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Do Defendants Pay What Juries Award? Post-Verdict Haircuts in Texas Medical Malpractice Cases, 1988–2003

David A. Hyman, Bernard Black, Kathryn Zeiler, Charles Silver, and William M. Sage*

Legal scholars, legislators, policy advocates, and the news media frequently use jury verdicts to draw conclusions about the performance of the tort system. However, actual payouts can differ greatly from verdicts. We report evidence on post-verdict payouts from the most comprehensive longitudinal study of matched jury verdicts and payouts. Using data on all insured medical malpractice claims in Texas from 1988–2003 in which the plaintiff received at least $25,000 (in 1988 dollars) following a jury trial, we find that most jury awards received "haircuts." Seventy-five percent of plaintiffs received a payout less than the adjusted verdict (jury verdict plus prejudgment and postjudgment interest), 20 percent received the adjusted verdict

(within ± 2 percent), and 5 percent received more than the adjusted verdict. Overall, plaintiffs received a mean (median) per-case haircut of 29 percent (19 percent), and an aggregate haircut of 56 percent, relative to the adjusted verdict. The larger the verdict, the more likely and larger the haircut. For cases with a positive adjusted verdict under $100,000, 47 percent of plaintiffs received a haircut, with a mean (median) per-case haircut of 8 percent (2 percent). For cases with an adjusted verdict larger than $2.5 million, 98 percent of plaintiffs received a haircut with a mean (median) per-case haircut of 56 percent (61 percent). Insurance policy limits are the most important factor in explaining haircuts. Caps on damages in death cases and caps on punitive damages are also important, but defendants often paid substantially less than the adjusted allowed verdict. Remittitur accounts for a small percentage of the haircuts. Punitive damage awards have only a small effect on payouts. Out-of-pocket payments by physicians are rare, never large, and usually unrelated to punitive damage awards. Most cases settle, presumably in the shadow of the outcome if the case were to be tried. That outcome is not the jury award, but the actual post-verdict payout. Because defendants rarely pay what juries award, jury verdicts alone do not provide a sufficient basis for claims about the performance of the tort system.

I. Introduction

Juries and jury verdicts occupy center stage in the political debate over tort reform and in academic analyses of the tort system. In the political arena, critics claim that juries are out of control and out of their depth, periodically dispensing unjustified blockbuster verdicts, especially against defendants with deep pockets. These critics argue that this "lawsuit lottery" encourages defendants to settle even nonmeritorious cases, and imposes a sizeable "tort tax" on the economy. Conversely, defenders argue that juries generally "get it right," and that blockbuster verdicts are rare and often reduced by judicial oversight. Both sides support or oppose reforms based on their differing views of how juries behave. In like fashion, legal scholars assume that most cases are resolved in the shadow of what a jury would award, and an extensive literature models litigation and settlement decisions in the shadow of trial outcomes.

Thus, jury verdicts are used as the principal endpoint in both the political debate over tort reform and in academic analyses of litigation and settlement dynamics. As one set of scholars explained, "jury trial verdicts form the basis of what we think we know about tort litigation."[1]

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[1]Ostrom et al. (1992–1994:97, 98).

However, using jury verdicts as the relevant endpoint can be mislead-
ing if post-verdict payouts differ significantly from jury awards. Downward
departures can result from judicial oversight (remittitur, judgment notwith-
standing the verdict (jnov), and appellate reversal), statutory damages caps,
and settlement dynamics (which are influenced by limits on collectibility).
Upward departures can result from prejudgment and postjudgment interest,
and settlement dynamics. Whatever the sources of these adjustments, poli-
cymakers should factor them into their assessments of the performance of
the tort system, and academics should consider them in analyzing litigation
and settlement behavior. In particular, we would expect cases to settle in the
shadow of what the plaintiff can expect to collect if the case is tried—not
solely in the shadow of the expected jury award.

Past studies of post-verdict adjustments and payouts are limited. Most
focus on judicial review of the verdict, and provide limited information on
actual payments by defendants and their insurers. Most past studies also
cover a limited time period and use data that are subject to sample selection
bias, typically hand-gathered from jury verdict reporters, court dockets, and
surveys.[2]

We employ a unique data set of all closed insured Texas medical
malpractice claims from 1988–2003 with payout over $25,000 to study jury
verdicts and the frequency, size, and reasons for differences between jury
awards and payouts.[3] We find that post-verdict payouts fall substantially short
of both "adjusted verdicts" (jury awards plus prejudgment and postjudgment
interest), and "adjusted allowed verdicts" (adjusted verdicts less the effects of
damage caps and remittitur). Stated differently, although jury verdicts and
payouts are correlated, most jury verdicts receive a substantial "haircut" when
they are paid by the defendant. In particular, we find that (amounts in 1988
dollars):[4]

- Of 306 jury trials with plaintiff verdicts, 228 cases (75 percent) had
  payment less than the adjusted verdict, 62 cases (20 percent) had

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[2]See Section II for a summary of previous studies.

[3]This article is one of a series based on the Texas database. Other papers include Black et al.
(2005); Zeiler et al. (forthcoming).

[4]Unless otherwise indicated, all dollar amounts are in 1988 dollars; computed using the Con-
sumer Price Index for All Urban Consumers (annual average) as a price index. Source:
www.bls.gov/cpi/. To convert to 2006 dollars, multiply by 1.71.

payment roughly equal (±2 percent) to the adjusted verdict, and 16 cases (5 percent) had payment greater than the adjusted verdict. Across all 306 cases, plaintiffs with total adjusted verdicts of $482 million received payouts of $212 million, for an aggregate haircut of 56 percent. The mean (median) per-case haircut was 29 percent (19 percent).[5]

- The larger the adjusted verdict, the more likely and larger the haircut. In cases with adjusted verdicts of less than $100,000, 47 percent of plaintiffs (25/53) received a payout less than the adjusted verdict, with a mean (median) per-case haircut of 8 percent (2 percent). In contrast, in cases with adjusted verdicts over $2.5 million, 98 percent of plaintiffs (44/45) received a payout greater than the adjusted verdict, with a mean (median) per-case haircut of 56 percent (61 percent). Haircuts are present in cases involving all types of defendants, including physicians, hospitals, and nursing homes.

- Judicial oversight (remittitur, jnov, and appellate reversal) directly affected 5 percent of the plaintiff verdict cases (19 of 306 cases—15 remittitur, 3 jnov, 1 appellate reversal of a plaintiff verdict), and can explain roughly 3 percent of the aggregate haircut.[6] Statutory caps on damages in death cases directly affected 40 percent of death cases (26/66) and can explain roughly 14 percent of the aggregate haircut. Statutory caps on punitive damages directly affected 23 percent of cases with punitive damage awards (5/22) and can explain roughly 16 percent of the aggregate haircut. Thus, 67 percent of the aggregate haircut is attributable to factors other than the direct effects of judicial oversight and statutory damage caps.

- These estimates likely overstate the direct impact of judicial oversight and damage caps in explaining haircuts. Of the 42 cases in which remittitur or damage caps applied, defendants paid less than 90

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[5]"Adjusted verdict," "haircut," and selected other terms used in this article are defined in the glossary in Appendix C. We treat payout as equal to adjusted verdict if it is within ± 2 percent of the adjusted verdict in determining the number of "equal verdict" (zero haircut) cases. However, we compute haircut on a case-by-case basis, so some "equal verdict" cases will have small positive haircuts (2 percent or less).

[6]Cases involving jnov or appellate reversal following a plaintiff verdict will drop out of our sample unless later settled for $25,000 or more.

percent of the adjusted allowed verdict in 25 cases.[7] These outcomes suggest that much of the portion of the adjusted verdict that was "disallowed" by remittitur and damage caps might not have been collected in any event.

- Post-verdict settlements were often at or below policy limits even when the adjusted verdict exceeded these limits. In the 214 "single-payer" cases for which we have data on policy limits, we estimate that policy limits explain at least 73 percent of the aggregate haircut ($71 million/$97 million). In single-payer cases with adjusted verdicts that exceeded the policy limits, 92 percent (71/77) received a haircut.
- Haircuts were reasonably common even for adjusted allowed verdicts that were within policy limits. A bit over half (77/137: 56 percent) of single-payer cases with adjusted allowed verdicts within policy limits received a haircut. The haircuts in these cases were generally smaller in percentage terms than haircuts in above-limits cases, but still accounted for approximately 9 percent of the aggregate dollar haircut in single-payer cases.
- There was a trend toward larger haircuts over time.
- In tried cases with pro-plaintiff verdicts, out-of-pocket payments by physicians were rare, usually small, and usually unrelated to punitive damage awards. There were nine cases in which physicians made out-of-pocket payments, generally because an award exceeded policy limits, plus three cases in which physicians paid small deductibles.
- In 59 cases, plaintiffs recovered more than the adjusted verdict; of these, 43 involved a defense verdict, and 16 involved a plaintiff verdict. In the defense verdict cases, plaintiffs recovered a mean (median) of $206,000 ($137,000). In the plaintiff verdict cases, plaintiffs recovered a mean (median) of $69,000 ($27,000) in excess of the adjusted verdict.

A principal conclusion from our research is that studying jury verdicts without also studying post-verdict haircuts gives a misleading picture of the overall performance of the tort system. So does studying damage caps and judicial oversight without attending to policy limits and other sources of haircuts. The tort reform debate has thus been based on incomplete information. Proposed reforms should take into account the gap between payouts

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[7]The total of 43 includes four cases in which both remittitur and a death cap affected the adjusted allowed verdict.

and verdicts, which is especially important when verdicts are large. The academic literature on how jury verdicts affect claiming and settlement decisions also needs to take post-verdict haircuts into account.

Section II describes previous studies of post-verdict adjustments and payouts and summarizes the limitations of these studies. Section III describes the Texas medical malpractice closed claim data we employed in our study. Section IV outlines our basic findings on jury outcomes. Section V discusses our results on the differences between payouts and adjusted verdicts. Section VI discusses some implications of our research. Section VII concludes.

II. Past Research on Post-Verdict Adjustments and Payouts

The empirical literature on post-verdict adjustments and payouts includes a number of articles and reports, and one monograph.[8] News reports on the subject have also appeared, but they tend to concentrate on individual high-profile cases.[9] Table 1 summarizes the existing empirical literature, with larger studies (more than 100 payouts) listed first, followed by smaller studies, and finally the present study.

These studies suggest that plaintiffs often collect less than the jury awards, particularly for large verdicts. Unfortunately, these studies have numerous limitations, including spotty information on actual payments, reliance on surveys or jury verdict reporters (which are incomplete and subject to sample selection bias), restricted samples (whether in number of cases, size of sampled verdicts, or number of years), failure to adjust for inflation and interest, and failure to analyze the various sources of haircuts. A majority are based on reported post-verdict adjustments by courts, not actual payouts. Appendix A provides more detailed information on each study. The present study is the most comprehensive longitudinal analysis of

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[8]Some additional research discusses the dynamics of the post-verdict period, but does not quantify post-verdict discounts. See Ostrom et al. (1992–1994); Vidmar (2002b).

[9]See, e.g., Hallinan (2004:A1) ($111 million verdict, but $6 million payment because of high-low agreement); Fisk (1998) ("Large jury verdicts are frequently no more than an illusion. With relatively rare exceptions, verdicts are cut back, thrown out, settled for dramatically less than the original amount. Or they are awarded against people or entities with little or no money to pay them. The larger the verdict, the more likely trial and appellate courts will whittle it down or erase it. But smaller awards, too, face a minefield in the post-verdict process.").

Table 1: Summary of Past Research on Post-Verdict Adjustments and Payouts

Author	Period	Jurisdiction	Case Size	Case Type	No. of Verdicts (Source)	Known Post-verdict Adjustments (Source)	Actual Payouts Known? (Source)	Adjust for Inflation?	Analyze Haircut Sources?	Haircut (Mean or Range)
Vidmar, Gross & Rose (1998–1999)	1985–1997	NY, FL, CA	All	Med mal	805 (JVR)[c]	215 (JVR)	No	Yes	No	7–38%
Broder (1986)	1984–1985	All	>$1 million verdicts	Various	472 (JVR)	198 (surveys)	Yes (surveys)	No	No	31–57%
Shanley and Peterson (1983)	1982–1984	IL, CA	All	Various	747 (JVR)	456 (surveys)	Yes (surveys)	No	No	7–43%
Vidmar, MacKillop & Lee (2006)	1990–2003	FL	>$1 million verdicts	Med mal	50 (hand-collect)	54 FL database	Yes	No	No	33%
Vidmar, Robinson & MacKillop (2006)	1992–2004	IL[a]	All	Med mal	45 (JVR)	12 (JVR)	No	No	No	42%
Viscusi (2004)	1985–2002	All	>$100 million punitives	Various	64 (JVR)	10 (JVR)	No	No	No	76%
Merritt and Barry (1999)	1985–1996	OH	All	Med mal and product liability	43 (JVR)	5 (JVR)	No	No	No	25%
Vidmar (2002a)	1999–2001	PA[b]	>$5 million verdicts	Med mal	202 (PA fund)	22	Yes	No	No	78%
This study	1988–2003	TX	>$25,000 payout (1988$)	Med mal	306 (TX database)	306	Yes	Yes	Yes	29%

[a]Covering Cook and DuPage Counties for 2001, and Madison and St. Clair Counties from 1992–2004.

[b]The information was obtained from the PA CAT Fund, a state-run excess insurer.

[c]This abbreviation refers to a series of commercial reporters that hand-collect jury verdicts; for some verdicts, the verdict report also provides information on post-verdict adjustments. However, these reporters rarely include information on actual payments.

post-verdict payouts. It is the only study to quantify the comparative impact of judicial oversight, damage caps, and insurance policy limits on payouts.

III. Data Source and Methodology

A. Data Source

The Texas Closed Claims Database (TCCD) is a publicly accessible database containing reports of closed personal injury claims covered by mono-line general liability, commercial auto liability, commercial multiperil, medical professional liability, and other types of professional liability insurance. We describe this database in an earlier article, but summarize relevant parts of that discussion here.[10] The TCCD contains individual reports of all insured medical malpractice claims involving payouts by all defendants of more than $10,000 in nominal dollars closed between 1988 and 2003. A "claim" is an incident causing bodily injury and resulting in a request to an insurer by a policyholder for coverage. An insurer must file a report with the Texas Department of Insurance (TDI) in the year a claim "closes," that is, when the insurer "has made all indemnity and expense payments on the claim."[11] When total known payments to a claimant by all defendants equal $25,000 (nominal) or more, the primary carrier for each defendant must complete a "Long Form" that includes extensive description of the claim's characteristics and history. When total payments are $10,001–24,999 (nominal), each primary carrier must complete a somewhat less extensive "Short Form" that omits various data, including the cause of injury.[12] When total payments are $10,000 (nominal) or less, the primary carrier files an aggregate annual report that does not provide any case-specific information. We use information on the cause of injury in order to determine whether a claim involved medical malpractice. Thus, we rely only on Long Form claim reports.

We convert all payouts to 1988 dollars using the Consumer Price Index for All Urban Consumers (CPI) and study jury verdict cases with payout of at

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[10]Black et al. (2005).

[11]TDI (2004:18).

[12]The *TDI Closed Claim Reporting Guide* (containing reporting instructions), the Long and Short Forms, a summary "Closed Claim Annual Reports," and the core data on which we rely are available at ⟨http://www.tdi.state.tx.us⟩. In some cases, the online data were incomplete and we used information provided to us directly by TDI.

least $25,000 in 1988 dollars (roughly $43,000 in 2006 dollars).[13] In 1990, TDI implemented a procedure to check each report for internal consistency and reconcile individual reports with insurer-level aggregate annual reports. TDI has acknowledged potential problems with reporting completeness and consistency in 1988 and 1989. We have no reason to believe these problems bias the sample of jury verdict cases that we study. In robustness checks, we obtain similar results if we exclude 1988–1989 from our sample period, except as specifically noted below.

Medical malpractice cases often involve multiple defendants and multiple insurers. Beginning in 1991, TDI sought to identify multiple reports relating to the same incident (duplicate reports), but its approach is imperfect. In particular, TDI does not identify reports as duplicates if they were filed in different years, even if they relate to the same incident. To identify duplicate reports for 1988–1990, to correct for TDI's underidentification of duplicate reports, and to correct other reporting errors, we reviewed each report involving a jury verdict and made a small number of adjustments to particular reports.[14] When two reports relating to the same claim were filed in different years by insurers for different defendants, we designated the last-closed claim report as the primary report. Except when we assess defendants' out-of-pocket payments, our analysis relies on the primary reports.

Identifying claims involving medical malpractice is more complicated than one might expect. The TCCD offers several plausible ways of identifying

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[13]The reporting thresholds are not inflation adjusted. Thus, some claims that are individually reported on the Long Form in later years would have been reported on the Short Form in earlier years. To address this "bracket creep," we exclude from the sample eight jury verdict cases with real payouts by all defendants between $25,000 nominal and $25,000 real.

[14]In identifying duplicate reports, we sometimes exercised judgment when claim reports were similar but not identical. The exact procedure we used to identify duplicates is available on request. Insurers also make some reporting errors that TDI does not catch. In a few cases when both the error and the needed correction were apparent, we corrected the underlying data. For example, one report apparently combined pre- and postjudgment interest and reported both as prejudgment interest. The reported prejudgment interest amount was absurdly high as prejudgment interest alone, but matched closely the amount that should have been paid as both pre- and postjudgment interest based on the statutory rate for each. In another report, the claim was classified as involving a physician, when other information indicated it was against a nursing home; the physician was the medical director of the nursing home but had not treated the plaintiff. We treated this case as involving a nursing home. One report had a policy limit of $10,300 but the primary carrier paid $975,000 (in nominal dollars); we concluded that the reported limit was probably an error and treated the policy limit as missing. A list of the adjustments we made to the data is available on request.

medical malpractice claims based on the type of insurance, the defendant, and the cause of harm. In a previous article, we generally relied on a broad definition of "medical malpractice claims" that included all nonduplicate "large" claims (claims with payouts exceeding $25,000 in 1988 dollars) that were paid under medical professional liability insurance *or* were against a health-care provider (physician, hospital, or nursing home) *or* involved injuries caused by complications or misadventures of medical or surgical care, and did not involve dentists or oral surgeons.[15] We called the resulting data set *BRD* cases, but verified in robustness checks that we obtained similar results with narrower definitions.

For this study, we reviewed each report involving a jury verdict and concluded that some *BRD* cases were not medical malpractice cases.[16] We therefore constructed a more restricted data set of verdicts, which we call *BRD_minus*. To be included in *BRD_minus*, a case had to satisfy two of the three criteria outlined in the previous paragraph (paid under medical professional liability insurance; against a health-care provider; involved injuries caused by complications or misadventures of medical or surgical care), or satisfy one of the criteria with other information indicating that it was a medical malpractice case.[17] The *BRD_minus* data set includes 361 cases tried to verdict, of which 349 (roughly 22 per year) were tried to a jury, and 12 (0.75 per year) were tried to a judge.

During the period we study, Texas law contained three caps on damages in medical malpractice cases—a cap on the sum of damages plus prejudgment interest in wrongful death cases (death cap),[18] a cap on punitive damages (punitives cap), and a cap on all damages for cases involving

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[15]Black et al. (2005). A number of other types of health-care providers (e.g., nurses and freestanding medical clinics) are not separately listed in the reporting form, so we cannot study them.

[16]For example, the *BRD* data set includes cases in which physicians or hospitals were defendants because the physician, or someone working for the hospital, was involved in an automobile accident.

[17]For example, cases against nursing homes involving falls that were paid by a "mono-line general liability" or "other professional liability" policy satisfied only one of the three criteria (health-care provider as defendant) but we treated them as medical malpractice cases. For the full data set, not limited to jury verdicts, it is not feasible to examine each case, so we define the BRD_minus data set using the two-out-of-three rule.

[18]The damages cap on wrongful death applies to all medical malpractice cases in which the plaintiff died. Rose v. Doctors Hosp., 801 S.W.2d 841 (Tex. 1990). We assumed that the cap also

public hospitals. The death cap was approximately $975,000 in 1988 dollars; it was indexed for inflation but otherwise did not change during our sample period.[19] A total of 66 jury verdicts involved wrongful death claims; of these, 26 involved adjusted verdicts that exceeded the death cap.[20]

Texas law caps punitive damages and provides that these damages are available "only if the claimant proves by clear and convincing evidence that the harm with respect to which the claimant seeks recovery of exemplary damages results from: (1) fraud; (2) malice; or (3) gross negligence." The punitives cap was modified by the Texas Legislature in 1995. For cases filed before September 1, 1995, the cap was the greater of (1) $200,000 or (2) (4 × compensatory damages). For cases filed after September 1, 1995, the cap was the greater of (1) $200,000 or (2) [(2 × economic damages) + (the lesser of noneconomic damages or $750,000)].[21] Punitive damages were awarded in 22 jury verdict cases; of these, six awards exceeded the cap.

The cap for public hospitals is $250,000 (nominal). This cap covers all damages, including economic damages, and is not adjusted for inflation. We cannot assess the importance of this cap because we lack information on which hospital-defendants in our data set benefited from the cap.[22]

B. Data Set Limitations

TDI requires insurers to report economic, noneconomic, and punitive damages and prejudgment interest based on what TDI calls the "court verdict."[23] In Texas jury cases, the *jury* completes a verdict form in which it determines economic, noneconomic, and punitive damages. The *judge* either accepts these figures or reduces them (through remittitur, applying a

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applied in cases closed in 1988–1990, prior to this decision. There were three cases in this period with awards exceeding the death cap.

[19]Tex. Rev. Civ. Stat. Ann. art. 4590i, §§ 11.02, 11.04 (West Supp. 1998).

[20]The death cap is calculated on a per-defendant basis. We used the one-defendant cap level, which may to overstate the impact of the cap in explaining haircuts.

[21]Tex. Civ. Prac. & Rem. Code Ann. § 41.003 (standard for awarding punitive damages); id., § 41.008 (West 1997) (post-1995 cap); id., § 41.007 (West 1991) (repealed 1995) (prior cap).

[22]See Texas Civil Practice & Remedies Act § 101.023(a) (limiting damages to $250,000 for each defendant and $500,000 for each occurrence for bodily injury or death). This cap was enacted in 1985, so it was in effect throughout the period we study.

[23]TDI (2004:Long Form and Short Form, Question 11b1).

damages cap, or perhaps both), and then adds prejudgment interest to arrive at a "judgment," which typically indicates the amount of prejudgment interest and the total judgment amount, but does *not* contain a breakdown of economic, noneconomic, and punitive damages. Thus, as a practical matter, insurers had to look at the jury verdict to determine the amount of economic, noneconomic, and punitive damages, and at the court judgment to determine prejudgment interest and any remittitur. Roughly 35 percent of the jury verdict reports omit prejudgment interest. One likely reason for the omission is that the insurer reported information only from the jury verdict form.[24] TDI does not ask insurers to report postjudgment interest.

We estimated prejudgment interest for the cases where it was not reported and computed postjudgment interest for all cases, relying on the statutory rules for pre- and postjudgment interest. We can only estimate prejudgment interest because the applicable rules in some cases require information (e.g., the date and amount of a pretrial settlement offer by the defense) that we do not have. We believe our estimates are reasonable on average, but they may be somewhat high or low in any individual case. Appendix B provides details on our calculations. We then compute an "adjusted verdict" for each case, which equals the sum of damages (as reported by the insurer) + prejudgment interest (reported or estimated) + computed postjudgment interest. The adjusted verdict is the amount to which a plaintiff is legally entitled, before taking into account remittitur and statutory caps. In robustness checks, we verify that cases with and without reported prejudgment interest otherwise appear similar, and obtain similar results for the full sample of 306 cases, if we assume prejudgment interest = 0 for the 104 cases where it is not reported.

An important limitation of the TCCD is that insurers complete Long Forms only if the plaintiff receives at least $25,000. Thus, we have limited data on trials that result in defense verdicts, jnov cases, and cases where a plaintiff verdict is reversed on appeal. Most of these cases drop out of our data set. A (likely nonrepresentative) minority of these cases, in which the plaintiff nonetheless recovers at least $25,000 despite losing at trial or on appeal, remains in the data set.

Each report includes policy limits only for the insured defendant, and includes limits only for the primary policy covering that defendant. We do

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[24]We address other possible reasons in Section V. If the insurer reported information only from the jury verdict form, the insurer might also fail to report a remittitur. Our results would then understate the role of remittitur in explaining haircuts.

not know which defendants had excess policies, except for the cases where a payout on an excess policy was made. Even then, we do not know the limits on the excess policy. Thus, we have a good measure of the directly relevant policy limits only for "single-payer" cases in which only one defendant paid damages (even if more than one was sued) and there was no payment by an excess carrier. These cases are, on average, smaller than multipayer cases, and hence not representative of all cases. We report regressions with policy limits as an independent variable only for single-payer cases.

The TCCD includes only "insured" claims. This includes claims paid by captive insurers and risk-pooling and risk-retention groups. It does not include claims against "pure" self-insured providers (which do not rely on captives or risk pooling). Most physicians carry malpractice insurance, but many hospitals do not. We lack data on claims against the University of Texas (UT) hospital system and on claims against UT-employed physicians. The UT hospital system is self-insured, and UT-employed physicians are insured by the UT system. Thus, our data set likely captures most trials in which physicians make payments, but a smaller and unknown fraction in which the payers are hospitals and other providers. We have no reason to believe that the fraction of "missing" trials changes over time as a percentage of the total.

The TCCD reports whether a case was appealed, but does not specify whether the appeal was heard or, if so, the outcome. Many cases are likely appealed but then settled before the appeal is heard. Due to these data limitations, we do not analyze the effect of appeal on post-verdict outcomes.

We use the last-closed claim report as the primary report. This report should capture any prior payouts by parties that were not required to file closed claim reports, such as self-insured hospitals. We may not capture all payouts by nonreporting defendants, either because the insurer that filed the last report was unaware of these payments or because the nonreporting defendant had not yet paid when the last report was filed. Of the 306 plaintiff jury verdict cases in our data set, reports for 12 indicate that other defendants were still in litigation.

We do not have data on the identities of particular defendants, on physician specialties, or on injury severity.

C. Summary Information on Our Data Set

Table 2 provides summary statistics on our data set.

As Table 2 reflects, during 1988–2003, approximately 5 percent of closed paid claims in our data set went to trial, of which almost half settled during trial. The actual fraction of cases that settled during trial is lower than

Table 2:   Summary Statistics on Claims, Trials, and Jury Verdicts

	Jury	*Judge*	*Total*
Total nonduplicate BRD_{minus} claims			13,269
Cases settled during trial with payout of $25,000 or more (% of BRD_{minus} claims)	316 (2.28%)	13 (0.10%)	329 (2.38%)
Completed trials with payout of $25,000 or more (% of BRD_{minus} claims)	349 (2.63%)	12 (0.09%)	361 (2.72%)
Completed trials with plaintiff verdicts	306	9	315
Mean no. of plaintiff verdicts per year	19.1	0.6	19.7
Mean (median) damages award	$1,247 ($319)	$1,922 ($1,010)	$1,267 ($320)
Mean (median) adjusted verdict	$1,576 ($433)	$2,618 ($1,296)	$1,606 ($445)
Mean (median) payout	$692 ($259)	$658 ($258)	$691 ($259)
Plaintiff Jury Verdict Cases with			
Single paying defendant, single insurer ("single-payer" cases)			215
"Multipayer" cases (two or more paying insurers or defendants)			91

NOTE: Total claims, claims in which trial was begun, completed trials, and completed trials with plaintiff verdicts, included in the BRD_{minus} data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Completed trials include 46 cases with defense verdicts. Damages = economic + noneconomic + punitive damages. Adjusted verdict = damages + prejudgment and postjudgment interest. Mean (median) amounts are for completed trials with plaintiff verdicts, in thousands of 1988 dollars.

this, since most medical malpractice trials end in defense verdicts, and most defense verdicts drop out of our data set.[25] Almost all trials involve juries. Because bench trials are too infrequent for us to perform meaningful statistical analysis on them, and the tort reform debate centers on juries, we concentrate on the 306 jury trials that result in plaintiff verdicts.[26] As Table 2 indicates, 215 of these cases were single-payer cases; 91 were multipayer cases. Of the 91 multipayer cases, 80 involved two or more paying defen-

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[25]See, e.g., Cohen (2004) (plaintiffs won in 26 percent of medical malpractice jury trials).

[26]The payouts in our small sample of judge trials are consistent with other research suggesting that juries are not more generous than judges in medical malpractice cases. See, e.g., Cohen (2004); Eisenberg et al. (2006).

dants, while 11 involved a single paying defendant with payment by an excess insurer.

D. *Implicit Model and Statistical Methodology*

Below, we present various ordinary least squares (OLS) regression analyses of time trends, and the factors that are correlated with verdicts, payouts, and haircuts. Our implicit model of the claims-generating process is that people have some number Y of medical encounters per year, of which a fraction f lead to a malpractice claim, of which a further fraction g lead to a complete trial. A fraction h of completed trials produce plaintiff verdicts, of which a fraction i are included in our data set (a case will be included if it involves an insured defendant and a payout over $25,000). The remaining fraction $(1-h)$ of completed trials produce defense verdicts, of which a fraction k are included in our data set (a case will be included if it involves an insured defendant and, despite the defense verdict, a payout greater than $25,000). We expect the fraction of plaintiff verdicts included in our data set to be close to 1. The fraction of included defense verdicts will be substantially smaller.

     The number and nature of medical encounters can vary across time. The fractions of these encounters that lead to claims, trials, plaintiff verdicts, the fraction of verdicts included in our data set, damages, and payout can vary across time and with the nature of the encounter, the characteristics of the plaintiff and defendant, and the defendant's insurance coverage. We treat the plaintiff (defense) verdicts in our data set as resulting from independent draws from a pool of encounters, each of which produces a plaintiff (defense) verdict included in the data set with probability $(f \cdot g \cdot h \cdot i)$ $[(f \cdot g \cdot (1-h) \cdot k)]$. We observe $Y \cdot f \cdot g \cdot h \cdot i$ plaintiff verdicts (and $Y \cdot f \cdot g \cdot (1-h) \cdot k$ defense verdicts) in our data set, and the jury verdict and payout amount in each, but have no information about the component parts of these numbers, nor about verdicts or expected damages in the cases that drop out of our data set.

     For regressions involving adjusted verdicts, payouts, and haircuts, we assume that, apart from a possible time trend, each defendant's choice of coverage limits is independent of other defendants' choices, each jury verdict is independent of other verdicts, and each haircut is independent of other haircuts. These assumptions will not be strictly true. In particular, (1) lawyers may adjust their trial tactics and which cases they choose to take to trial based on prior success or failure; and (2) physicians may choose policy

limits based on what other physicians do. Any cross-sectional dependence should be partly captured, however, by our year control variable. There is no evidence of autocorrelation across time.[27]

The distributions of adjusted verdict and payout have a strong positive skew. Regressions with one of these variables as the dependent variable are often skewed as well, and thus violate the usual normality-of-errors assumption of OLS. We address this concern in our regressions as follows. We remove two outlier multipayer verdicts and, in regressions limited to single-payer cases, one outlier single-payer verdict. These cases have large haircuts, so removing them biases against our main results. We then generally take the natural log of adjusted verdict, payout, and policy limits. The distributions of the logged amounts come respectably close to being normal.[28] Even so, residuals for the regressions reported below are often not normally distributed. We address heteroskedasticity of the residuals by using White's robust standard errors in all regressions. However, skewness in the residuals and outlier residuals may still affect our standard errors or their interpretation. We perform robustness checks using robust regression techniques, which reduce the weight given to outlier observations.[29] Except as discussed below, the results are similar to those we report using the standard OLS model. Except as noted below, regressions using nonlogged dependent variables are similar to the results using logged variables that we report.

For regressions with year as an independent variable, we make no claim that year causally explains anything; instead, year is a proxy for changes in the world that have a time trend. For regressions that analyze the relationship among different components of damages, we report associations but make no claim as to causation.

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[27]A Durbin-Watson test failed to reject the null hypothesis of no serial auto-correlation in yearly mean and median ln(adjusted verdict), ln(payout), and haircut for the plaintiff jury verdicts in our sample.

[28]The most troublesome variable is adjusted verdict. For ln(adjusted verdict), skewness (kurtosis) = 0.18 (2.43) for all cases and 0.24 (2.46) for single-payer cases. A Shapiro-Wilk test rejects normality of ln(adjusted verdict) at $p = 0.02$ (0.04) for all (single-payer) cases, but cannot reject normality of either ln(payout) or ln(policy limits) at $p = 0.05$.

[29]See Berk (1990). Except as discussed below, the results were similar to those we report.

We define "haircut" as a nonnegative fraction of the adjusted verdict:[30]

$$haircut = \max\left\{0, 1 - \frac{payout}{adjusted\ verdict}\right\}. \tag{1}$$

In analyses of the factors that explain haircut size, we generally limit the sample to 290 jury verdicts with a payout greater than the adjusted verdict (positive haircut) or a payout equal to the adjusted verdict (zero haircut). In counting the number of cases with positive haircut, zero haircut, or a verdict bonus (payout greater than the adjusted verdict), we treat cases with payout within ±2 percent of the adjusted verdict as zero-haircut cases. In regressions with haircut as a dependent or independent variable, we compute the exact haircut for each case using Equation (1).

OLS regression techniques do not produce correct coefficients or standard errors for regressions with haircut as a dependent variable because the distribution of haircut has many small or zero values, and a few large values. As a result, the residuals also have a strong positive skew. We return to this problem below.

We define the "aggregate haircut" for a group of cases as the dollar or fractional reduction in total payout for these cases, relative to the total adjusted verdict. Let i index cases. Then:

$$aggregate\ \textit{fractional}\ \text{haircut} = 1 - \frac{\sum_i payout_i}{\sum_i adjusted\ verdict_i} \tag{2}$$

$$aggregate\ \textit{dollar}\ \text{haircut} = \left(\sum_i adjusted\ verdict_i - \sum_i payout_i\right). \tag{3}$$

IV. BASIC FINDINGS ON JURY OUTCOMES

A. Time Trends

Figure 1 indicates that although there is some year-to-year volatility, there are no obvious time trends in the percentage of paid claims resolved by a jury

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[30]In some cases, we measure haircut relative to the adjusted *allowed* verdict (measured after the effects of damage caps and judicial oversight), rather than the adjusted verdict. The definition is similar to that in text.

Figure 1: Time trends in percentage of total payout and total number of cases represented by jury verdict cases.
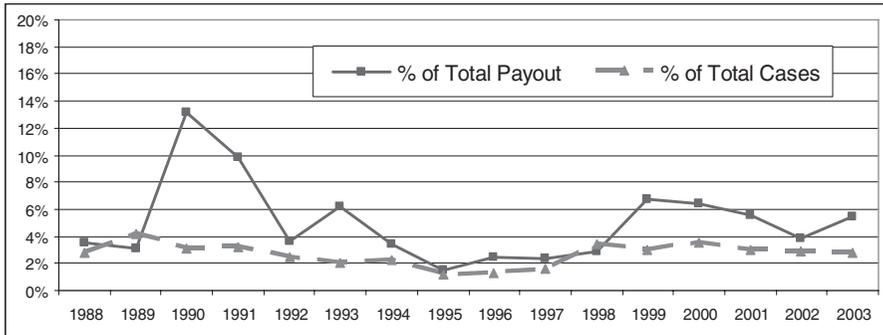
NOTE: Percentage of total cases, and percentage of total payout represented by jury verdict cases (including defense verdict cases), in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars.

trial or the percentage of claim dollars that are paid as the result of such a trial. Figure 1 includes cases in which payment followed a defense verdict, but would be similar if we exclude these cases.

Regression analysis confirms that there was no apparent time trend in the probability of a paid claim being resolved by a jury trial, or in payouts after a plaintiff verdict as a percentage of all payouts during each year.

As in our earlier study, there was considerable year-to-year fluctuation in mean and median verdicts, but no apparent time trends. There is also no significant time trend in the variance of verdict amounts around the mean. Figure 2 shows mean (top line) and median (bottom line) adjusted verdicts for all plaintiff verdict cases, as well as mean adjusted verdict excluding the 10 largest cases (middle line). The large difference between mean and median adjusted verdicts is consistent with other studies of medical malpractice outcomes.[31] The median is more stable than the mean, but also varies substantially. Excluding the 10 largest cases substantially dampens year-by-year fluctuation in the mean adjusted verdict and significantly narrows the spread between the mean and median. This reflects the strong influence of a small number of very large verdicts on the mean verdict.

Table 3 reports the results of a regression analysis of time trends in per-case ln(adjusted verdict) and ln(payout). In all regressions, year is coded

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[31]See Black et al. (2005); Cohen (2004).

Figure 2:   Mean and median adjusted verdicts over time.
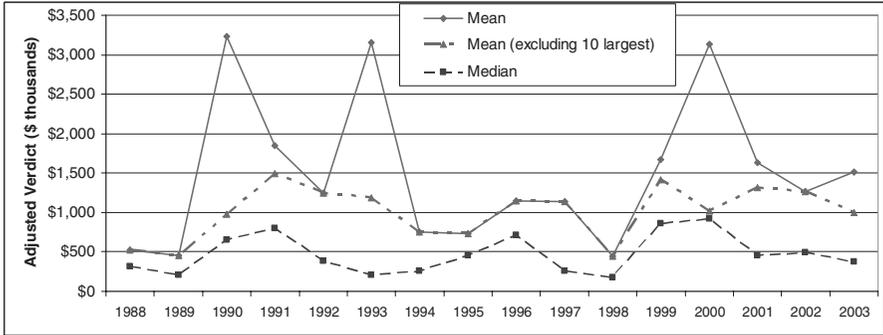
NOTE: Annual mean (all cases), mean (excluding 10 largest cases), and median adjusted plaintiff jury verdicts for the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Amounts in thousands of 1988 dollars. The excluded cases have adjusted verdicts of $8.3 million (1988$) more.

as (year − 1988). This does not affect the coefficient on year, but allows the constant term to be economically meaningful. We obtain similar results using a nonparametric test for trend.[32]

Assessing whether jury awards have changed over time is difficult because verdicts are highly variable, highly skewed, and limited in number. Performing a log transformation of verdicts reduces but does not eliminate the skewness in the distribution. A regression of ln(adjusted verdict) on year (Regression 1) produces a point estimate of 3.0 percent per year, which is economically meaningful and marginally significant. However, this result is not robust. The point estimate drops to 2.5 percent per year and becomes statistically insignificant for the NAR data set, and drops to 0.4 percent per year (insignificant) in a robustness check that excludes 1988–1989 (when reporting was known to be incomplete).

A similar regression with ln(payout) as the dependent variable (Regression 2) produces a statistically insignificant point estimate of 1.3 percent per year. This coefficient remains insignificant in alternate specifications. The lower coefficient on year for ln(payout), compared to ln(adjusted verdict), is consistent with the evidence we report below on increasing haircuts over time.

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[32]See Cuzick (1985), implemented in Stata as nptrend. This test produces *z* statistics of 1.97 for Regression 1 and 1.25 for Regression 2.

Table 3:   Time Trends in Jury Verdicts and Payouts—Plaintiff Jury Verdicts with Payout > $25,000

	Regression		
	1		2
Dependent Variable	ln(adjusted verdict)		ln(payout)
Year	0.030		0.013
	(1.78)*		(0.85)
Constant	12.79		12.47
	(77.03)		(84.77)
N	304		304
Adjusted R^2	0.0099		0.0023

NOTE: Regression of ln(adjusted verdict) and ln(payout) for trials with plaintiff verdicts in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Regressions exclude two outlier cases with large punitive damage awards. Amounts in thousands of 1988 dollars. t statistics, based on robust standard errors, are in parentheses. * indicates significance at the 10 percent level (significance suppressed for constant term).

In sum, there is weak evidence of a possible upward time trend in jury awards, but we do not find evidence that jury awards are rapidly escalating. There is no evidence of a time trend in payouts after a jury verdict or in the number of jury verdicts (regression results not reported).[33]

B. Defendants

Table 4 provides summary statistics on the defendants who made payments in our BRD$_{minus}$ data set. Roughly 70 percent of jury verdicts in our data set involve a single paying defendant, most often a physician.[34] Table 4 also

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[33]These findings are consistent with those reported in our earlier article, which covered 1988–2002. See Black et al. (2005).

[34]Researchers have speculated that the need for physicians to report settlements to the National Practitioner Data Bank could make them reluctant to settle. See Waters et al. (2003). We find no evidence that cases against physicians are more likely to be tried than other cases. If physicians are more likely than other defendants to insist on trial, and if plaintiff success rates are similar against different types of defendants (which we cannot test with our data), the fraction of plaintiff verdicts in "physician-only" cases (in which the only defendants are one or more physicians) should exceed the fraction of such cases in the full BRD$_{minus}$ data set, which includes all cases. In fact, these fractions are similar, at (106/306 = 35 percent) for completed trials and (4,479/13,269 = 34 percent) for all cases.

Table 4: Defendant Configuration in Jury Verdict Cases—Plaintiff Verdict Cases with Payout > $25,000

	Plaintiff Verdict	*Defense Verdict (with Payout)*	*Total Cases with Payout*
Single-Payer Cases			
One physician	100	17	117
One hospital	18	1	19
One nursing home	14	0	14
Other single defendant	79	9	88
Subtotal single-payer cases	215	27	242
Multipayer Cases			
Two or more physicians	6	3	9
Physician and hospital	50	6	56
Other multipayer (includes single defendant with payment by two insurers)	39	7	46
Subtotal multipayer cases	91	16	107
Total	306	43	349

NOTE: Completed jury trials involving different types of defendants for the BRD_{minus} data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. "Two or more physician" cases have only physicians as defendants. Physician and hospital cases have one or more physicians and one or more hospitals as defendants.

documents a surprising fact: approximately 12 percent of the payments in the BRD_{minus} data set are in cases with a defense verdict. We discuss these cases briefly below.

C. Damage Awards and Outlier Verdicts

Juries award compensatory damages (economic and noneconomic) and punitive damages. Table 5 summarizes the mean, median, and frequency of different types of damages for our sample.

The mean awards, especially for punitive damages, are significantly influenced by two large multidefendant cases with punitive damages (adjusted verdicts) totaling $41 million ($46 million) and $16 million ($28 million), respectively. Both punitive awards were apparently uncollectible, since the payout was a small fraction of the awarded compensatory damages.[35] In Table 5, we present mean damage awards both including and

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[35]We discuss the first case in Section V.D.2. In the second case, the insurer for the primary defendant paid $966,667 on a $1 million policy; no other payment was made.

Table 5:   Breakdown of Damage Awards—Plaintiff Verdict Cases with Payout > $25,000

	Economic Damages	*Noneconomic Damages*	*Punitive Damages*	*Total Damages*
Total	$133,878	$178,214	$69,618	$381,710
Mean	$438	$582	$228	$1,247
Mean (excluding two outliers)	$439	$555	$40	$1,033
Median	$52	$185	$0	$318
N (% of all cases)	254	255	22	306
	(83.0%)	(83.3%)	(7.2%)	(100%)

NOTE: Total, mean, and median economic, noneconomic, punitive, and overall damage awards, for plaintiff jury verdict cases in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. The third row excludes two outlier cases with large punitive damages awards. Amounts in thousands of 1988 dollars.

excluding these two outlier cases. In our regression analyses, we generally exclude these two cases, which might otherwise skew our results. In regressions limited to single-payer cases, we exclude a third outlier for the same reason. This case had an adjusted verdict of $13.4 million, but settled for the defendant physician's policy limits of $181,000. We include these outliers in nonregression analyses, including the discussions below of the frequency and aggregate dollar size of haircuts, and the impact of statutory caps.

In separate regressions (not shown) we find no significant time trend in the mean or median award of economic, noneconomic, or punitive damages. This is consistent with the lack of a significant time trend in overall adjusted verdicts.

As Table 5 reflects, on average, noneconomic damages significantly exceed economic damages. Prior research suggests that punitive damages are awarded in about 5 percent of medical malpractice cases, similar to the percentage in all tort trials, but does not distinguish between types of defendants.[36] We find that punitive damage awards are reasonably common against nursing homes. In single-payer cases, punitive damages are awarded in 28 percent (5/18) of cases against nursing homes; in 4 percent (7/162) of cases against physicians; and in 6 percent of other single-payer cases (2/35);

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[36]See Cohen (2004) (punitive damages awarded in 4.8 percent (15/311) of medical malpractice trials vs. 5.4 percent (202/3758) of other tort trials in 2001 survey).

Table 6:   Association Between Different Types of Damages

Dependent Variable	Regression				
	1	*2*	*3*	*4*	*5*
	ln(nonecon. damages)		*ln(punitive damages)*		
Year	0.01				
	(−0.63)				
ln(economic damages)	**0.43**		**0.43**		0.11
	(9.88)* **		**(3.12)*** **		(0.61)
ln(noneconomic damages)				**0.88**	**0.78**
				(5.10)* **	**(3.20)*** **
ln(compensatory damages)		**0.84**			
		(3.54)* **			
Constant	7.49	2.26	7.77	1.80	1.92
	(14.67)	(0.73)	(4.72)	(0.79)	(0.90)
N	203	20	18	15	13
Adjusted R^2	0.304	0.498	0.2204	0.6741	0.6873

NOTE: Regression of ln(noneconomic damages) and ln(punitive damages) for plaintiff jury verdict cases in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Regression 1 includes all cases with both economic and noneconomic damages. Regressions 2–5 are limited to cases with punitive damages, excluding two outlier cases with large punitive damage awards. Regression 3 is further limited to cases with both punitive and economic damages, Regression 4 to cases with both punitive and noneconomic damages, and Regression 5 to cases with economic, noneconomic, and punitive damages. Amounts in thousands of 1988 dollars. *t* statistics, based on robust standard errors, are in parentheses. *** indicates significance at the 1 percent level (suppressed for constant term). Significant results, at 5 percent level or better, are in **boldface**.

they are also awarded in 9 percent of the multipayer cases (8/91). Punitive damages were substantially more likely in single-payer cases against nursing homes than in single-payer cases against other defendants (*t* statistic for difference in proportions test = 3.94, *p* < 0.001).

Table 6 reports regression evidence on the extent to which different types of damages are associated with each other. We do not control for year in the punitive damages regressions due to the small number of these cases, but obtain similar results in robustness checks that include this control.

Consistent with prior research on jury verdicts, we find in Regression 1 a positive association between economic and noneconomic damages.[37] The

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[37]See Viscusi (1988:213–15). Other studies have focused on settled cases, and determined that they are resolved, on average, for a multiple of economic damages—although the multiple has

Pearson correlation coefficient between the two is 0.55. Also consistent with prior work, we find an association between punitive damages and compensatory (economic + noneconomic) damages.[38] In most cases with punitive awards, the variation in compensatory awards explains the variation in punitive awards reasonably well, as indicated by the 0.50 adjusted R^2 in Regression 2. These results suggest that, conditioned on punitive damages being awarded, the variation in the amounts of punitive awards in medical malpractice cases is reasonably predictable, based on the compensatory awards in each case.

A surprise emerges in Regressions 3–5, where we assess whether the association between punitive and compensatory damages is stronger for economic or noneconomic damages. Although the sample size in Regression 5 is small (13 cases with awards of all three types of damages), when both types of compensatory damages are included separately, noneconomic damages are strongly associated with punitive damages, whereas economic damages are not.[39] This suggests that the results in Regression 3 are driven by the strong positive correlation between economic and noneconomic damages.

V. Post-Verdict Payouts and Haircuts

A. Summary Statistics

We turn in this part to an examination of the differences between adjusted verdicts and actual payouts, and the factors that explain these differences. At a high level of generality, there are two ways of studying this question: we can study either the factors associated with payouts or the factors associated with haircuts. The two approaches are complementary; we present both because they convey a more complete picture of post-verdict outcomes.

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reportedly declined over time. See Daniels and Martin (1995, 2002:1807); Kritzer (1991); Ross (1980).

[38]See Eisenberg et al. (1997, 2002); Eisenberg and Wells (2006).

[39]To test for whether collinearity between economic and noneconomic damages is a significant concern in Regression 5, we computed a variance inflation factor. Our results (VIF = 2.07) indicate that the regression results are not strongly affected by collinearity between these variables.

Table 7: Damages, Verdicts, and Payouts by Type of Defendant—Plaintiff Verdict Cases with Payout > $25,000

		Mean			Median	
	N	Damages	Adjusted Verdict	Payout	Adjusted Verdict	Payout
Single-Payer Cases	215	$658	$867	$416	$316	$205
One physician	100	$422	$546	$306	$247	$180
One hospital	18	$612	$851	$553	$314	$293
One nursing home	14	$539	$608	$341	$225	$209
Other single-payer	79	$965	$1,292	$502	$449	$238
Multipayer Cases	91	$2,640	$3,251	$1,342	$1,175	$633
Two or more physicians	6	$1,065	$1,371	$687	$1,496	$734
Physician and hospital	50	$1,826	$2,220	$1,461	$1,136	$633
Other multipayer (excludes 2 outliers)	37	$2,144	$2,875	$1,204	$1,000	$633
Total (excludes 2 outliers)	304	$1,033	$1,336	$680	$412	$259
Total	306	$1,247	$1,576	$692	$433	$259

NOTE: Mean damages, and mean and median adjusted verdicts and payouts, for plaintiff jury verdict cases in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars; selected rows exclude two outlier multipayer cases with large punitive damage awards. Amounts in thousands of 1988 dollars.

Post-verdict payouts differ systematically from adjusted verdicts. Table 7 presents data on damages (economic + noneconomic + punitive), adjusted verdict (damages + reported or imputed prejudgment and post-judgment interest), and payout. Defendants of all types typically do not pay what the jury awards in both single-payer and multipayer cases.

Table 8 provides additional summary statistics by type of defendant, including the percentage of cases with positive haircuts, mean and median per-case haircuts, and aggregate dollar and fractional haircuts. The per-case mean and median haircuts weight each case equally. The percentages are smaller than for aggregate fractional haircuts because larger cases generally receive larger percentage haircuts.

Overall, 228 of the 306 plaintiff jury verdicts (75 percent) had positive haircuts, 62 cases (20 percent) had a payout equal to the adjusted verdict (within ± 2 percent), and 16 cases (5 percent) had a payout greater than the adjusted verdict (verdict bonus). Many haircuts are substantial. Adjusted jury verdicts totaled $482 million, while haircuts totaled $270 million, for an aggregate dollar haircut of 56 percent. Excluding the two outliers, the

Table 8: Summary Statistics on Haircut Frequency and Percentages—Plaintiff Verdict Cases with Payout > $25,000

	N	% of Cases with Positive Haircut	Mean Per-Case Haircut	Median Per-Case Haircut	Aggregate Dollar Haircut/Adjusted Verdict ($ Millions)	Aggregate Fractional Haircut
Single-Payer Cases	215	72	26.2%	16.6%	96Ms/186Ms	52.0%
One physician	100	69	21.9%	12.7%	24Ms/55Ms	43.8%
One hospital	18	61	18.6%	12.0%	5Ms/15Ms	35.1%
One nursing home	14	79	19.2%	11.8%	4Ms/9Ms	43.9%
Other single-payer	83	76	34.3%	22.9%	64Ms/108Ms	59.1%q
Multipayer Cases	91	81	35.4%	34.7%	174Ms/296Ms	58.7%
Two or more physicians	6	100	44.4%	47.4%	4Ms/8Ms	49.9%
Physician and hospital	46	70	28.2%	22.4%	36Ms/105Ms	34.7%
Other multipayer (excludes 2 outliers)	37	92	39.9%	41.3%	61Ms/105Ms	58.1%
Total (excludes two outliers)	304	74	28.5%	18.8%	199Ms/406Ms	49.1%
Total	306	75	29.0%	19.1%	270Ms/482Ms	56.1%

NOTE: Number of cases, fraction with positive haircut, mean (median) per-case haircut, aggregate dollar haircut, and aggregate fractional haircut for plaintiff jury verdict cases in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars; selected rows exclude two outlier multipayer cases with large punitive damage awards. Aggregate amounts in millions of 1988 dollars.

aggregate dollar haircut totaled $199 million, or 49 percent of adjusted verdicts of $406 million.[40]

As Table 8 reflects, percentage haircuts were similar in single-payer cases with physicians as defendants and in single-payer cases with defendants who potentially have deeper pockets (hospitals and nursing homes). In a regression limited to single-payer cases, using percentage haircut as the dependent variable and ln(adjusted verdict), ln(policy limits), a physician dummy, and a constant term as independent variables, the coefficient on the physician dummy was positive but statistically insignificant.[41]

B. Post-verdict Payouts: Associated Factors

Most jury verdicts receive a haircut, while a few receive a bonus. We consider in this section the factors associated with the size of post-verdict *payouts*. In later sections, we examine the factors that are associated with *haircuts*.

Figure 3 provides a starting point for the analysis of payouts by providing a scatterplot of ln(adjusted verdict) versus ln(payout). Figure 3 includes a 45-degree line indicating payout = adjusted verdict, plus a regression line for ln(payout) as dependent variable, with ln(adjusted verdict), year, and a constant term as independent variables. For small verdicts, payout and adjusted verdict are similar and close to the 45-degree line. However, as adjusted verdict increases, so does the expected haircut. As adjusted verdict increases from $100,000 to $1 million to $10 million, the expected payout (haircut) goes from $96,000 (4 percent) to $575,000 (42 percent) to $3.4 million (66 percent).

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[40]The aggregate dollar haircut and aggregate fractional haircut amounts reported in Table 8 include the 16 verdict bonus cases, for which the aggregate bonus was $1.1 million. For the 288 cases with zero or positive haircuts (excluding two outliers), the aggregate payout was $200 million and the aggregate adjusted verdict was $401 million, for an aggregate percentage haircut of 50 percent.

[41]The estimated effect of the physician dummy was positive but insignificant both in OLS and in a GLM specification similar to Table 16. Haircuts were larger in multipayer cases—but so were adjusted verdicts, and as we show below, larger adjusted verdicts are associated with larger haircuts. Controlling for verdict size, haircuts were similar in single-payer and multipayer cases. In a regression with percentage haircut as the dependent variable and year, ln(adjusted verdict), a multipayer dummy variable, and a constant term as independent variables, the estimated effect of the multipayer dummy variable was negative and marginally significant in both OLS and GLM specifications.

Figure 3:   Scatterplot of adjusted verdicts versus payouts.
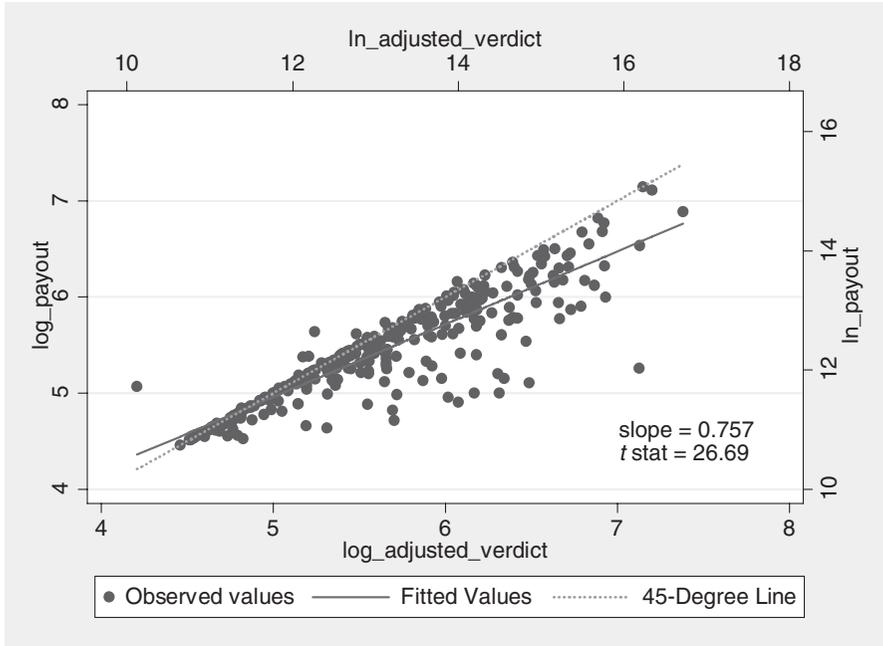
NOTE: Ln(payout) versus ln(adjusted verdict), plus a dotted 45-degree line at which payout = adjusted verdict, and a solid fitted line from a regression of ln(payout) versus ln(adjusted verdict), year, and constant term, for cases with plaintiff jury verdicts in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars, excluding two outlier cases with large punitive damage awards. The regression line assumes a mean value for year.

Table 9 provides regressions with ln(payout) as the dependent variable. Regression 1 provides the fitted line shown in Figure 3. A 1 percent increase in adjusted verdict is associated with only a 0.76 percent increase in payout. Thus, the larger the adjusted verdict, the larger the expected gap between adjusted verdict and payout.[42] Regressions 2 and 3 divide the sample into multipayer cases and single-payer cases. Dividing the sample lets us investigate the role played by policy limits in limiting payouts because we have policy limits data only for single-payer cases.

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[42]In a separate regression (not shown) we find no evidence of nonlinearity in the relationship between ln(payout) and ln(adjusted verdict). Thus, using a linear model to estimate this relationship seems appropriate.

Table 9: Regression: Basic Factors Associated with Payout—Plaintiff Verdict Cases with Payout > $25,000

	1	2	3	4	5
				Single-Payer Cases	
	All Cases	Multipayer Cases	All	Below-Limits Verdicts	Above-Limits Verdicts
Dependent Variable			*ln(payout)*		
Year	−0.010	**−0.027**	−0.008	−0.013	−0.004
	(−1.44)	(−2.14)**	(−1.02)	(−1.88)*	(−0.27)
ln(adj. verdict)	**0.757**	**0.810**	**0.731**	**0.832**	**0.263**
	(26.29)***	(21.38)***	(22.05)***	(13.83)***	(2.86)***
ln(policy limits)				0.059	**0.712**
				(1.02)	(6.36)***
Constant	2.79	2.31	3.06	1.144	0.242
	(8.23)	(4.35)	(7.85)	(2.50)	(0.31)
N	304	89	213	137	76
Adjusted R^2	0.791	0.793	0.780	0.845	0.769

NOTE: Regression of ln(payout) in pro-plaintiff jury verdict cases against independent variables as shown, for plaintiff jury verdict cases in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Regressions 1 and 2 exclude two outlier multipayer cases with large punitive damage awards. Regressions 3–5 exclude one single-payer outlier with adjusted verdict of $13.4 million, which settled for the defendant physician's policy limits of $181,000, and one case with missing policy limits. *t* statistics, based on robust standard errors, are in parentheses. *, **, and *** indicate significance at the 10 percent, 5 percent, and 1 percent level, respectively (suppressed for constant term). Significant results at 5 percent level or better are in **boldface**.

Regressions 4 and 5 add ln(policy limits) as a separate independent variable, and divide the sample into "below-limits cases" (adjusted verdict < limits) and "above-limits cases" (adjusted verdict > limits). We exclude one case with missing data on policy limits. Controlling for ln(adjusted verdict), the marginal effect of ln(policy limits) on ln(payout) is positive but insignificant in below-limits cases (Regression 4). In contrast, for above-limits cases, the marginal effect of ln(policy limits) on ln(payout) is economically strong and statistically significant (Regression 5). (Throughout this article, we use a 95 percent confidence level in describing coefficients as statistically significant.) This is consistent with policy limits acting as an important constraint on payouts.[43] These regressions

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[43]We study policy limits and the relationship between limits and payouts, in both tried and settled cases against physicians, in Zeiler et al. (2007). There, too, we find a strong relationship between limits and payouts.

Table 10:   Probability and Size of Haircut by Size of Adjusted Verdict

Adjusted Verdict Range	Number of Cases in Range	Positive Haircut (%)	Zero Haircut (%)	Mean Haircut	Median Haircut	Aggregate Fractional Haircut
$25–100k	53	47	47	8%	2%	5%
$100–250k	55	60	29	16%	9%	12%
$250–500k	59	71	20	23%	14%	24%
$500k–$1M	41	85	12	31%	20%	32%
$1–$2.5M	53	92	6	45%	42%	46%
>$2.5M (excludes 2 outliers)	43	98	2	56%	61%	56%
Total (excludes 2 outliers)	304	74	20	29%	19%	49%
Total	306	75	20	29%	19%	56%

NOTE: Number of cases, percentage with positive and zero haircut, and mean, median, and aggregate fractional haircut for different ranges of adjusted verdicts, for plaintiff jury verdict cases in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Outliers are two multidefendant cases with large punitive awards. Amounts in 1988 dollars.

offer a first look at the relationship between policy limits and payouts. We investigate in more detail below the connection among policy limits, haircuts, and payouts.[44]

C. Haircuts and Verdict Size

We turn in this section from payout to haircut as the variable of principal interest. Table 10 provides details on the relationship among verdict size, probability of haircut, and expected haircut size. It is evident that the larger the adjusted verdict, the more likely and larger the haircut.

There is a wide distribution of haircuts, with different patterns for smaller and larger adjusted verdicts. As the top-left quadrant of Figure 4 shows, in small cases, with an adjusted verdict less than $100,000, roughly 60 percent of plaintiffs receive 91–100 percent of the adjusted verdict. Conversely, as the lower-right quadrant of Figure 4 shows, in the largest

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[44]In robustness checks using robust regressions, in Regression 4, the coefficient on ln(adjusted verdict) increases to 0.955 ($t = 89.71$), and in Regression 5, ln(adjusted verdict) lost significance, while the coefficient on ln(policy limits) increased to 0.918 ($t = 16.18$). These findings are understandable given our data and the nature of robust regression, which downweights outliers. In below-limits cases, plaintiffs commonly recover most of the adjusted verdict; the cases in which they suffer a substantial haircut are all, to some degree, outliers. This can be seen in the scatterplot of Figure 5. In above-limits cases, plaintiffs commonly recover no more than the policy limits; cases where they recover substantially more than limits are all, to some degree, outliers.

Figure 4: Distribution of percent of adjusted verdict paid by adjusted verdict size.
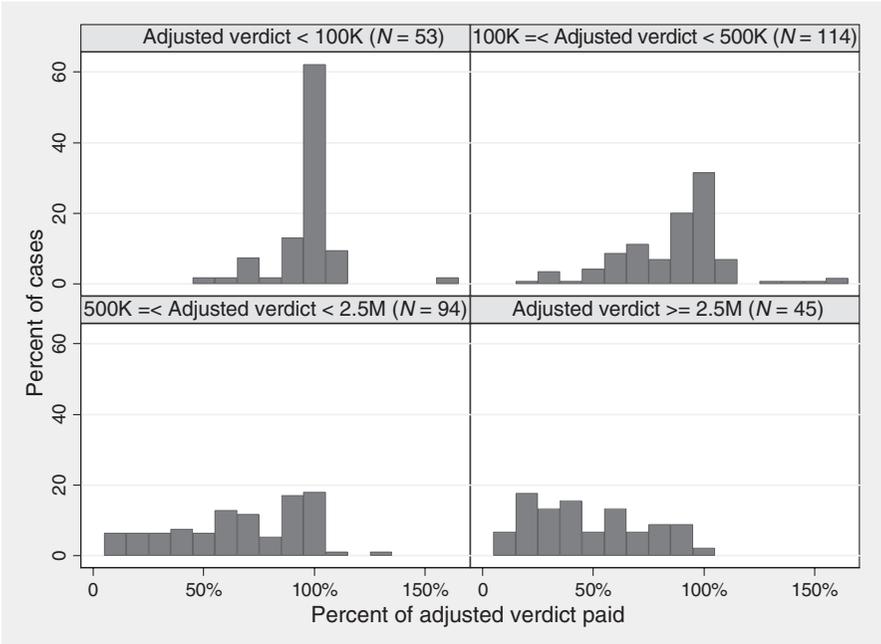
NOTE: Distribution of percent of adjusted verdict paid by adjusted verdict size, for plaintiff jury verdict cases in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Top-left chart is for cases with adjusted verdict < $100k; top-right chart for cases with $100k < adjusted verdict < $500k; bottom-left chart is for $500k < adjusted verdict < $2.5M; bottom-right chart is for $2.5M < adjusted verdict. Right-most bar in top two charts shows all cases with payout > 150% of adjusted verdict. Amounts are in 1988$.

cases, with an adjusted verdict over $2.5 million, payment of 91–100 percent of the adjusted verdict is uncommon, and many plaintiffs receive only a small fraction of the adjusted verdict. Indeed, in these large cases, 60 percent (27/45) of plaintiffs receive no more than half the adjusted verdict.

D. *The Effects of Judicial Oversight and Damage Caps on Haircuts*

We now turn to quantifying in more detail the factors that cause haircuts. Haircuts can result from judicial oversight, statutory caps on damages,

Table 11:   Distribution of Damages in Remittitur and Nonremittitur Cases

		Economic Damages	*Nonecon. Damages*	*Punitive Damages*	*Total Damages*	*Economic Damages/ Compensatory Damages*
Remittitur	Mean	$105	$928	$0	$1,033	17.3%
	Median	$12	$411	$0	$423	4.2%
Nonremittitur	Mean	$455	$565	$239	$1,258	39.6%
	Median	$53	$174	$0	$227	29.3%

NOTE: Damages in remittitur (15) and nonremittitur (291) cases in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Mean punitive award in nonremittitur cases would drop to 42 if we exclude two outlier cases with large awards. Amounts in thousands of 1988 dollars.

policy limits, and other settlement-related factors. Below, we examine as many of these factors as our data set allows and quantify their relative importance.

1. Judicial Oversight

Judges exercise ex post oversight over jury decisions in a variety of ways, including granting motions for directed verdict or for judgment notwith-standing the verdict (jnov), granting remittitur, and by appellate reversal. Legal scholars have emphasized the importance of this oversight in con-straining jury discretion, especially the potential for reduction or appellate reversal of very large verdicts. Our data set allows us to quantify the effect of remittitur and say a little bit about jnov and appellate reversal.

a. Remittitur Remittitur is an infrequent source of haircuts. Judges reduced jury verdicts through remittitur in 4.9 percent (15 of 306) of the cases in our sample. One of these remittiturs was apparently reversed on appeal.[45] There is no evidence that judges use remittitur to reduce punitive damage awards. However, Texas has a statutory cap on punitive damages; judges might act differently in states without such a cap.

As Table 11 reflects, remittitur is concentrated in cases in which eco-nomic damages are a small proportion of total damages. The mean (median) ratio of economic to total compensatory damages is 17.3 percent (4.2 percent) in remittitur cases, compared to 39.6 percent (29.3 percent) in

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[45]An appendix, available from the authors on request, provides details on each remittitur case.

nonremittitur cases. The difference in means is statistically significant at the 5 percent level both in raw dollars ($t = 2.30$) and in ln(dollars) ($t = 3.17$).

Remittitur had a substantial impact on damages in the cases where it was imposed. The mean (median) dollar remittitur was $361,000 ($150,000). The mean (median) per-case percentage remittitur was 25 percent (20 percent) of preremittitur damages, and the aggregate dollar remittitur was 33 percent of preremittitur damages.[46]

In the end, remittitur, including its effect on prejudgment and post-judgment interest, reduced potential payouts by $9.0 million, which is 3.3 percent of the aggregate dollar haircut of $270 million. The reduction is $5.5 million (2.0 percent of the aggregate dollar haircut) if we exclude the reversed remittitur. However, this amount may overestimate the real-world importance of remittitur. Excluding the reversed remittitur, defendants paid less than 90 percent of the adjusted allowed verdict in 10 of the 14 remittitur cases, and paid less than 75 percent of the adjusted allowed verdict in seven of these cases. These haircuts, even after remittitur, combined with the tendency for the remitted amounts to be above policy limits, suggest that some of the remitted amounts might not have been collected in any case.

Remittitur can also affect cases where it is not directly applied. For example, pending or potential remittitur motions could affect the parties' bargaining positions and thus the post-verdict settlements.[47] However, our results indicate that the direct effects of remittitur can explain only a small share of the aggregate dollar haircut.

b. Jnov and Appellate Reversal Our data set includes three jnov cases following a plaintiff jury verdict and one appellate reversal of a plaintiff verdict.[48]

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[46]If we exclude the case where the remittitur was apparently reversed on appeal, the mean (median) remittitur drops to $244,000 ($123,000), the mean (median) per-case remittitur was 24 percent (19 percent), and the aggregate dollar remittitur was 27.5 percent of preremittitur damages. It is possible that some insurers reported postremittitur rather than preremittitur damages. If so, our data would *understate* the difference between remittitur and nonremittitur cases on proportion of economic to total damages and *understate* the aggregate dollar haircut in these cases, but *overstate* the percentage reduction in the adjusted verdict due to remittitur.

[47]The TCCD does not indicate whether a motion for remittitur was made, or was pending at the time of settlement.

[48]The data set also includes: (1) 16 cases with a directed verdict for the plaintiff (perhaps because the defendant contested only damages, not liability); (2) 11 cases with a directed verdict

There may have been other jnov and appellate reversal cases that were not reported to the TCCD because defendants paid less than $25,000 (nominal). If so, our analysis will understate the effect of these two sources in generating haircuts. In the three jnov cases that followed a plaintiff verdict, the total adjusted verdicts were $3 million and defendants paid $1.5 million of this amount, for an aggregate haircut of 50 percent.[49] In the appellate reversal case, the jury awarded $1.1 million, the judge reduced the award to $364,000 through remittitur, the defense successfully appealed, and the case settled after the appeal for $100,000. Thus, jnov and appellate reversal are together responsible for $2.5 million (roughly 1 percent) of the aggregate haircut.

Even if appellate reversal is infrequent, the risk of reversal could affect the terms of post-verdict settlement. Defendants' ability to delay payment through appeal, while imposing legal costs on plaintiffs, could also contribute to post-verdict haircuts, even if the risk of appellate reversal is small.

c. Summary of Judicial Oversight To summarize, the direct effect of judicial oversight can explain only 3–4 percent of the aggregate dollar haircut (depending on whether we count the reversed remittitur). Although judicial oversight of tort verdicts has received considerable attention from legal scholars and policy advocates, it cannot explain the haircuts even in the cases it directly affects, let alone the larger pattern of haircuts across other cases.

2. Punitive Damages Cap

As noted previously, Texas had statutory caps on punitive damages and damages in death cases during the period covered by our study. No case was affected by both caps, so we analyze them separately.

Punitive damages totaling $69.6 million were awarded in 22 cases in our data set. Two large multidefendant cases accounted for $57.6 million of this amount. Texas changed the formula for the punitives cap for cases filed after September 1, 1995. The pre-1995 cap applied to 16 cases; the post-1995

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for the defense, which later settle for at least $25,000; (3) 12 cases appealed by the defense, where the plaintiff won the appeal; (4) one case where the plaintiff apparently appealed a remittitur and won; (5) one other case where the plaintiff appealed and won, although a plaintiff jury verdict is recorded (perhaps the trial was after the appeal); and (6) several miscellaneous appealed cases in which the outcome is recorded as "other."

[49]Two of these cases involved punitive damages. The adjusted verdicts (payouts) in these three cases were: $2.3 million ($1.3 million); $523,000 ($96,000); and $156,000 ($109,000).

cap applied to six cases. The post-1995 cap is less generous than the pre-1995 cap (see Section III.A for the cap formulas).

The punitives cap reduced allowed damages in five of the 22 cases, by a total of $43.0 million (62 percent of the awarded punitive damages). Including the effect on postjudgment interest (prejudgment interest is not awarded on punitive damages), the punitives cap reduced the adjusted allowed verdicts in these cases by $43.6 million. Thus, the cap can explain roughly 16 percent of the aggregate dollar haircut. One large multidefendant case accounted for almost all the reduction in adjusted allowed verdicts ($41.2 million). The jury awarded punitive (total) damages of $41 million ($46 million) to a 98-year-old plaintiff who sued a nursing home and its physician-medical director. The punitives cap reduced the allowed punitive damages (adjusted allowed verdict) award to $515,000 ($4.0 million); the plaintiff settled for $550,000.[50] Although the original "blockbuster" verdict received press coverage, the final settlement did not.[51] The defendants paid less than 90 percent of the adjusted allowed verdict in three of the five cases

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[50]This case had a complex history. The plaintiff was raped by a co-resident. In 1999, the jury awarded compensatory (punitive) damages of $1 million ($10 million) against the medical director and $4 million ($50 million) against the nursing home (all dollar values in this footnote are nominal, and thus do not match the real dollar figures used in text). In 2000, the medical director's insurer filed a closed claim report, indicating that it paid $500,000 and another insurer paid $300,000 for another defendant. The report indicated neither a remittitur nor an appeal. However, according to *Healthcare Ctrs. of Tex., Inc. v. Rigby*, 97 S.W. 3d 610 (2002), the trial judge remitted the total verdict to $11 million, the nursing home appealed the punitive damages award, and the appellate court held that punitive damages were unavailable because the injury was due to criminal action by a third party.

We contacted plaintiffs' counsel, who told us that the medical director had settled the claim against him after verdict, but before judgment—which is why the 2000 closed claim report did not reflect a remittitur or an appeal. The $300,000 payment was made by the medical director, who then successfully sued his insurer to obtain reimbursement. The case against the nursing home was resolved for an additional $1 million plus interest after the Texas Supreme Court declined to review the case. To date, no closed claim report reflecting this $1 million payment has been filed with TDI.

These facts complicate the coding of the post-verdict adjustments that occurred in this case. For example, should the trial court's remittitur count as a form of judicial oversight—or did the judge simply apply the punitives cap, and the court of appeals then loosely called this a remittitur? How should we treat the appellate disallowance of punitive damages? How should we handle the unreported $1 million plus interest that was paid in 2003? We decided to code the case as initially reported. That this case affects neither our regressions (it is excluded as an outlier), nor our analysis of policy limits (which relies on single-payer cases).

[51]See Zuniga (1999:A37). The verdict was $65 million in nominal dollars, which is $46 million in 1988 dollars.

to which the punitives cap applied, and paid less than 75 percent of the adjusted allowed verdict in two of these cases. This, together with the tendency for the above-cap portion of punitive awards to also be above policy limits, suggests that some of the disallowed punitive awards may not have been collected in any case.

3. Death Cap

Throughout our sample period, Texas capped the sum of compensatory damages and prejudgment interest in wrongful death cases at $975,000 in 1988 dollars; the cap was adjusted for inflation. Our data set includes 66 wrongful death cases. We can only estimate the impact of this cap because it does not apply to medical expenses and the TCCD does not break out these expenses. We assumed that none of the economic damages in wrongful death cases were for medical expenses; this will overestimate the cap's effect.[52] There may also be some cases in which plaintiffs do not prove damages they otherwise could have proven, but could not collect given the cap; we would underestimate the cap's effect in these cases.

The death cap reduced allowed damages in 26 of the 66 wrongful death cases, and eliminated approximately $31.9 million (45 percent) of the damages plus prejudgment interest awarded in those cases. Including its effects on postjudgment interest, the impact of the death cap was $38.4 million. Thus, this cap can explain roughly 14 percent of the aggregate dollar haircut.

In 10 of the 26 cases in which the cap applied (representing $8.4 million of the reduction in potential payouts), the payout was less than 90 percent of the adjusted allowed verdict. In seven of these cases, defendants paid less than 75 percent of the adjusted allowed verdict. These outcomes suggest that some of the above-cap adjusted verdict might not have been collected in any case.

To summarize, the punitive and death caps, taken together, reduce the aggregate adjusted verdict by $82 million (roughly 30 percent of the aggregate haircut). However, in some of the cases to which these caps apply, other factors may have prevented plaintiffs from fully collecting the above-

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[52]During much of our sample period, it was unclear whether the cap applied to compensatory damages or to the sum of compensatory damages plus prejudgment interest. The courts eventually ruled that it covered the sum of the two; we treated this rule as having been in effect during the entire period. This will overestimate the cap's effect. Columbia Hosp Corp. of Houston v. Moore, 92 S.W.3d 470, 474 (Tex. 2002).

Table 12: Adjusted Verdicts and Policy Limits in Single-Payer Cases

Defendants	N	Mean		Median	
		Adjusted Verdict	*Policy Limits*	*Adjusted Verdict*	*Policy Limits*
One physician	162	$884	$814	$351	$658
One hospital	23	$931	$1,373	$348	$726
One nursing home	18	$507	$1,188	$225	$798
Other single-payer	11	$1,072	$3,341	$154	$776
All single-payer cases	214	$867	$1,036	$306	$668

NOTE: Mean and median adjusted verdicts and defendant policy limits for single-payer, plaintiff jury verdict cases in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars, excluding one case with missing data on policy limits. Amounts in thousands of 1988 dollars.

cap adjusted verdict. To the extent this is so, damages caps will have less real-world impact on payouts than one would infer by assessing their direct effect on adjusted allowed verdicts.

E. The Impact of Policy Limits

Prior research indicates that plaintiffs in medical malpractice cases rarely pursue the personal assets of individual defendants and will generally settle for the policy limits, instead of pursuing "blood money."[53] In this section, we attempt to quantify the influence of policy limits on observed haircuts and actual payouts. We limit our analysis to single-payer cases, which are the only cases for which we have full information about policy limits. We exclude one case with missing data on policy limits. Sample size thus drops to 214 cases. Table 12 compares mean and median adjusted verdicts and policy limits for single-payer cases.

We caution that single-payer cases are not representative of all cases. Multipayer cases represent 30 percent of the cases in our sample but 61 percent of adjusted verdicts ($296 million of $482 million) and 64 percent of haircuts ($174 million of $271 million). The mean adjusted verdict in multipayer cases is $3.2 million, compared to $867,000 in single-payer cases.

Median limits exceed median adjusted verdicts for all types of defendants. Mean limits are greater than mean adjusted verdicts for hospitals,

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[53]Baker (2001); see also Zeiler et al. (2007); Gilles (2006). This finding is not unique to personal injury cases. In securities class action cases, it is also common for cases to be resolved within policy limits, and quite rare for outside directors to pay out of pocket. See Black, Cheffins and Klausner (2006).

Figure 5:   How do policy limits affect haircuts?
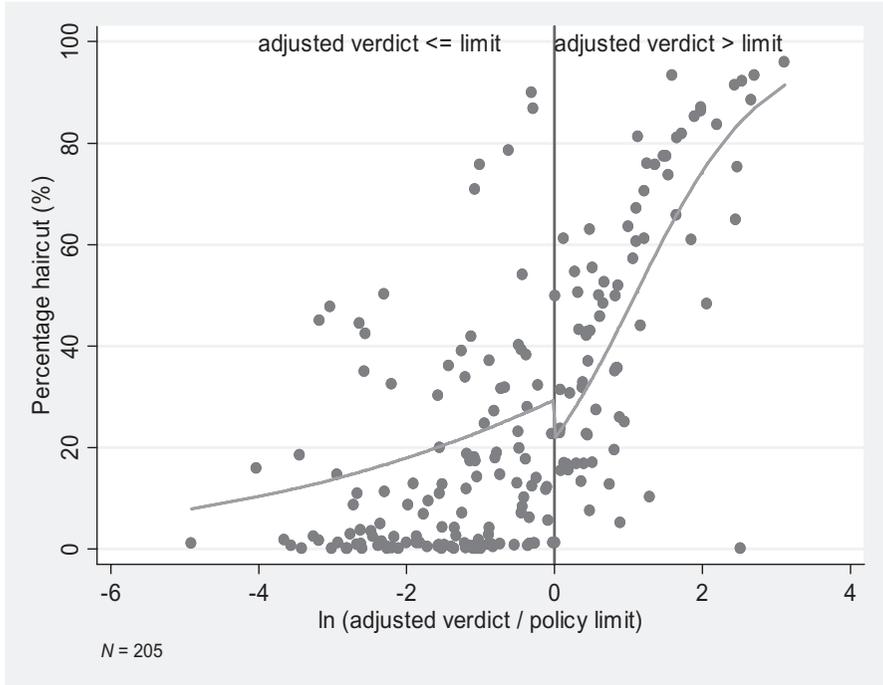
NOTE: Figure shows per-case percentage haircut versus ln(adjusted verdict/policy limits), plus best fit lines from GLM regression, with family (binomial, adjusted verdict) and a logit link, of (adjusted verdict-payout) versus year, ln(adjusted verdict/policy limits), above-limits dummy, interaction between above-limits dummy and ln(adjusted verdict/limits), and constant term, for single-payer plaintiff jury verdicts in the BRD_{minus} data-set of nonduplicate medical malpractice claims closed from 1988–2003 with zero or positive haircut and payout >$25,000 in 1988 dollars, excluding one outlier. The regression equation is (z-values in parentheses): (adj. verdict-payout) = 0.04 · (year) (z = 1.59) + 0.321 · (ln(adj/verdict/limits) (z = 2.06)** − 0.400 · (above-limits dummy) (z = −1.15) + 0.850 · [above-limits dummy · ln(adj. verdict/limits)] (z = 3.76)*** − 1.20 (constant, z = −4.43)***. The coefficient on the interaction term predicts the change in slope for above-limits cases, relative to below-limits cases. The regression lines assume a mean value for year. Coefficients should be interpreted similarly to logit coefficients.

nursing homes, and other single payers, but are less than mean adjusted verdicts for physicians. Adjusted verdicts exceed policy limits in many cases. Overall, 137 single-payer cases are below-limits (adjusted verdict < limits) and 77 are above-limits (adjusted verdict > limits). Of the above-limits single-payer cases, 65 involve physicians.

We expect to find larger haircuts for above-limits adjusted verdicts because of difficulties with collectibility. Figure 5 displays the relationship between policy limits and haircuts for the 205 single-payer cases with zero or

positive haircuts (excluding one single-payer outlier discussed above). We break the observations into below-limits and above-limits cases, and provide separate best-fit lines for each group, from a regression of per-case haircut against ln(adjusted verdict/limits), year, and a constant term.

Figure 5 shows a gradual increase in expected percentage haircut as the adjusted verdict approaches the policy limits, and a much steeper increase once the adjusted verdict exceeds the policy limits. The estimated slope in above-limits cases is substantially larger than the slope in below-limits cases and the change in slope is highly statistically significant ($z = 3.76$). Plaintiffs simply have a hard time collecting amounts that exceed policy limits.

In providing regression lines and accompanying z statistics in Figure 5, we estimate a generalized linear model (GLM) because percentage haircut is bounded at 0 and 100 percent, with numerous small and 0 observations, especially below limits. Thus, both the dependent variable and the residuals have a strong positive skew, which means that slope coefficients and standard errors from OLS may be biased. In practice, the bias does not appear to be severe; OLS regression lines are similar to the GLM regression lines shown in the figure. We undertake a number of robustness checks, using different but also imperfect specifications, with similar results.[54]

Figure 6 provides a different perspective on the collectibility of adjusted verdicts in above-limits cases, focusing on payouts instead of haircuts. We provide separate histograms showing the fractions of below-limits and above-limits single-payer cases with different ranges of payout/limits. As Figure 6 reflects, 31 percent (24/77) of above-limits single-payer cases had payouts between 95–105 percent of policy limits. Conversely (and unsurprisingly), payouts in below-limits single-payer cases are virtually always resolved with payouts below the policy limits.[55]

Thus, a majority of above-limits cases (41/77, or 53 percent) settle at or below policy limits, with the limits effectively capping recovery. In individual cases, even quite low policy limits can effectively cap payouts. Here are two examples, which form part of the solid bar at payout/limits = 100% in Figure 6.

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[54] We obtain similar results, using both GLM and OLS, if we first split the sample into below-limits and above-limits cases, and estimate the coefficient on ln(adj. verdict/limit) for each subsample (the OLS regression equation is haircut = $\alpha + \beta \cdot$ year + $\aleph \cdot$ ln(ajd $\cdot$ verdict/limit) + ε).

[55] The ratio would exceed 1 only in the unlikely (and, in our sample, nonexistent) case where a plaintiff received a verdict bonus that resulted in an above-limits payment.

Figure 6:   How do limits affect payouts?
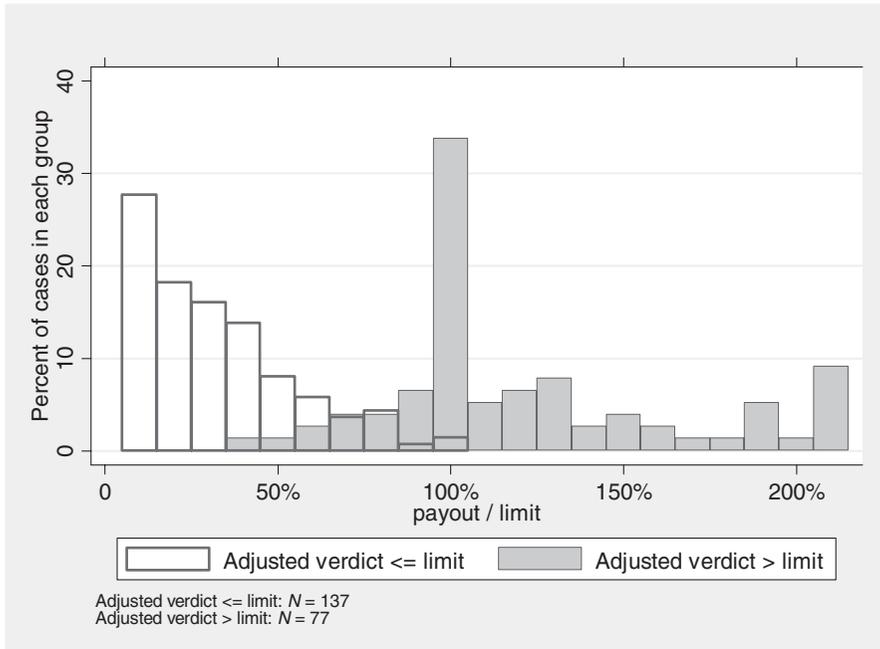
NOTE: Percentage of below-limits cases (hollow bars) and above-limits cases (solid bars) within the indicated payout/limit ranges, for single-payer plaintiff jury verdicts in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Last solid bar includes all above-limits cases with payout/limit > 205%.

- Case 7200012 (injury 1980; trial 1989). Brain damage to 55-year-old. Adjusted verdict = $13.4 million; settled for the defendant-physician's policy limits of $181,000 ($200,000 nominal). We exclude this outlier case in our single-payer regressions because it might otherwise skew our results.
- Case 18800505 (injury 1989; trial 1993). Injury to a 44-year-old. Adjusted verdict of $1.2 million; settled for the defendant-physician's policy limits of $80,000 ($100,000 nominal).

However, the remaining 47 percent (36/77) settle above limits. We discuss below who makes these above-limits payments.

Table 13 presents a regression analysis of the relationship among policy limits, haircuts, and payouts in single-payer cases. We separately analyze below-limits and above-limits cases.

Table 13: Impact of Policy Limits on Haircuts and Payouts

	Payout	*ln(payout)*	*Payout*	*ln(payout)*	*Payout*
Dependent Variable	*1*	*2*	*3*	*4*	*5*
Sample	*Below Limits*			*Above Limits*	
Year	**−5.14**	**−0.014**	−8.925	−0.002	−15.771
	(−2.16)**	**(−2.15)****	(−0.94)	(−0.12)	(−1.19)
Adjusted verdict	**0.694**				
	(10.49)***				
Policy limits			**0.917**		**0.945**
			(36.65)***		**(21.56)*****
ln(adjusted verdict)		**0.857**			
		(19.37)***			
ln(policy limits)				**0.837**	
				(11.39)***	
Adjusted verdict above policy limits (adjusted verdict − limits)			**0.16**		
			(2.72)***		
ln(adjusted verdict above limits)				**0.141**	
				(3.64)***	
Constant	65.98	1.66	81.79	0.43	309.52
	(2.59)	(3.02)	(0.90)	(0.50)	(0.90)
N	137	137	76	76	76
Adjusted R^2	0.921	0.842	0.858	0.772	0.794

NOTE: Regressions of payout, or ln(payout) versus indicated independent variables, for single-payer, plaintiff jury verdicts in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims with a payout greater than $25,000 in 1988 dollars, excluding one outlier case. Adjusted verdict *above policy limits* = (adjusted verdict − limits). Amounts are in thousands of 1988 dollars. *t* statistics, based on robust standard errors, are in parentheses. ** and *** indicate significance at the 5 percent and 1 percent level, respectively (suppressed for constant term). **Boldface** indicates significance at the 5 percent level or better.

Regressions 1 and 2 are below-limits regressions measuring payouts in dollars and ln(dollars), respectively. The 0.694 coefficient on adjusted verdict in Regression 1 implies that an extra dollar in adjusted verdict is associated with an additional 69.4 cents in payout.[56] Regression 2 implies that a 1 percent increase in the adjusted verdict is associated with a 0.86 percent increase in the payout.

In Regressions 3–5, we turn to above-limits cases. We include separate independent variables for policy limits and the amount of the adjusted

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[56]In a separate regression (not shown) with policy limits added as an independent variable to Regression 1, policy limits were not significantly associated with payouts in below-limits cases.

verdict that is above limits (this variable equals (adjusted verdict − limits)). Regression 3 indicates that, conditioned on the adjusted verdict exceeding limits, plaintiffs collect 92 cents out of a marginal policy limits dollar. In contrast, plaintiffs collect only 16 cents on the dollar for a marginal adjusted verdict dollar above limits. Regression 4 tells a similar story using logged amounts. Regression 5 drops adjusted verdict above limits as an independent variable in order to ask: If all one knows is that a payout of at least $25,000 occurred, the year it occurred, the policy limits, and that the verdict was above limits, how much of the payout can one explain? Quite a lot, is the answer. About 79 percent of the variation in payouts in above-limits cases is explained by policy limits (i.e., adjusted $R^2 = 0.794$). Adding the above-limits portion of the adjusted verdict as an additional independent variable increases adjusted R^2 to 0.86 (Regression 3).

We caution that these are estimates of average marginal effects. As the scatterplot in Figure 5 shows, in many below-limits cases, plaintiffs recover most or all of the adjusted verdict, while in a minority of cases, they suffer a significant haircut. In many above-limits cases, plaintiffs recover nothing above limits and receive a large haircut, while in a minority of cases they recover a significant amount above limits.[57]

Figures 5 and 6 and Table 13 make it apparent that policy limits have a substantial impact on payouts in above-limits cases. We attempt next to estimate the extent to which policy limits explain the aggregate dollar haircut in single-payer cases. We construct two estimates, a "*caps-first*" and a "*limits-first*" estimate, as follows. Nine single-payer cases are affected by the death cap, the punitives cap, or remittitur. To construct the caps-first estimate, we assume that the difference between adjusted verdict and adjusted allowed verdict in these nine cases is explained first by remittitur and second by a damages cap.[58] We then estimate how much of the remaining haircut can be explained by policy limits. For cases with payout < limits, we assume

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[57]In robustness checks using robust regression, in Regression 1, the coefficient on adjusted verdict within policy limits (which for below-limits cases equals adjusted verdict) increased to 0.936 ($t = 116.89$), consistent with robust regression downweighting below-limits cases with significant haircuts. In Regression 3, the coefficient on max (0, adjusted verdict − limits) declined to 0.01 (insignificant), consistent with robust regression downweighting cases in which plaintiffs recover above limits.

[58]For two single-payer cases with both remittitur and a binding death cap, we assume in calculating the adjusted allowed verdict that the remittitur applies first and the death cap second.

that the difference between adjusted allowed verdict and *limits* is explained by the policy limits. For cases with payout > policy limits, we assume that the difference between adjusted allowed verdict and *payout* is explained by the policy limits. Thus, for example, if adjusted allowed verdict = $2 million, limits = $1 million, and payout = $800,000, we treat the haircut from $2 million to $1 million as explained by policy limits, and the haircut below $1 million as having other causes. If payout were instead $1.2 million, we would treat the haircut from $2 million to $1.2 million as explained by policy limits.

This "caps-first" estimate is likely to understate the effect of policy limits because: (1) it ignores any effect of negotiation against the background of policy limits in explaining below-limits haircuts; (2) in some cases, available limits may be less than reported limits because the reported limits were eroded by prior payout or the policy includes a "defense-within-limit" provision in which the policy limits cover both payout and defense costs; and (3) it ascribes haircuts in cases affected by caps or remittitur to the cap or remittitur, when policy limits might have been a separately binding constraint. Thus, for example, if adjusted verdict = $5 million, adjusted allowed verdict = $2 million, limits = $1 million, and payout = $800,000, the caps-first approach treats the haircut from $5 million to $2 million as explained by a damages cap even though the plaintiff might have collected no more than the policy limits in any case.

To allow for the possibility that limits are a separate constraint on payout in cases also affected by caps or remittitur, we also construct a "*limits-first*" estimate. In this approach, we assume, for the six cases affected by remittitur or caps that have an adjusted allowed verdict greater than the limits but a payout less than the limits, that the difference between adjusted verdict and limits is explained by the limits rather than the remittitur or cap. The "limits-first" estimate is the same as the "caps-first" estimate for the remaining 208 cases. Table 14 presents the results of this analysis.

Under the caps-first approach, we estimate that policy limits explain approximately $71 million (73 percent) of the aggregate dollar haircut of $97 million in single-payer cases.[59] Caps and judicial oversight explain an

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[59]To determine whether some of the haircut in single-payer cases might be attributable to nonpayment by another defendant who was found liable, instead of the policy limits of the reporting defendant, we examined above-limits single-payer cases in which (1) there was a second, liable but nonpaying defendant, and (2) the jury verdict did not impose joint and several liability, so that the primary defendant was only liable for a portion of the award. There are five such cases, for which the procedure described in the text ascribes a total of $0.98 million

Table 14:   Factors Explaining Haircuts in Single-Payer Cases

| | Aggregate Dollar Haircuts in Single-Payer Cases (N = 214) | | | |
	"Caps-First"		"Limits-First"	
Policy limits	$70.7M	73%	$84.7M	87.1%
Death caps	$9.4M	9.7%	$1.2M	1.2%
Punitive caps	$1.6M	1.7%	$0.08M	0.1%
Judicial oversight	$3.8M	3.9%	$0.2M	0.2%
Other factors above limits	$3.4M	3.6%	$2.7M	2.8%
Other factors below limits	$8.3M	8.5%	$8.3M	8.5%
Total	$97.2M	100%	$97.2M	100%

NOTE: Dollar amount and proportion of aggregate dollar haircut explainable by the indicated factors, using the "caps-first" approach discussed in text (which ascribes haircuts to judicial oversight, caps, policy limits, and other factors, in that order) and the limits-first approach (which ascribes haircuts to policy limits, judicial oversight, caps, and other factors, in that order), for single-payer, plaintiff jury verdicts in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Dollar amounts are in millions of 1988 dollars.

additional $15 million (15 percent) of this aggregate haircut; the remainder has other causes.[60] Our limits-first estimate indicates that policy limits explain approximately $85 million (87 percent) of the aggregate dollar haircut in single-payer cases, while caps and judicial oversight now explain only $1.5 million (1.5 percent) of the aggregate haircut in these cases.

Even under the caps-first approach, policy limits play a dominant role in explaining dollar haircuts in single-payer cases, while the direct impact of statutory caps explains a moderate fraction, and the direct impact of judicial oversight explains a small fraction of the aggregate dollar haircut. In the limits-first approach, statutory caps and judicial oversight fade into insignificance because they apply mostly in cases where the adjusted verdicts exceed policy limits and the plaintiff collected less than the policy limits. However, remittitur and caps are more important in multipayer cases, which we exclude from Table 14 due to incomplete information on policy limits. Remittitur or caps affect 33/91 (36 percent) of multipayer cases, compared

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in aggregate dollar haircut (1 percent of the aggregate haircut in all single-payer cases) to policy limits, which was owed by another defendant. If this amount were instead allocated to "other factors above limits," it would not materially affect the role of policy limits in explaining haircuts.

[60]The amounts and percentages due to caps and remittitur are different from those discussed above because we earlier considered the full sample and are here considering only single-payer cases.

to only 9/215 (4 percent) of single-payer cases. The single-payer results accordingly understate the role of judicial oversight and caps in explaining aggregate dollar haircuts.

F. Other Settlement Factors Affecting Haircuts

We have explored the effect on haircuts of the factors we can quantify—the direct effects of caps, judicial oversight, and policy limits. As Table 14 indicates, 12 percent of the aggregate dollar haircut in single-payer cases remains unexplained (caps first estimate), with most of this amount coming from below-limits cases. These haircuts could have a variety of explanations. Some plaintiffs may be willing to accept a haircut in order to receive faster payment or avoid the cost and risk of an appeal. For example, the plaintiff might waive prejudgment interest, postjudgment interest, or both, presumably because the extra effort and delay needed to collect interest is judged not to be worthwhile.

Some below-limits haircuts could be explained by high-low agreements entered into prior to trial, in which the parties agreed that whatever the jury decided, the plaintiff receive at least the "low," but no more than the "high." As we discuss below, it appears likely that the payouts in some of the defense verdict cases in our sample result from high-low agreements, where the defense pays the "low." It is also likely that some positive haircut cases result from high-low agreements where the verdict exceeds the "high."

Defendants may sometimes bargain for a modestly below-limits payment in cases where limits are an effective cap by threatening to appeal, or by otherwise holding out. The plaintiff may prefer a below-limits payment today to an at-limits payment sometime in the future. Such a negotiation dynamic could help explain the pattern we observe in Figure 5, where haircuts in below-limits cases tend to increase as the adjusted verdict approaches the policy limits. We do not have sufficient data to allocate haircut dollars among these various explanations.

Overall, haircuts due to other settlement factors are common, but typically not large in percentage terms. A bit over half (77/137: 56 percent) of single-payer cases with adjusted allowed verdicts within policy limits still receive a haircut. As Table 14 indicates, haircuts in these cases accounted for $8.3 million (8.5 percent) of the aggregate dollar haircut in single-payer cases.

G. Insurer Payments Above Limits and Defendant Out-of-Pocket Payments

Who pays when a verdict exceeds policy limits? Table 15 quantifies the incidence and magnitude of insurer payments above limits and defendant

Table 15: Insurer Above-Limits and Defendant Out-of-Pocket Payments

Panel A: Number of Single-Payer Cases

Case Type	Adjusted Verdict	N	No Payment Above Limits or Out-of-Pocket Payment	Insurer Paid Above Limits	Defendant Paid Out of Pocket	Insurer Paid Above Limits and Defendant Paid Out of Pocket
All	Above limits	77	43	28	4	2
	Below limits	137	136	0	1	0
Physician only	Above limits	65	37	24	3	1
	Below limits	97	96	0	1	0

Panel B: Dollars Paid in Single-Payer Cases

Case Type		Insurer Paid Above Limits		Defendant Paid Out of Pocket	
		N	Amount	N	Amount
All	Total	30	$11,706	7	$1,622
	Mean (median)		$390 ($201)		$232 ($136)
Physician only	Total	25	$7,076	5	$467
	Mean (median)		$283 ($108)		$93 ($114)

NOTE: Insurer above-limits payments and defendant out-of-pocket payments (excluding payment of deductibles), for single-payer, plaintiff jury verdicts in the BRD$_{minus}$ data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Amounts in thousands of 1988 dollars.

out-of-pocket payments in single-payer cases (excluding deductibles)[61] Panel A reports summary statistics on number of cases; Panel B reports dollars paid. As Panel A reflects, there were insurer payments above limits, defendant out-of-pocket payments, or both in 35 single-payer cases, of which 34 were above-limits cases, and 29 were physician only cases.[62] All defendants (physicians) paid out of pocket in a total of seven (five) single-payer cases, as well as five (four) additional out-of-pocket payments by all defendants (physicians) in multipayer cases.[63]

As Panel B of Table 15 shows, insurer payments above limits in all (physician only) single-payer cases totaled $11.7 ($7) million, while out-of-pocket payments by all defendants (physicians) in seven (five) cases totaled $1.6 million ($467,000). Thus, for all defendants (physicians), insurers are responsible for 88 percent (96 percent) of the sum of above-limits and out-of-pocket payments in single-payer cases.

Figure 7 shows how much of the above-limits portion of the adjusted verdict in the 77 (65) above-limits single-payer (physician single payer) cases was ultimately paid and who paid it. Of the above-limits amounts, 87 percent (91 percent) go unpaid, 12 percent (9 percent) is paid by insurers, and only about 1 percent (a fraction of 1 percent) is paid by all defendants (physicians) out of pocket. Even above limits, insurers are the primary payers.

One might expect plaintiffs to collect more readily above limits from institutional defendants than from physicians. For the 12 above-limits single-payer cases with hospitals or nursing homes as defendants, 70 percent of the above-limits amount is unpaid, 24 percent is paid by insurers, and 6 percent is paid by defendants out of pocket.

H. Time Trends in Haircuts

Table 16 provides a regression analysis assessing a possible time trend in haircuts, using per-case haircut as the dependent variable. We again switch from OLS to a GLM regression specification, to address the possible bias of

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[61]In three cases, defendants made small payments due to policy deductibles, totaling $79,000.

[62]The one below-limits case with an out-of-pocket payment involved a punitive damage award against a physician, which the insurer did not cover. The insurer paid the compensatory damages plus prejudgment interest on these damages.

[63]In two additional cases, physicians with excess insurance policies made out-of-pocket payments totaling $74,000. In two other cases involving a physician and a hospital, two physicians and one hospital made out-of-pocket payments totaling $776,000.

Figure 7:   Who pays above limits?
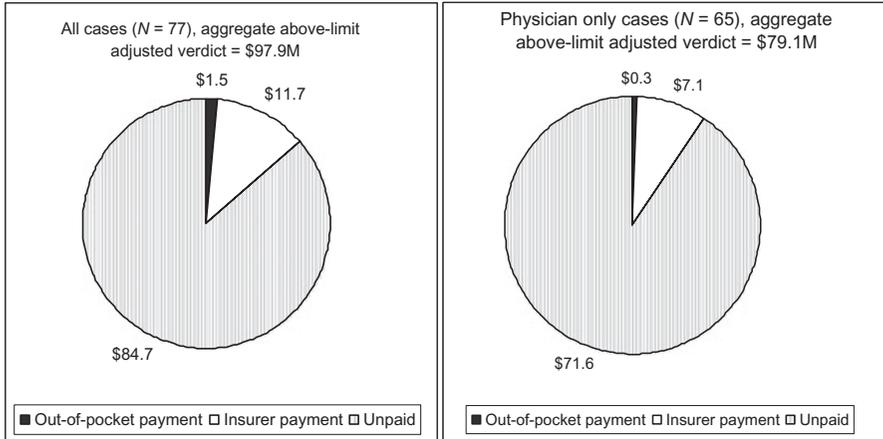
NOTE: Sources of payouts for portion of adjusted verdict that is above limits, for all above-limits, single-payer (physician single-payer), plaintiff jury verdicts in the BRD_{minus} data set of nonduplicate medical malpractice claims closed from 1988–2003 with a payout greater than $25,000 in 1988 dollars. Amounts in millions of 1988 dollars.

OLS coefficients and standard errors due to the bounded dependent variable and nonnormal residuals.

Regression (1) provides evidence that the per-case haircut significantly increased over the time period of our study. The coefficient on year is greater than 1, indicating that later years produce larger haircuts. We obtain similar results in unreported OLS regressions and consistent results with the Cuzick nonparametric test for trend ($z = -3.64$). Regression (2) controls for ln(adjusted verdict); the trend toward larger haircuts over time remains significant. This trend is stronger in multipayer than in single-payer cases (compare Regressions (3) and (4)).

One possible reason for increasing haircuts could be the time trend toward lower defendant policy limits.[64] In Regression (5), we therefore add ln(policy limits) as a control variable. The coefficient on year declines and becomes insignificant. This is consistent with lower policy limits contributing to the increase in haircuts. Another possible reason, suggested to us by Texas practitioners, may be the trend, beginning in the early 1990s, for Texas

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[64]Such a trend exists for physicians for the full data set of all closed claims (both tried and settled). See Zeiler et al. (2007)

Table 16: Haircuts Over Time

	1	2	3	4	5
Sample	*All Cases*		*Multipayer Cases*	*Single-Payer Cases*	
Dependent variable	*(adjusted verdict—payout)*				
Year	**1.075**	**1.08**	**1.158**	1.026	1.026
	(2.13)**	**(2.29)****	**(4.18)*****	(0.88)	(1.05)
Ln(adjusted verdict)		**1.38**	1.17	**1.63**	**2.35**
		(2.92)***	(1.48)	**(3.29)*****	**(7.94)*****
Ln(policy limits)					**0.44**
					(−5.18)***
N	288	288	81	206	205

NOTE: GLM regressions, with family (binomial, adjusted verdict) and a logit link, of (adjusted verdict − payout) on indicated independent variables, for plaintiff jury verdict cases with payout ≤ adjusted verdict (within ±2%), for the BRD_{minus} data set of nonduplicate medical malpractice claims closed from 1988–2003 with payout >$25,000 in 1988 dollars. Coefficients indicate the factor by which one multiplies the odds ratio for the dependent variable (which equals (fraction of adjusted verdict uncollected)/(fraction collected)) for a one unit increase in the independent variable. All regressions excludes two outlier multi-defendant cases with large punitive damage awards. Regressions (4 and 5) exclude one additional single-payer outlier. Regression (5) excludes one case with missing policy limit. Amounts in thousands of 1988 dollars. z statistics, based on robust standard errors, are in parentheses. ** and *** indicate significance at the 5 percent and 1 percent levels, respectively. Significant results are in **boldface**.

appellate courts to become more pro-defendant. This shift could increase the value to defendants of a threat to appeal, and thus potentially produce larger haircuts in post-verdict settlements.

I. Verdict Bonuses

Payment exceeded 102 percent of the adjusted verdict in 16 of the 306 plaintiff verdict cases (5 percent). The verdicts in bonus cases are usually relatively small and the bonuses are usually modest, relative to the adjusted verdict. The mean (median) adjusted verdict in the 16 bonus cases was $290,000 ($182,000) compared to an overall sample mean (median) of $1,576,000 ($433,000). The mean (median) bonus was $70,000 ($27,000).

There are also 35 cases in our data set with jury verdicts for the defense, plus eight cases in which the judge directed a defense verdict, with a mean (median) payout of $206,000 ($137,000). Many of the payouts occur very rapidly after defense verdicts, sometimes on the same day as the verdict. Overall, about half (22/43) of payouts after defense verdicts occur within 30 days of the verdict, compared to 29 percent (90/306) of payouts after plaintiff verdicts [(t statistic for difference-in-proportions test = 2.89,

$p < 0.01)$]. Medical malpractice lawyers advised us that many of these quick payouts likely reflect high-low agreements. However, we cannot be sure of this because TDI does not ask insurers whether a settlement resulted from a high-low agreement.

Other verdict bonus cases that follow defense verdicts, especially those where the plaintiff appeals and the case is settled some years after trial, likely reflect settlement in the shadow of the risk of appellate reversal. Some, especially those with smaller payouts, could reflect a defense conclusion that it will be cheaper to settle than to defend the appeal. Payment did not exceed policy limits in any of the verdict bonus cases.[65]

VI. Discussion

For our sample as a whole, juries awarded more than twice as much as defendants ultimately paid ($482 million vs. 212 million). Haircuts are common in cases involving all types of defendants. The probability and size of the haircut increases with the size of the adjusted verdict and increases sharply when the adjusted verdict is above policy limits.

A. *The Sources of Post-verdict Haircuts*

Legal scholars have emphasized the importance of judicial oversight in controlling jury decision making. We find, in contrast, that direct judicial oversight (remittitur, jnov, and appellate reversal) is far less important than is widely believed. Other factors, especially policy limits, have a far greater direct impact on payouts than does judicial oversight. To be sure, the threat of appellate reversal could account for some of the observed haircuts, and we could lose some jnov and appellate reversal cases from our data set entirely if they lead to a payout of under $25,000.

The same is true, though less dramatically, for the statutory damages caps Texas had in place during this period (punitives cap and death cap). We do not directly study other caps, such as the cap on noneconomic damages that Texas adopted in the fall of 2003, which took effect too recently for cases affected by this cap to be included in our data set. Still, caps of any sort should reduce recoveries only to the extent that the above-cap amounts were other-

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[65]Of the 20 bonus cases with policy limits less than the adjusted verdict and payout greater than the adjusted verdict, in only one case was the payout at or near the policy limits. In this case, the payout was 100 percent of the policy limits. The next highest proportion of limits paid was 77 percent.

wise likely to be collected. Our results suggest that limits on collectibility—of which policy limits and limited plaintiff ability to collect above limits are the most important—substantially mute the real-world impact of statutory caps.

B. The Central Role of Policy Limits

It is clear that policy limits effectively cap recovery in many cases, but less clear why. One study indicates that plaintiffs' attorneys have a strong norm of not pursuing personal assets, but the source and strength of this norm are unclear.[66] Press reports suggest that many physicians employ asset-protection strategies, which could both encourage physicians to purchase policies with low limits and also discourage plaintiffs from seeking to collect above limits.

Whatever the reason, plaintiffs' lawyers consider collecting from physicians to be sufficiently difficult that most do not even try. We interviewed a number of medical malpractice plaintiff and defense lawyers in Texas. All the plaintiffs' lawyers agreed that they would not pursue a case against a physician if the policy limits were insufficient to justify bringing the claim. Absent unusual circumstances, they treated policy limits as a hard cap on recovery. The prospect of an out-of-pocket payment was remote enough so that none of these lawyers routinely even investigated defendant physicians' wealth.

Policy limits thus may serve as a form of defendant self-help—a kind of de facto cap, which is usually (though not always) effective in limiting recovery. The availability of de facto caps, often with relatively low limits, makes statutory caps less important in explaining payouts.

Of course, there are also haircuts in below-limits cases. Below-limits haircuts are responsible for a sizeable amount of haircut dollars and reflect the impact of factors other than the direct effect of policy limits on settlement dynamics.

Policy limits may also provide a focal point for negotiating a high-low agreement. Since policy limits often cap recoveries, they provide an obvious upper bound for the "high" in a high-low agreement. Plaintiffs might well agree on a "high" somewhat below policy limits in exchange for an assured "low," regardless of how the case comes out.

A puzzle for future research: When, why, and in what amounts do potential medical malpractice defendants buy excess insurance policies, rather than a larger primary policy, and how does the presence or absence of

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[66]Baker (2001).

an excess policy affect payouts? We have too few data on excess policies to explore these questions.

C. Above-Limits and Out-of-Pocket Payments

Physicians are reported to be greatly concerned about the risk of personal exposure and bankruptcy if they suffer an adverse jury verdict that exceeds their policy limits. Media coverage often focuses on physicians who quit or limit their practice due to fear of liability. Yet many physicians buy policies with limits that are moderate relative to likely damages, when larger-limit policies are readily available. As Table 12 indicates, the ratio of mean (median) policy limits to mean (median) adjusted verdict for physicians in single-payer cases in our data set was only 0.9 (1.9). About 20 percent (34/169) of physicians who faced adverse jury verdicts had real policy limits of $200,000 or less—well below the mean and median adjusted verdict. In contrast, for physician-only cases in the NAR data set that were resolved without a full trial, the proportion of physicians with real limits of $200,000 or less rises to 34 percent.[67] Apparently, physicians with low-limit policies face less risk of a trial, perhaps because plaintiffs are not willing to invest the resources needed to bring a case to trial.

Physicians who buy low-limits policies are gambling that even if they are hit with an above-limits verdict, they will not suffer material financial hardship. An out-of-pocket payout following an above-limits verdict requires a combination of events: (1) a malpractice case must be filed; (2) it must go to trial; (3) the jury must find for the plaintiff; (4) the verdict must be above limits; and, finally, (5) the physician must thereafter make an out-of-pocket payment. There were only nine instances in 16 years in which physicians made *any* out-of-pocket payment after a jury verdict. Even if the first four factors are present, physicians *still* face limited risk—they paid out of pocket in only 6 percent (4/65) of the above-limits single-payer physician-only cases, with a mean (median) payment of $83,000 ($85,000). The risk of an out-of-pocket payment without a trial is also quite small.[68] Thus, the low-limits gamble may well be rational.

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[67]See Zeiler et al. (2007). Of 6,169 single-payer claims against physicians resolved without a verdict, 2,098 (34 percent) involved real policy limits of $200,000 or less. A two-sample test of proportions indicates that this proportion is significantly higher than the proportion of physicians with policies of $200,000 or less who faced adverse jury verdicts (difference = 14 percent; $z = 3.80$). Both the jury verdict sample and the nonjury verdict sample include duplicate reports.

[68]See Zeiler et al. (2007).

When payments are made above limits, the principal payers are insurers, not defendants. This finding, which also applies to settled cases, deserves further study: How do legal rules and settlement negotiation dynamics— either before or after trial—contribute to this practice? Why do insurers sometimes pay above limits, and by how much? One possible explanation is settlement in the shadow of the defendant's *Stowers* claim against an insurer who negligently refuses to settle a claim within policy limits.[69] Some above-limits payments by insurers may represent insurers "buying off" their *Stowers* exposure in cases they take to trial after refusing a within-limits settlement offer. Plaintiffs' counsel advised us that they often make an at-limits *Stowers* offer before trial to set up this dynamic. However, unless *Stowers* or another reason for insurers to pay above limits applies, most of the above-limits portion of adjusted verdicts in single-payer cases will never be paid.[70]

The frequency with which physicians buy low-limits policies, and the effectiveness of these de facto caps, suggests that regulation of policy limits should perhaps become a subject of discussion. In other areas where defendants have limited personal wealth, including auto accidents and home construction, states often mandate minimum insurance levels. Alternatively, physicians could be required to disclose to their patients how much medical malpractice insurance they are carrying, or state legislators could enact a patient compensation fund. Currently, a number of states (but not Texas) have financial responsibility laws that regulate how much malpractice insurance a physician must purchase.[71]

One might expect haircuts to be larger, the impact of policy limits to be greater, and the likelihood of an out-of-pocket payment to be lower in single-payer cases with a physician as defendant, compared to single-payer cases involving hospitals or nursing homes, which may have greater assets. We did not find any of these effects. These findings present a puzzle for future research.

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[69]See G.A. Stowers Furniture Co. v. American Indem. Co., 15 S.W.2d 544, 547 (Tex. 1929).

[70]Most above-limits payments in settled cases are also made by insurers. See Zeiler et al. (2007). The reasons for insurers to pay above limits in these cases are unclear. Some payments could involve *Stowers* risk as well, if the insurer had rejected an earlier within-limits settlement offer.

[71]*See* AMA, Liability Insurance Requirements ⟨http://www.ama-assn.org/ama/pub/category/4544.html⟩.

D. Bargaining in the Shadow of the Expected Payout

Like other civil claims, most medical malpractice claims are resolved without a trial. It is commonly believed that parties "bargain in the shadow of the law," with both sides negotiating in light of the expected trial outcome. The conventional wisdom—and a standard assumption in the literature modeling tort outcomes—is that the present value of a settlement should reflect the present value of the expected outcome at trial.[72] Tort reformers accordingly assert that extremely large verdicts, even if infrequent, increase the "bargaining floor" for future claims.[73]

We find, however, that the visible signals of case value (i.e., jury verdicts) routinely exceed the amounts ultimately paid to resolve cases. Insurers and plaintiffs' lawyers are repeat players and surely understand this dynamic. They should base pretrial settlements on expected posttrial payouts, rather than on expected verdicts. Blockbuster verdicts should affect settlements only to the extent that these verdicts are collectible—which they often are not, at least for our data set.

Our findings on settlement payouts and trial rates are consistent with the view that expected payouts, not expected verdicts, drive settlements. If plaintiffs were hypothetically to demand higher settlements in response to a large verdict or two, defendants could either agree (leading to higher average settlements) or refuse (leading to more trials). We found no evidence of either effect in our data. Over the 16-year period we studied, there were no time trends in mean and median payment per claim or trial rates, and no observable tendency for settlements to rise in years following large verdicts.

E. Statutory Caps

There has been great controversy over awards of noneconomic damages in medical malpractice cases and many states have adopted caps on noneco-

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[72]See, e.g., Mnookin and Kornhauser (1979). For more recent surveys, see Hay and Spier (1998:442–50); Shavell (2004:ch. 17).

[73]See, e.g., Ted Frank ⟨http://www.pointoflaw.com/columns/archives/001060.php⟩ ("First, the ratchet of increasing jury verdicts creates settlement leverage for malpractice plaintiffs by increasing the range of plausible results. There's a lottery-ticket effect: even a small chance of winning tens of millions of dollars has significant value."). See also Department of Health & Human Services (2003) ("Even though few cases end with mega jury awards, they encourage lawyers in the hope that they can win this litigation lottery, and they influence every settlement that is entered into.").

nomic damages.[74] Texas adopted a cap of $250,000 (not adjusted for inflation) on noneconomic damages in 2003, near the end of our sample period.[75] Similar caps have been proposed at the federal level. There has also been controversy over large punitive damage awards in tort cases, including medical malpractice cases. As noted above, Texas capped punitive damages throughout the period we study.

We take no position in this article on the merits of such caps, but note that caps of any sort will reduce recoveries only to the extent that the above-cap amounts would otherwise have been collected. The de facto caps created by policy limits will thus mute the impact of statutory caps on payouts. In our data set, the direct effect of statutory caps explains a moderate fraction of the aggregate dollar haircut in single-payer cases using a caps-first approach, but a much smaller fraction using a limits-first approach. The effectiveness of policy limits in capping recoveries could help explain the mixed findings in several recent studies on the effect of caps on overall malpractice payouts and malpractice insurance premiums.[76]

Moreover, at least in Texas, physician policy limits in all cases with large paid claims remained roughly flat in nominal terms, and thus declined in real terms, for policies purchased from 1988–1999. This implies that policy limits became an increasingly strict constraint on recoveries as our sample period progressed. Indeed, as the de facto caps created by policy limits become stricter, statutory caps become less important. Consider, for example, the Texas death cap. In 1988, the death cap was $975,000, but 55 percent (258/466) of the physician-defendants in our data set for claims closed in that year had policies of less than this amount. Aside from the risk of an out-of-pocket payment, the death cap had little bite for these physicians. By 1999, the real death cap was unchanged (since it was adjusted for inflation), but the percentage of physicians with policies less than this amount had increased to 93 percent (660/713).

F. Future Research

Our findings have implications for a number of issues, including the practical effect of statutory caps on noneconomic damages given the separate

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[74]See Avraham (2006b).

[75]Tex. Civ. Prac. & Rem. Code § 74.301 (effective Sept. 1, 2003). As noted previously, because there is a time lag from filing to jury verdict, this cap does not affect our sample.

[76]See, e.g., Avraham (2006a); Zeiler (2006); Sharkey (2005).

constraint of policy limits, how plaintiffs select cases for trial, and how lawyers advertise case outcomes. We are addressing these and other issues in future articles.

G. Representativeness

We have information on only one state and study only medical malpractice cases. Although hospitals are involved in a substantial number of malpractice claims, some are self-insured, while our data set is limited to insured claims. Moreover, outcomes in cases against insured hospitals could differ from those in cases against self-insured hospitals. These limitations raise obvious questions about the representativeness of our findings. Although our findings are broadly consistent with those in the literature, further research will be necessary to determine whether our findings are representative of other areas of civil litigation, other types of defendants, and other states.

VII. CONCLUSION

This article relies on a database of insured, Texas medical malpractice claims, closed from 1988–2003. It provides the most comprehensive longitudinal study of the relationship between jury verdicts and post-verdict payouts in medical malpractice cases (or, indeed, in any form of tort litigation), and of the factors that affect actual payouts. Texas is a useful setting for assessing jury verdicts and post-verdict payouts. It is the second largest state by population, is often thought to be a pro-plaintiff state, and did not enact major damage cap reforms during the period we study. Texas was also declared to be in a "malpractice crisis" by the American Medical Association in 2002, and four counties in Texas were designated "judicial hellholes" by the American Tort Reform Association in the same year.[77] If there were a short list of states where one might expect to find runaway juries, soaring verdicts, and physician out-of-pocket payments, Texas would be on it.

We find, instead, stable, perhaps gradually increasing verdict amounts, infrequent out-of-pocket payments, and a large gap between adjusted verdicts and payouts. The larger the adjusted verdict, the more probable and larger the haircut. Haircuts also appear to be increasing in size over time. Payments above policy limits were uncommon and came primarily from

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[77] ⟨http://www.atra.org/reports/hellholes_report_2002.pdf⟩; AMA: Medical Liability Reaches Crisis in Texas ⟨http://www.bizjournals.com/Austin/stories/2002/06/17/daily36.html⟩.

insurers. Out-of-pocket payments by defendants were rare, even in the worst-case outcome of an adverse verdict above policy limits. There were a few enormous verdicts, but these were generally settled for much smaller sums. Yet when Texas enacted malpractice reforms in 2003, jury verdicts were central to the public debate, while payouts were not. In our view, this meant that much of the Texas debate over tort reform was based on an incomplete and potentially misleading factual foundation.

Only a small fraction of the gap between verdicts and payouts is attributable to the direct effects of judicial oversight (whether from remittitur, jnov, or appellate reversal). A moderate fraction is explainable by the direct effect of damages caps, but much of the above-cap amounts might not have been collected in any case. Instead, it appears that a combination of insurance policy limits and the rarity of above-limits payments by defendant-providers explain the bulk of the gap. In addition, other factors that we cannot directly quantify, including risk aversion, reluctance to collect from personal assets, the parties' desire to bring the case to a close, and the use of high-low agreements, probably explain some of the gap. Even where the adjusted verdict is well within the policy limits, there are haircuts, albeit much smaller than the haircuts that are typical for above-limits cases.

Although tort reform advocates focus on statutory caps, and legal scholars focus on judicial oversight, most of the action in post-verdict payouts lies elsewhere. To paraphrase Willie Sutton, policy and legal analysts have been casing a bank without much money in it, while ignoring the much richer bank next door. At least in single-payer cases, policy limits are where the haircut dollars are. The parties surely bargain in the shadow of the jury, but in most cases, the terms of the bargain are shaped by the shadow of coverage.

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Appendix A: Prior Research on Post-verdict Adjustments and Payouts

This appendix provides additional details on the prior research on post-verdict adjustments and payouts that is summarized in Table 1.[78] Most studies start with a set of verdicts, and obtain partial information on post-verdict adjustments by courts. One study starts with data on payouts and looks for matching data on verdicts. None of the studies takes into account postjudgment interest or policy limits. Only one study adjusts for inflation.

Larger Studies

We consider first the three studies with sample sizes over 100. These studies all rely on commercial verdict reporters to obtain jury verdicts, and on verdict reporters or surveys of lawyers as their source of data on post-verdict adjustments and payouts. Commercial reporters are biased toward including larger verdicts because they rely on reports by plaintiffs' lawyers for many of their cases and these lawyers tend to report their more important (i.e., successful) cases. Commercial reporters could also be biased in the cases for which they contain data on post-verdict adjustments. Plaintiffs' lawyers may be more likely to report cases where they collect larger awards. Post-verdict adjustments are also more likely to be reported if they occur soon after the verdict. As the descriptions that follow make clear, information on post-verdict adjustments due to remittitur or statutory caps is much more accessible than information on actual payouts.

Vidmar, Gross, and Rose (1999) studied jury awards and post-verdict adjustments in medical malpractice cases in New York (1985–1997), Florida (1987–1996), and California (1991–1997). They did not have information on actual payouts. This is the only prior study that adjusts for inflation. The mean (median) per-case haircut was 38 percent (27 percent) of the verdict in New York, 8 percent (7 percent) in Florida, and 10 percent (11 percent) in California. In New York, the larger the verdict, the more likely it was to be

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[78]Citations to the studies are provided in Table 1.

trimmed, and the larger the haircut: "some of the largest awards ultimately resulted in settlements between 5 and 10 percent of the original jury award." The authors treated a verdict reduction due to comparative negligence as a decrease in the jury verdict, but it was not possible to determine how large an impact this had on their findings.

The other two larger studies are somewhat dated. Broder (1986) studied jury awards of $1 million or more that occurred anywhere in the United States during 1984–1985. She surveyed attorneys involved in the cases for information on actual payouts. It is unclear how many of the cases in her sample involved medical malpractice.[79] Medical malpractice verdicts received an aggregate dollar haircut of 31 percent and a mean per-case haircut of 27 percent. Across all cases, the aggregate dollar haircut was 57 percent and the mean per-case haircut was 30 percent. The study is limited by its focus on large verdicts and its minimal evaluation of the factors that explain these haircuts.

Shanley and Peterson (1983) studied jury verdicts from Illinois and California from 1982–1984, and surveyed the involved attorneys to obtain information about payouts. They obtained verdicts using a database maintained by the Institute for Civil Justice, which was based on information gathered from jury verdict reporters. They found that payout was less than the verdict in about 25 percent of plaintiff verdict cases, with larger reductions in cases involving larger verdicts. For all cases, they found an aggregate dollar haircut of 29 percent, with mean per-case haircuts ranging from 7 percent for verdicts under $100,000 to 43 percent in cases with verdicts over $10,000,000. The haircut varied depending on the type of case, with medical malpractice cases having slightly higher haircuts (without controlling for size) than their sample as a whole. In the cases that were resolved with a haircut, more than half the time (62 percent), the parties settled for less than the verdict, with court-ordered reductions (23 percent), difficulties collecting the judgment (13 percent), and unspecified factors (2 percent) accounting for the balance. In 2 percent of plaintiff verdict cases, payments exceeded verdicts.

Smaller Studies

The remaining studies have small sample sizes (50 or less) and most did not conduct regression analysis, which limits what one can learn from them. The

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[79]Broder's original data set included 472 cases, but information on post-verdict adjustments was available only for 198 cases. Medical malpractice cases comprised 18.9 percent of the larger data set. Broder did not provide a breakdown for the smaller data set, but if the same proportion applied there would be 37 medical malpractice cases.

most recent study, by Vidmar, MacKillop, & Lee (2006), is on Florida medical malpractice cases in which more than $1 million (nominal) was awarded between 1990 and 2003. The authors rely on a Florida closed claim database that includes data on payouts but not on verdicts. The authors hand-collected 50 matching verdicts by searching court dockets. The authors did not adjust for inflation, or calculate pre- and postjudgment interest. They found that the mean per-claim haircut was 33 percent of the verdict, with larger verdicts generally receiving larger haircuts. The authors do not study factors other than verdict size that might affect haircuts; their assessment of the effect of size is weakened because their sample is limited to larger verdicts; and they offer no regressions or other statistical tests of their results.

Vidmar, Robinson, & MacKillop (2006) conducted a similar study on Illinois medical malpractice cases, using data gathered from jury verdict reporters. The study focused on jury verdicts in Cook and DuPage Counties from 2001, and found an aggregate dollar haircut of 42 percent. The authors were only able to obtain post-verdict adjustment data for a fraction of the cases they identified (12/45).

Viscusi (2004) studies cases with "blockbuster" punitive damage awards of at least $100 million from 1985–2003. These cases were identified using various computer databases and media reports. Most of the cases involved jury trials and large corporate defendants. Viscusi was only able to determine post-verdict adjustments and/or actual payouts for 10 of the 64 cases in his data set; two of these were medical malpractice cases—one involving a nursing home and the other involving a lawsuit against a physician and a drug company. As Viscusi notes, "nondisclosure of the settlement amount appears to be the norm for such settlements." Limitations of the study include its focus on extremely large punitive damage verdicts and the small number of cases for which information on post-verdict adjustments or payouts was available.

Merritt and Barry (1999) study a small sample of medical malpractice and products liability cases over a 12-year period in a single county in Ohio. The authors identified verdicts using verdict summaries prepared for the Columbus Bar Association and three commercial verdict reporters. They analyzed verdicts and post-verdict adjustments based on these sources and limited searches of court files. The authors did not adjust for inflation, or calculate pre- and postjudgment interest. They found that verdicts were reduced in 10 of 35 medical malpractice cases (28 percent), including four of the five highest awards. In four of the 10 cases with haircuts, settlement was after an appeal was filed, but before the appeal was heard. The mean per-case haircut was approximately 25 percent. They also study nine product

liability cases; none had a haircut relative to the verdict. The limitations of this study include its small sample, its focus on a single county, and the potential sample selection bias due to their data sources.

Professor Vidmar has also prepared an unpublished report on medical malpractice cases in Pennsylvania (2002), in which he studied 22 cases involving jury verdicts of greater than $5 million. He was unable to "accurately estimate the total amounts received by plaintiffs," but estimated that the mean per-case haircut was 78 percent for $5–10 million verdicts, and 83 percent for verdicts over $10 million.

Appendix B: Imputation Rules for Pre- and Postjudgment Interest

We impute interest for the cases in which it was not reported following the rules set forth below. The Texas rules for computing prejudgment interest are complex, and were changed or recodified several times over the period we study. Further details, including citations, are available from the authors on request. The postjudgment interest rules, fortunately, are simpler.[80]

Availability of Prejudgment Interest

Prejudgment interest was generally not available for judgments prior to a Texas Supreme Court decision (*Cavnar*) issued on June 5, 1985. *Cavnar* changed the longstanding common-law rule prohibiting prejudgment interest.[81] For jury verdicts before June 5, 1985, we assumed that the plaintiffs did not preserve their right to this interest, and set imputed prejudgment interest = 0.

Prejudgment Interest for Specific Types of Damages

Prejudgment interest was not available on punitive damages for the entire relevant period. It was available for future damages for judgments from September 2, 1987 (when the Texas Legislature first codified the prejudg-

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[80]We expect that few readers will read this appendix, and that even fewer will read the footnotes. If you have gotten this far, then for more than you probably want to know about the Texas rules on prejudgment and postjudgment interest, see Barber and Montford (1988:102–03) (article by the legislative authors of the 1987 statutory amendments); Johnson (2005) (article on the 2003 amendments to these rules); Pemberton (1999) (discussing judicial interpretations of the rules); Carlson (2004:§ 27.31).

[81]Cavnar v. Quality Control Parking, Inc., 696 S.W.2d 549 (Tex. 1985).

ment interest rules) through August 1, 2003. We have no data on which portion of damages is future damages, so we assume this portion is zero. This could lead to overestimating prejudgment interest for cases with verdicts from June 5, 1985–September 2, 1987 (two cases in our sample) or after August 1, 2003 (six cases in our sample).

Availability of Postjudgment Interest

Postjudgment interest was available during the entire relevant period, on the court judgment (including prejudgment interest) plus court costs. We have no data on court costs, so we assume they are zero. This will lead to some underestimation of postjudgment interest. We estimated postjudgment interest for the period from the date of trial to the date when the last-filed claim report involving the claim was closed. This will overestimate postjudgment interest if there is more than one paying defendant and a significant gap between payment dates. We can obtain a lower bound on this overestimate by studying cases in which we have duplicate closed claim reports. For 16 cases involving duplicate claims closed in different years, the overestimate of postjudgment interest was $1.4 million, or 5.4 percent of the total estimated postjudgment interest of $26.9 million.

Date of Court Judgment

The interest rate rules, when they change, generally change based on the date of the court judgment. Prejudgment interest is awarded through the date of court judgment; postjudgment interest accrues thereafter. We have data on the date of the jury verdict but on not the date of court judgment; we assume the two are the same.

Interest Rate

The interest rate on prejudgment interest was 10 percent per year for judgments from June 5, 1985 through August 1, 2003. A 2003 legislative change reduced the rate to 5 percent for judgments after August 1, 2003. The postjudgment interest rate was 10 percent through August 1, 2003, and 5 percent thereafter.[82]

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[82]From September 2, 1987 on, the rate is actually a floating rate with a minimum and a maximum, but it was at the 10 percent minimum for the entire period from September 2, 1987 through August 1, 2003, and at the reduced 5 percent minimum from August 1, 2003 through December 31, 2003.

Compounding

Prejudgment interest was compounded *daily* for judgments from June 5, 1985 through September 2, 1987. After that date, prejudgment interest was *simple.* Postjudgment interest was compounded annually during the whole period.

Period for Which Prejudgment Interest is Available

Prejudgment interest is generally computed from 180 days after the earlier of when the suit was filed or 180 days after written notice of the claim was received. We lack information on when plaintiffs provided written notice to defendants, so use the date a lawsuit was filed as the starting date. This could result in underestimation of prejudgment interest in some cases.

Tolling of Prejudgment Interest Period

For judgments after September 2, 1987, the period for computing prejudgment interest is tolled (or the amount on which it is available is reduced) by a defense settlement offer, depending on how the offer relates to the subsequent verdict. There is also judicial power to toll the prejudgment interest period for plaintiff-caused delay. We do not have data on settlement offers or discretionary tolling, so we assume that neither exist. This could result in overestimation of prejudgment interest in some cases.

Court Decisions on Contested Issues

Some interpretation issues were resolved by court decision. For example, the courts decided only in 2002 that under the 1987 statutory amendments, the death cap applied to the sum of (compensatory damages + prejudgment interest), rather than to compensatory damages alone.[83] We assume that these interpretations were in effect for the entire period the statute was effective. The understandings of the parties or the trial judge may differ in some cases.

APPENDIX C: GLOSSARY OF SELECTED TERMS

Above-limits cases: Single-payer cases with adjusted verdict > policy limits.
Adjusted allowed verdict: Adjusted verdict less any reduction due to remittitur, jnov, and statutory caps on damages.
Adjusted verdict: Jury verdict plus prejudgment interest (as reported or, when not reported, as estimated), plus postjudgment interest (estimated based on

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[83]Columbia Hosp Corp. of Houston v. Moore, 92 S.W.3d 470, 474 (Tex. 2002).

statutory rate), See Appendix B for the rules we used to estimate pre- and postjudgment interest.

Aggregate dollar haircut: Defined for a set of cases, indexed by i, as:

$$\text{aggregate } dollar \text{ haircut} = \left(\sum_i adjusted\ verdict_i - \sum_i payout_i \right).$$

Aggregate fractional haircut: Defined for a set of cases, indexed by i, as:

$$\text{aggregate } fractional \text{ haircut} = 1 - \frac{\sum_i payout_i}{\sum_i adjusted\ verdict_i}.$$

Below-limits cases: Single-payer cases with adjusted verdict < policy limits.

Haircut: Defined for all 306 plaintiff jury verdict cases in the BRD_{minus} data set as a nonnegative fraction of the adjusted verdict:

$$haircut = \max \left\{ 0, 1 - \frac{payout}{adjusted\ verdict} \right\}.$$

Thus, haircut is defined to be nonnegative; it equals 0 for cases with payout > adjusted verdict.

Mean (median) per-case haircut: Defined for a sample of cases as the mean (median) of the haircuts for the individual cases in the sample.

Multidefendant case: A case in which two or more defendants were sued by the plaintiff.

Multipayer case: A case in which payments were made by two or more defendants, or by both a primary and excess insurance carrier for a single paying defendant.

Primary report: When there are two or more claim reports relating to the same injury, we treat the last report as the primary report and earlier reports as "duplicate" reports. Except when assessing out-of-pocket payments by defendants, we include only primary reports in our data set.

Single-defendant case: A case in which only one defendant was sued by the plaintiff.

Single-payer case: A case in which payment was made by only one insurer, on behalf of only one defendant. We treat a case with payments on behalf of a single defendant by both a primary and excess insurance carrier as a multipayer case.

Year: Coded in regressions as (Year − 1988).