust regression model, and upper and lower 95 percent prediction lines for relation between punitive and compensatory awards. Source: CTCN, 1991-1992, Inter-University Consortium for Political and Social Research, Civil Justice Survey of State Courts, 1992: [United States] (ICPSR 6587).
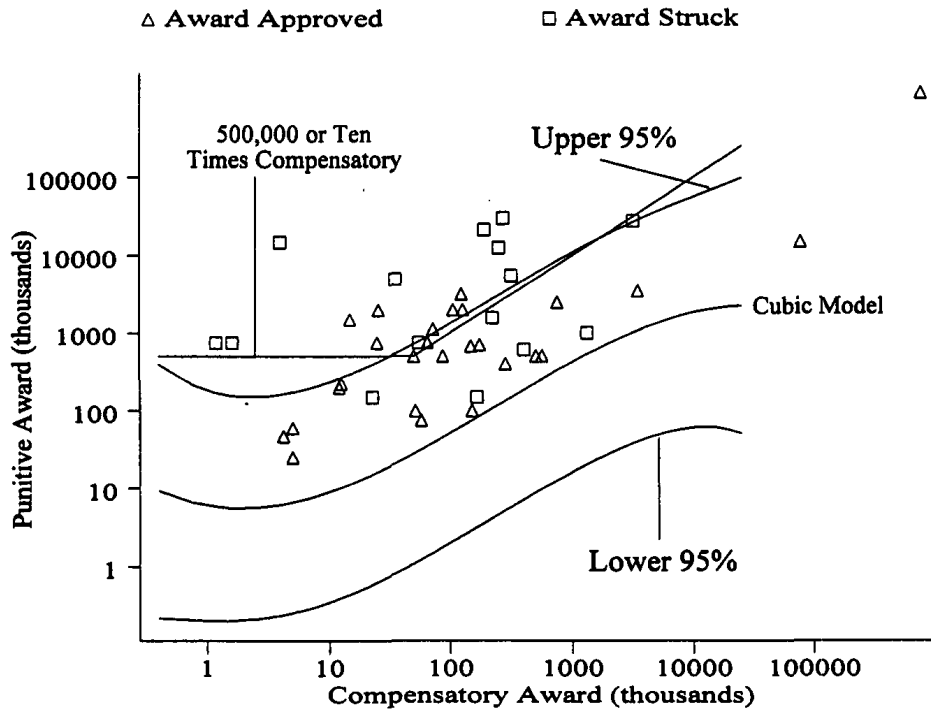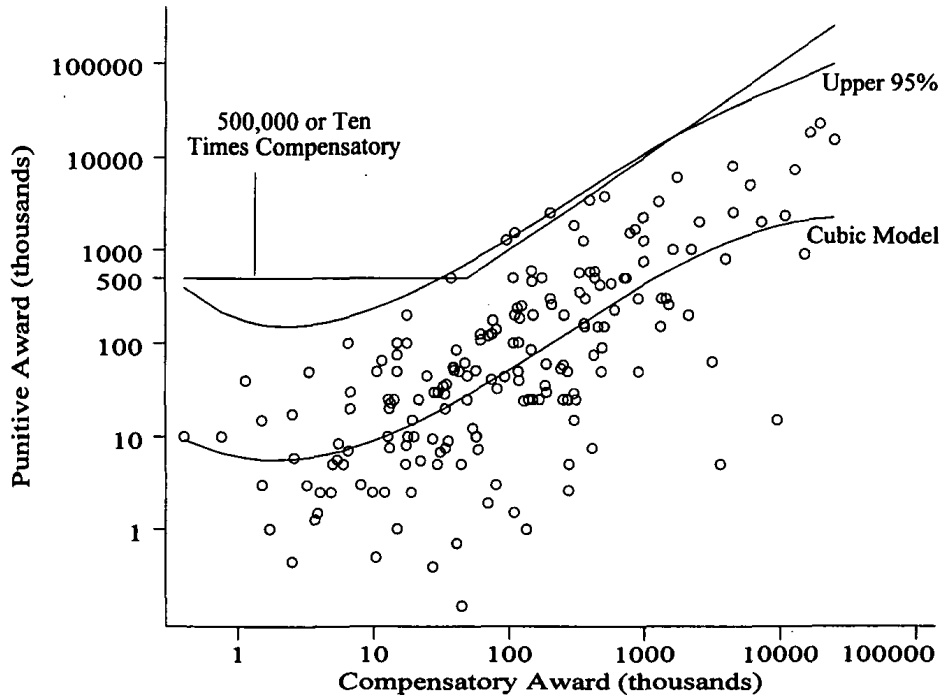
△ Award Approved   □ Award Struck

Figure 2. Punitive and Compensatory Awards (log scales) and Three Times Capping System—Cubic model, upper 95 percent prediction line, and Three Times capping system for relation between punitive and compensatory awards. Source: CTCN, 1991-1992, Inter-University Consortium for Political and Social Research, Civil Justice Survey of State Courts, 1992: [United States] (ICPSR 6587).

Figure 3. Punitive and Compensatory Awards (log scales) and Three Times Capping System, Cook County, 1960-1984—Cubic model, upper 95 percent prediction line (based on national CTCN data for 1991-1992), and Three Times capping system for relation between punitive and compensatory awards.   Source: Inter-University Consortium for Political and Social Research, Jury Verdicts Database for Cook County, Illinois, and All Counties in California, 1960-1984 (ICPSR 6232).
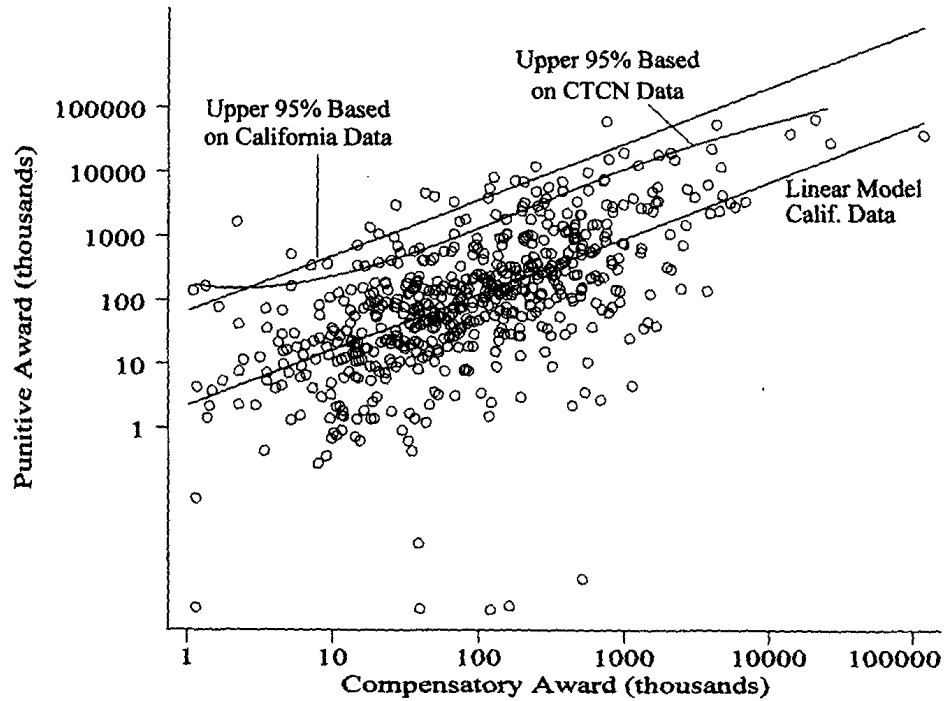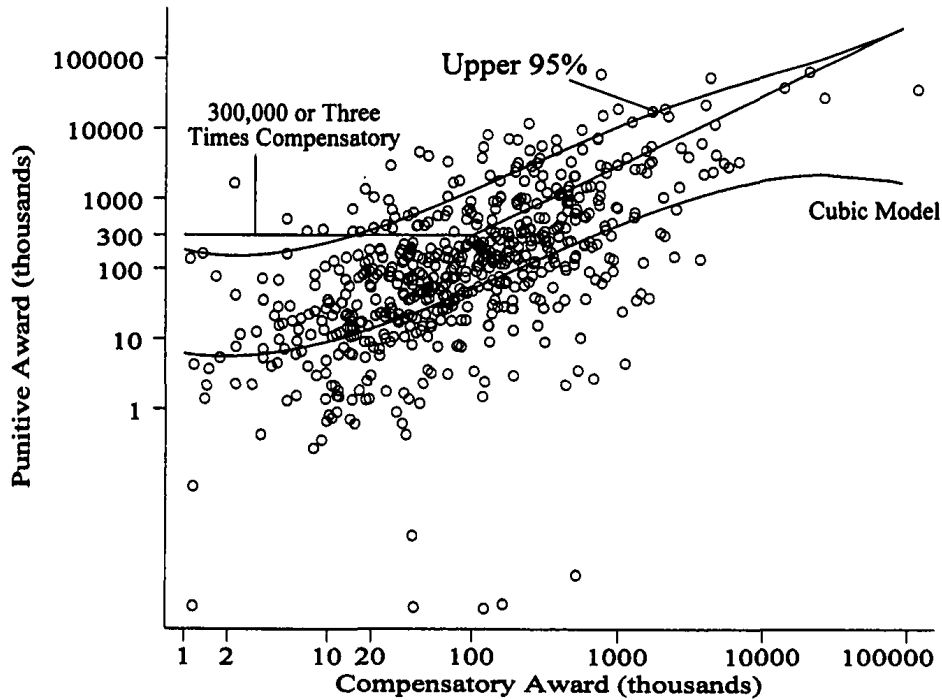
Figure 4. Punitive and Compensatory Awards (log scales) and Three Times Capping System, California, 1960-1984—Cubic model, upper 95 percent prediction line (based on national CTCN data for 1991-1992), and Three Times capping system for relation between punitive and compensatory awards. Source: Inter-University Consortium for Political and Social Research, Jury Verdicts Database for Cook County, Illinois, and All Counties in California, 1960-1984 (ICPSR 6232).

Figure 5. Punitive and Compensatory Awards (log scales), California, 1960-1984—Cubic model, upper 95 percent prediction line (based on California data for 1960-1984), and upper 95 percent prediction line (based on CTCN data for 1991-1992) for relation between punitive and compensatory awards. Sources: Inter-University Consortium for Political and Social Research, Jury Verdicts Database for Cook County, Illinois, and All Counties in California, 1960-1984 (ICPSR 6232); CTCN, 1991-1992, Inter-University Consortium for Political and Social Research, Civil Justice Survey of State Courts, 1992: [United States] (ICPSR 6587).
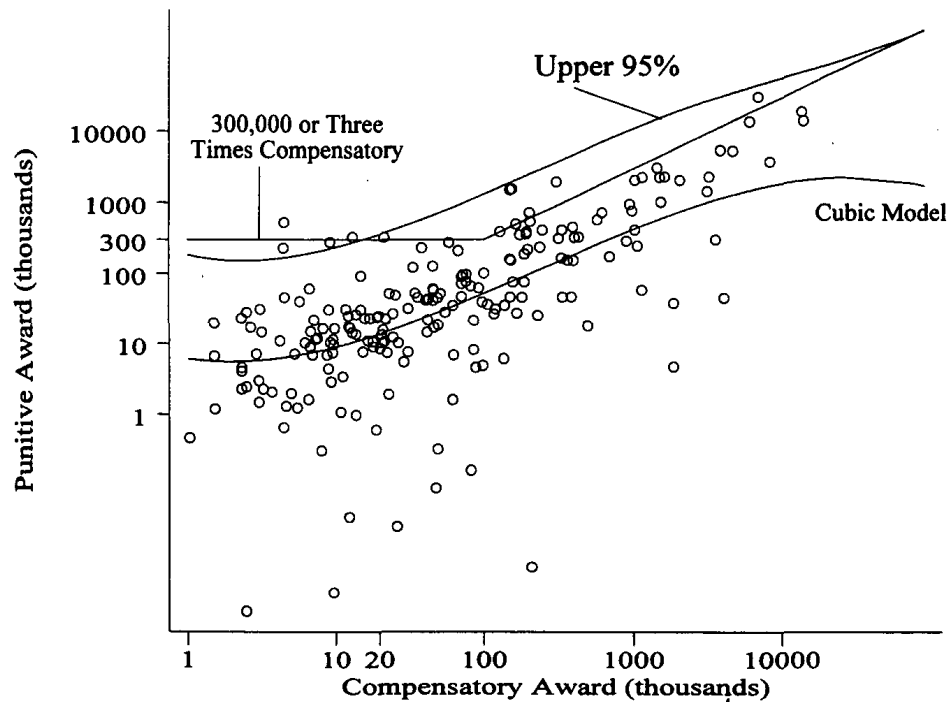
Figure 6. Punitive and Compensatory Awards (log scales) and Ten Times Capping System—Cubic model, upper 95 percent prediction line, and Ten Times capping system for relation between punitive and compensatory awards. Source: CTCN, 1991-1992, Inter-University Consortium for Political and Social Research, Civil Justice Survey of State Courts, 1992: [United States] (ICPSR 6587).
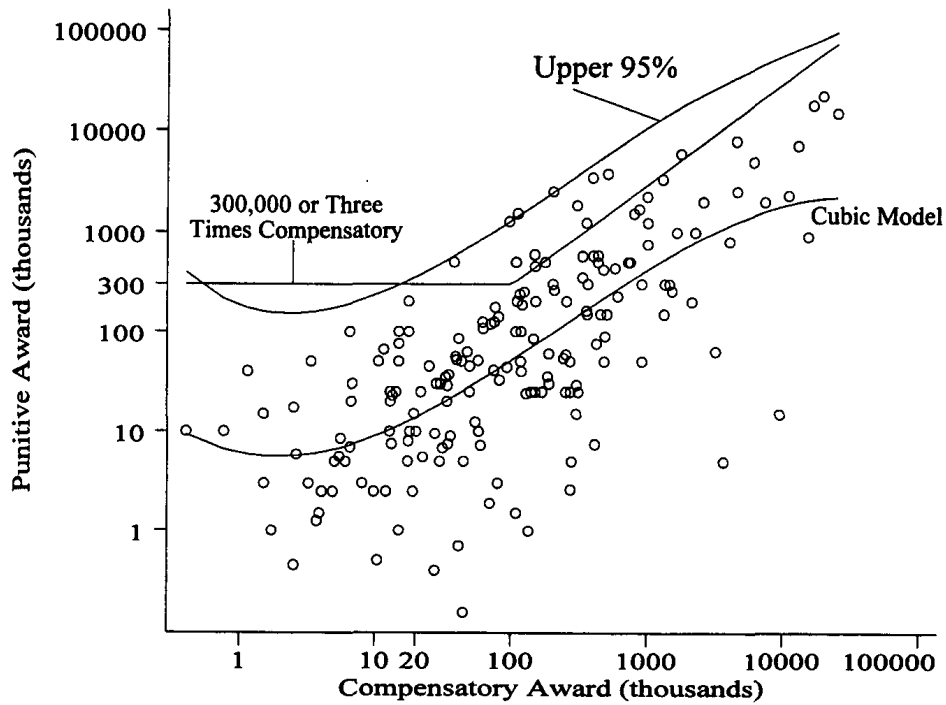
Figure 7. Punitive and Compensatory Awards (log scales), Three Times Capping
System, and Post-*BMW* Treatment of Punitive Awards—Cubic model, upper 95 percent
prediction line, lower 95 percent prediction line (based on CTCN 1991-1992 data), and
proposed Ten Times capping system for relation between punitive and compensatory awards.
Sources: Post-*BMW* reported opinions through July 16, 1997 available on WESTLAW;
CTCN, 1991-1992, Inter-University Consortium for Political and Social Research, Civil
Justice Survey of State Courts, 1992: [United States] (ICPSR 6587).