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Abstract

State punitive damages reforms have altered how courts award punitive damages. We model the decision to award punitive damages as a two-step process involving the decision to award any punitive damages and the decision of what amount to award. For the Civil Justice Survey of State Courts samples of trial court verdicts, punitive damages caps reduce the amount of damages awarded but do not affect whether they are initially awarded. In contrast, the effect of punitive damages reforms on blockbuster punitive damages awards of at least $100 million is to reduce the incidence of these awards, but not their amount.

Keywords: punitive damages, tort reform, damages caps, blockbuster awards

JEL Codes: K13, K41

I. Introduction

Punitive damages are unique in the American civil justice system. They are not designed to compensate victims as do compensatory damages, but they are not quite equivalent to full criminal sanctions. According to the Supreme Court of the United States, punitive damages serve to punish particularly egregious behavior and deter wrongdoing in the future.[1] By increasing the costs a defendant must pay if she injures someone beyond the amount required to compensate the victim, punitive damages can efficiently deter harmful behavior if the defendant knows she will not be held liable for her actions with 100% certainty. In this way, punitive damages can discourage individuals and firms from engaging in harmful behavior or encourage them to take appropriate precautions to decrease the risk of harm to others.

However, while appropriately calibrated punitive damages can efficiently deter harmful behavior, incorrectly calibrated damages can under-deter or over-deter individuals. Historically, researchers and policymakers have been more concerned with over-deterrence than under-deterrence, as evidenced by the concern over the perceived "liability crisis" that occurred in the 1980s and 1990s. Punitive damages can chill individuals and firms from taking desirable actions such as introducing products posing novel risks if they fear large damages awards that go beyond the amount necessary to discourage risky behavior. At the highest end of the punitive damages spectrum, blockbuster punitive damages awards, which are awards greater than $100 million, follow a fat-tailed distribution similar to those followed by hurricanes, earthquakes, and other natural disasters (Viscusi and McMichael 2014). The fat-tailed character of the distribution makes it difficult for individuals to predict their potential liability which, in turn, undermines the ability of punitive damages to effectively deter individuals.

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[1] See, e.g, *BMW of North America v. Gore.* 517 U.S. 559 (1996).

The Supreme Court has taken note of the unpredictability of punitive damages awards, and beginning in 1996, the Court began to curtail the size and limit the process by which punitive damages are awarded. Three primary cases succinctly summarize the Court's treatment of punitive damages: *BMW of North America, Inc. v. Gore* (1996), *State Farm v. Campbell* (2003), and *Philip Morris USA v. Williams* (2007). In all three cases, the Court limits "grossly excessive" awards that violate notions of fundamental fairness, do not provide adequate notice to parties that they may be subject to large awards (i.e., are unpredictable), and do not further the legitimate interests of the state. In *State Farm*, the Court specified a size limit on punitive damages awards, restricting them to no more than ten times the amount of compensatory damages in most cases.[2]

A number of states also have enacted tort reforms aimed at reducing or controlling punitive damages awards. Five states disallow punitive damages to some extent. The most common state reform aimed at limiting punitive damages is a cap on award sizes. For example, North Carolina caps the amount of punitive damages a court may impose at the greater of $250,000 or three times the amount of compensatory damages. Table 1 provides an overview of all states that have enacted caps along with the date of enactment. Twenty-three states have enacted a cap, and four states have repealed their caps. In general, the adoption of caps became popular starting in the 1980s, but adoptions and repeals continued throughout the 1990s and picked up in the early to mid-2000s.

Despite the fact that punitive damages are awarded in less than 5% of cases (depending on the type of case), they have received a fairly substantial amount of attention in the law and economic literatures. Bentham (1789) first proposed the idea that a court must inflate damages to appropriately deter injurers if they have a chance to escape liability. Later work by Becker (1968),

[2] The Court held that that "few awards exceeding a single-digit ratio between punitive and compensatory damages, to a significant degree, will satisfy due process." *State Farm Mut. Auto. Ins. Co. v. Campbell*, 538 U.S. 408, 415–23 (2003).

Cooter and Rubinfeld (1989), and Polinsky and Shavell (1998), among others, formalized Bentham's idea into a more general theory of deterrence. In general, to efficiently deter an individual, a court should impose an amount of punitive damages so that the total harm inflicted is equal to the sum of compensatory and punitive damages multiplied by the probability of the defendant being held liable. Neither the state reforms nor the US Supreme Court has adopted this framework.[3]

Examining a sample of trials across the country in 1992 and 1996 collected by the Bureau of Justice Statistics as part of the Civil Justice Survey of State Courts (CJSSC), Eisenberg et al. (2002) found no significant relationship between jury trials and the size of punitive damages awards. However, using models that more specifically isolated the potential effect of juries, Hersch and Viscusi (2004) found that juries are both more likely to initially award punitive damages and impose, on average, larger awards. Expanding the sample of cases considered to include four separate years of the CJSSC (1992, 1996, 2001, and 2005), Eisenberg and Heise (2011) also found systematic differences between the awarding behavior of judges and juries.

The effect or non-effect of *State Farm* has, along with the role of juries, dominated the empirical literature on punitive damages. Del Rossi and Viscusi (2010) found that *State Farm* had a negative effect on blockbuster punitive damages awards. Eisenberg and Heise (2011) and McMichael (2013), on the other hand, found no statistically significant *State Farm* effect in the CJSSC national sample of cases in that there was no apparent downward shift in punitive damages in 2005 as compared to 1992, 1996, and 2001. However, *State Farm* effectively "thinned" the fat-

[3] Implementing this approach raises practical problems in that ex post the probability of detection for an identified defendant is 1.0. Implementing the formula also raises problems of jury competence (Viscusi 2002) and fairness (Sunstein, Schkade, and Kahneman 2002).

tailed distribution of blockbuster punitive damages awards, reducing their size and increasing their predictability (Viscusi and McMichael 2014).

While researchers have considered the effect of *State Farm*, the role of state level reforms has not received much attention in the empirical literature on punitive damages. Examination of the effect of state punitive damages caps on medical malpractice payments found no statistically significant impacts in Viscusi and Born (2005) and Born, Viscusi, and Baker (2009). Some studies have considered reforms such as punitive damages caps as part of a larger analysis of the effect of tort reforms. For example, Avraham and Schanzenbach (2010) examine how punitive damages caps, among other tort reforms, affect the probability of individuals obtaining health insurance, Currie and Macleod (2008) consider the effect of punitive caps on the rates of obstetric procedures, and Viscusi (1998) considers the effect of punitive damages on various risky activities. However, there is very little evidence of an effect of punitive damages caps on punitive damages awards themselves.

This paper explores the role of punitive damages caps and other punitive damages reforms on awards using a two-part model of the judge/jury decision to award punitive damages. The punitive damages calculus involves both discrete and continuous decisions. An adjudicator must decide whether to award punitive damages as well as the amount to award. We examine the effect of state punitive damages reforms using two different data sets—the Civil Justice Survey of State Courts (CJSSC) data, which provides a broad national sample of state courts, and a sample of blockbuster punitive damages awards of at least $100 million. The most salient state punitive damages reforms—damages caps—have quite different impacts in these two samples. For the CJSSC sample, we find that punitive damages caps effectively reduce the amount of punitive damages awarded at trial by about 60% but have no statistically significant effect on the adjudicator's decision to award punitive damages. For the blockbuster award sample, punitive damages caps lead to a decrease in the number of blockbuster awards. Thus, caps reduce the number of awards that cross the blockbuster threshold of $100 million. However, conditional on crossing that threshold, we find that caps have no statistically significant effect on blockbuster punitive damages awards.

II. The Effect of Punitive Caps and Other State Reforms on the Decision to Award

A. State Reforms

While much of the attention on measures designed to attenuate punitive damages have focused on the role of *State Farm* and federal cases, states arguably play a greater role in how courts award punitive damages. Several states have simply banned punitive damages,[4] and several other states ban them in general and only allow their imposition in specifically authorized circumstances.[5] However, the extreme policy choice of banning punitive damages is not common, and to date, only five states have banned punitive damages in all or all but a few specified case types (Avraham 2011).

Among the states that do permit punitive damages awards but attempt to limit or control them in some way, punitive damages caps are a common option. These caps take a variety of forms. Some states, such as North Carolina, prohibit punitive damages over an absolute dollar value or a multiple of the compensatory damages award in the same case. North Carolina does not permit a court to exceed this cap, but Georgia, which has a cap of similar form to North Carolina, allows courts to ignore the cap if the defendant's behavior was particularly egregious. Mississippi

[4] These states include Louisiana, Nebraska, and Washington.
[5] These states include Massachusetts and Michigan.

has a relatively complicated punitive damages cap that shifts depending on the net worth of the defendant.

Our analysis does not explore the mechanism by which punitive damages caps exert their influence. Jurors are not generally aware of the cap. However, one would expect plaintiffs' attorneys to adapt by requesting an award that is likely to be in compliance with a cap, and judges can also limit awards as well. The 2005 CJSSC data included a question on whether the plaintiff sought punitive damages. As discussed below, we found no significant effect of damages caps or other state legal regimes on such requests.

While punitive damages caps have been the most popular approach for states seeking to limit punitive damages awards, some states have attempted to control punitive damages awards through more indirect means by changing the process by which courts impose damages or the standards that plaintiffs must meet to obtain awards. One reform that changes the process by which courts make decisions about punitive damages is to require or allow (at the request of one or both parties) bifurcated trials. In a bifurcated trial, the decision of whether to award punitive damages and the amount of those damages occurs in a separate trial process from the decisions of liability and whether to award other damages.

States can also change the dynamics of the decision to award punitive damages by changing the underlying legal standards plaintiffs must meet to obtain an award. In civil cases, plaintiffs must usually establish their claims by a preponderance of the evidence, which most courts interpret as requiring the plaintiff to establish that it is more likely than not that her claims are true. Some states have raised this evidentiary standard from a preponderance of the evidence standard to a clear and convincing evidence standard. Courts disagree on exactly how much stricter a clear and convincing standard is than a preponderance standard, but in all courts, even if the plaintiff establishes that it is more likely than not that her claims are true, she will not necessarily prevail. In general, courts ask whether the plaintiff has clearly convinced the adjudicator of the truth of her claims as opposed to asking whether it is more likely that the plaintiff's or defendant's claims are true. A few states have even increased the evidentiary standard to beyond a clear and convincing standard to a standard of beyond a reasonable doubt—the standard used in criminal trials.

In addition to meeting the evidentiary standard, plaintiffs must also establish that the defendant acted in a certain way in order to obtain damages in a civil trial. Typically, plaintiffs must only establish that a defendant acted negligently in order to obtain damages under a tort theory of liability—most punitive damages cases involve tort law directly or rely on a tort theory of liability. However, many states have increased the conduct standard beyond negligence (or gross negligence) to recklessness or intentionality. Although the language differs by state, under a recklessness standard, a plaintiff must show that the defendant acted with reckless indifference that a given harm would occur or that the defendant ignored a high probability that a given harm would occur. Under a malice or intent standard, the plaintiff must essentially prove that the defendant intended to harm the plaintiff through some action.

B. Modelling the Punitive Damages Decision

To test the effect of different reforms implemented by states to attenuate punitive damages awards, we develop a two-part empirical model. We estimate two-part models instead of familiar difference-in-difference models for three important reasons. First, courts do not award punitive damages very often, and the use of a two-part model more fully captures the potential reasons for the large number of zero punitive damages awards as well as the different ways state-level reforms may alter the decision to award punitive damages. Second, data on punitive damages is generally available only for a limited number of years and a limited number of states. Based on this limited availability, it is generally not possible to obtain sufficient data to allow for the state by state variation over time that is necessary for the identification of difference-in-difference models. Third, even if sufficient data were available, a difference-in-difference estimator would not be appropriate to identify the effect *State Farm* on punitive damages awards, which is one of the primary issues in the punitive damages literature, because this case affected all cases nationwide immediately after it was decided.

A well-known application of two-part models is within the context of the RAND health insurance experiment (Manning et al. 1988). Eisenberg et al. (2015) discuss extensively the appropriateness of using two-part models in connection with punitive damages; however, they do not consider the effect of any legal reforms in their analysis. In the general model, let individuals with an observed outcome be participants in the relevant activity.[6] Let $d = 1$ for participants and 0 for non-participants, and suppose a positive outcome, y, is observed for participants and a 0 outcome is observed for non-participants. For non-participants, only $\Pr(d = 0)$ is observed while the conditional density of the outcome, y, for $y > 0$ is given for participants by $f(y|d = 1)$. A two-part model for the outcome of interest is given by the following:

$$f(y|x) = \begin{cases} \Pr(d = 0|x) & if\ y = 0 \\ \Pr(d = 1|x)\, f(y|d = 1, x) & if\ y > 0 \end{cases} \tag{1}$$

where x is a vector of regressors.

First developed by Cragg (1971), this two-part model (often called a hurdle model) can accommodate what he called excess zeroes, making it an excellent fit for modelling punitive damages. However, we use a slightly different version of this model called the double-hurdle model by Madden (2008). In this model, an observed zero in our context can result from a decision

[6] The explanation here closely follows that of Cameron and Trivedi (2005).

not to award any punitive damages, or an observed zero can result from a zero punitive damages award. Because a zero can result from either of these two ways, it is called a "double-hurdle" model.

Suppose an adjudicator faces the decision of awarding punitive damages, and suppose this adjudicator wishes to set punitive damages to optimize deterrence. Consistent with the Supreme Court's rulings, she only wishes to punish and deter reprehensible acts. When setting punitive damages in a given case, she faces two decisions: (1) whether to award punitive damages given the reprehensibility of the act and (2) what amount of punitive damages is appropriate to deter this type of act. The first decision corresponds to the participation decision described above, and we call this the "award decision." The second decision corresponds to the relevant outcome, *y*, discussed above, and we call this the "amount decision." An adjudicator may decide to award no punitive damages based on one or both decisions. First, she may determine that the defendant's actions were not sufficiently reprehensible to warrant punishment even if she would prefer to deter future defendants from taking similar actions. Second, she may determine that the defendant's actions were sufficiently bad to deserve punishment but that the punitive damages necessary to punish and deter the defendant are zero given other damages and sanctions imposed on the defendant. The fact that juries occasionally award $1 in nominal punitive damages to acknowledge the reprehensibility of the defendant's actions without actually deterring future behavior implies that adjudicators do, in fact, make the decision to award and the decision of the amount to award separately.

Importantly, different types of state reforms may affect adjudicators in different ways at different points of the decision process. For example, damages caps would likely not affect the decision of whether a defendant acted sufficiently reprehensibly to warrant the imposition of punitive damages, so caps likely only affect the second part of the adjudicator's decision process. However, reforms to the conduct or evidentiary standard likely affect whether the adjudicator will find the defendant's actions sufficiently reprehensible but not necessarily the amount of punitive damages necessary to deter that act in the future.

Because the adjudicator's decision process corresponds neatly to a two-part model and because different reforms may have different effects on each decision, we develop a double-hurdle model of the decision to award punitive damages. These models have been applied in many other contexts such as tobacco and alcohol consumption (Madden 2008) and in the consumption of medical services (Manning et al. 1988). Eisenberg et al. (2015) consider a variety of approaches to model legal damages awards and conclude that two-part models are most appropriate for punitive damages.

Both of the hurdles in the adjudicator's decision correspond to individual choices. In the award decision, she must decide whether, given the reprehensibility of the defendants' action, she should impose punitive damages. In the amount decision, she decides what amount will appropriately deter future individuals from repeating the defendant's behavior. A double hurdle model consists of three basic parts: awarded/observed punitive damages awards, the award equation, and the amount equation.

Let *D* represent the amount of damages awarded at trial, and let *D* be given by $D = f(D) = ID_a$ where I is an indicator for whether the adjudicator decides to award punitive damages based on the following award equation:

(2) $$I = \begin{cases} 0 & if \quad A = Z'\alpha + \varepsilon_1 \leq 0 \\ 1 & if \quad A = Z'\alpha + \varepsilon_1 > 0 \end{cases}$$

where Z is a vector of variables influencing the decision to award punitive damages and α is a vector of estimated coefficients. The amount equation is given by $D_a = \max(0, D_m)$, where $D_m =$

$X'\beta + \varepsilon_2$. Here, X represents a vector of variables influencing the decision of what amount of punitive damages to award, and β is a vector of estimated coefficients. The terms ε_1 and ε_2 are additive disturbance terms which are randomly distributed according to a bivariate normal distribution.

Based on this model, the final amount of punitive damages may be zero if either the award or amount equation results in a zero. Dividing the sample into zero punitive damages awards and positive damages awards, we can determine the likelihood for the full double-hurdle model. This general model includes a number of familiar models as special cases. Assuming that the error terms are independent yields the Cragg (1971) model.

In this model, the first stage incorporates a probit model to estimate the effect of the independent variables on the decision to award punitive damages (the award decision), and the second stage incorporates a truncated normal regression (the amount decision). An important advantage of the Cragg model over other specifications is that an independent variable's effect on the probability of awarding punitive damages and its effect on the amount of damages awarded are determined by separate processes. In other words, a state-level reform may have different effects on the award and amount equations within the Cragg model. These two effects would be blended together in an OLS or Tobit specification.

We use the Cragg model as our preferred specification, consistent with the recommendation of Eisenberg et al. (2015). However, the full double-hurdle model yields other familiar models under different assumptions, and we employ one of those to test the robustness of our results. If the error terms are not independent but we assume that conditional on clearing the first hurdle, it is never optimal to award zero punitive damages, the double-hurdle model reduces to the familiar Heckman sample selection model. The Heckman model assumes (in this context) that once the adjudicator has determined that punitive damages are warranted at the award decision stage, she will never conclude that the optimal amount of damages is zero, i.e., the amount decision always results in a positive number.

Econometrically, the Heckman and Cragg models are similar, but rely on different assumptions about the nature of the underlying decision process. Practically, they model slightly different outcomes. The Heckman model can generate estimates accounting for the possibility of latent positive amounts of punitive damages. Originally developed in the context of estimating wage equations in which some workers did not work, the Heckman model accounts for the potential wage those non-workers would have received (Heckman 1976, 1979). Here, the Heckman model can account for the potential punitive damages an adjudicator would have awarded if the defendant's conduct had been sufficiently reprehensible. On the other hand, the Cragg model focuses on actual outcomes. It is not obvious whether latent positive amounts of punitive damages exist. Adjudicators may determine that the optimal amount of punitive damages to deter future bad acts is positive but decide not to impose any punitive damages because the defendant's actions were not sufficiently reprehensible.

For example, suppose a physician failed to diagnose a patient's cancer which later necessitated the removal of the patient's leg. This is exactly the type of behavior that an adjudicator could deter through the imposition of punitive damages. However, suppose the physician failed to diagnose the cancer because when the patient visited, her child had just been seriously injured. This mitigating factor may help the physician appear more sympathetic in the adjudicator's eyes. In this situation, an adjudicator may legitimately determine that a positive amount of punitive damages is appropriate to deter future misdiagnoses of cancer but still impose zero damages because the physician's actions were not sufficiently reprehensible.

In addition to the theoretical considerations of how adjudicators make decisions, practical considerations can also determine which model will best capture the effect of state-level reforms. The Heckman model requires valid exclusion restrictions in order to separately identify the award decision from the amount decision. In other words, it requires variables that affect the decision of whether to award punitive damages but not what amount to award. We use the exclusion restrictions employed by Eisenberg et al. (2010) to identify our Heckman model. These exclusion restrictions are discussed in greater detail below.

While the Heckman and Cragg models differ in a number of respects, they can both elucidate the effect of different state-level reforms on punitive damages at different points in the decision process. Because they both allow for different effects of the same reform on the decision to award punitive damages and the decision of what amount to award, we employ both models when examining the influence of state-level reforms on punitive damages awards in the next section.

III. State-Level Reform Effects on Punitive Damages Awards in the CJSSC Samples

To estimate the effect of state-level reforms on a broad sample of punitive damages awards, we use data from the CJSSC. Because the CJSSC is a large survey of state trial court decisions, it provides a general perspective on the potential impact of state reforms. The CJSSC is a project of the Bureau of Justice Statistics and the National Center for State Courts, and it includes four separate samples from state trial courts across the country—one each in 1992, 1996, 2001, and 2005. We use the 2001 and 2005 samples because these years bracket the 2003 *State Farm* decision. With data from both before and after *State Farm*, we can be more confident that our estimates represent the effects of state reforms and not the effect of *State Farm*. However, the 2001 and 2005 samples are less useful in ascertaining the effect of *State Farm* in that there is only one post-*State Farm* year of data.

In each year of data collection, information from individual trials was collected directly from the offices of state court clerks, minimizing the risk of under-reporting or over-reporting damages by litigants. In addition to information on damages for each trial, the CJSSC includes information on whether a verdict was rendered by a judge or jury, the types of litigants involved, and the types of claims and counterclaims brought by litigants. The 2001 sample was collected from a random sample of 45 of the 75 largest counties in the country. The 2005 sample was similarly collected but also includes a sample of 110 smaller counties.

Information on state-level tort reforms comes from the Database of State Tort Law Reforms compiled by Avraham (2011). This database includes years of enactment (and, in some cases, repeal) of a variety of state tort reforms. We focus on three reforms targeting punitive damages: punitive damages caps, bifurcated trials, and evidentiary reform. We further disaggregate evidentiary reform into conduct standard reform and evidentiary standard reform. Technically, an evidentiary reform would be an increase from preponderance to a higher standard and a conduct standard reform would be an increase from negligence to a higher standard. However, because so many states have moved to higher standards, we focus on states that have maintained the lower standards. With respect to punitive damages caps, we focus on "effective" caps as defined by Avraham (2011). These caps are low enough and contain few enough exceptions to actually affect awards. Caps that are set too high or contain too many exceptions to be binding on most cases are excluded from this definition.

Additionally, we collect information on whether a state partially bans punitive damages, which is defined as a state disallowing punitive damages except in very limited circumstances;

whether a state partially authorizes punitive damages, which is defined as a state allowing punitive damages only in certain circumstances defined by statute; and whether a state imposes a high pleading standard on punitive damages. A high pleading standard requires that litigants seek leave of the court in order to seek punitive damages. While the underlying evidentiary standard is the same, plaintiffs must more clearly demonstrate their eligibility for punitive damages to the court beyond simply adding a line to their initial complaint. We refer collectively to these partial bans, partial authorizations, and high pleading standards as punitive damages limits and use them as our exclusion restrictions in our Heckman model estimation. Eisenberg et al. (2010) first used a similar specification to identify a Heckman model, and our approach is consistent with theirs.

To test the effect of these reforms on punitive damages awards, we estimate both Heckman and Cragg models using the following general specification (with a slight abuse of notation):

$$\text{(3)} \quad I(PD)_{ist} = \beta_1 \log(compensatory\ damages)_{ist} + \beta_2 \log(compensatory\ damages)_{ist} \times (State\ Farm)_t + (Punitive\ reforms)'_{st}\beta_3 + \beta_4 Jury_{ist} + (County)'_{ist}\beta_5 + (Litigant\ type)'_{ist}\beta_6 + (Case\ type)'_{ist}\beta_7 + (Punitive\ limits)'_{st}\beta_8 + \varepsilon$$

$$\text{(4)} \quad log(PD)_{ist} = \beta_1 \log(compensatory\ damages)_{ist} + \beta_2 \log(compensatory\ damages)_{ist} \times (State\ Farm)_t + (Punitive\ reforms)'_{st}\beta_3 + \beta_4 Jury_{ist} + (County)'_{ist}\beta_5 + (Litigant\ type)'_{ist}\beta_6 + (Case\ type)'_{ist}\beta_7 + \varepsilon.$$

These two equations correspond to the two stages of the punitive damages decision. First, the adjudicator must decide whether to award punitive damages. Next, the adjudicator must decide on the appropriate amount. In these equations, the unit of observation is an individual case, indexed by *i*, awarded in state, *s*, and time, *t*. In the first equation, the award equation, *I(PD)* is an indicator for whether the court imposed punitive damages. In the second equation, the amount equation, *log(PD)* is the natural logarithm of punitive damages.

Each equation includes the natural logarithm of compensatory damages, which prior work has consistently shown to be a good predictor of punitive damages (see, e.g., Hersch and Viscusi 2004; Eisenberg and Heise 2011). Each also includes an interaction between this variable and an indicator for whether the case was decided after *State Farm*, consistent with prior work (see, e.g., Del Rossi and Viscusi 2010). Including an interaction term between *State Farm* and the log of compensatory damages allows us to test whether that case had an effect on the relationship between compensatory and punitive damages consistent with the approaches of Del Rossi and Viscusi (2010), Eisenberg and Heise (2011), and Viscusi and McMichael (2014). Based on the sample structure, the *State Farm* indicator equals 1 for 2005 cases and 0 for 2001 cases. Evidence on the effect of *State Farm* on cases included in the CJSSC has demonstrated that the temporal shift associated with *State Farm* neither effectively reduces the probability of an award or the amount of awards (Eisenberg and Heise 2011; McMichael 2013).

The vector *(Punitive reforms)* includes indicators for the following reforms: punitive damages cap, (gross) negligence conduct standard, preponderance evidentiary standard, and bifurcated trial. We expect caps to have a negative effect on punitive damages awards; although, they may or may not have an effect on the decision to award punitive damages in the first place. We expect negative coefficients for the indicators associated with lower conduct and evidentiary standards—at least in the first stage of the two models. These lower standards make it easier for adjudicators to award punitive damages, but they may or may not affect the award amount since they may not affect the deterrence determination associated with a given award.

Jury is an indicator for whether the trial was a jury trial. Hersch and Viscusi (2004) find that juries are more likely to impose punitive damages and impose greater amounts than judges. The vector *(County)* includes indicators for whether a case was decided in the following counties:

Alameda, California; Los Angeles, California; Orange, California; Harris, Texas; and Fairfax, Virginia. These counties award more punitive damages than all other counties, so we control for their effect on punitive damages awards. The vector *(Litigant type)* includes indicators for whether all litigants in a case were individual litigants and for whether individual plaintiffs were suing government or corporate defendants. The inclusion of these controls is consistent with Hersch and Viscusi (2004). The Vector *(Case type)* includes indicators for whether the case involved, as the primary dispute, the following: premises liability, intentional tort, malpractice, slander/libel/defamation, negligence, fraud, buyer/seller contract dispute, employment dispute, and other contract dispute. The omitted category is other case type. These controls are consistent with Hersch and Viscusi (2004).

Finally, the vector *(Punitive limits)* appears only in the first stage equation, the award equation. It includes indicators for whether a state imposes a high pleading standard, partially bans punitive damages, or partially authorizes them. These variables serve as our exclusion restrictions when we estimate a Heckman model. A high pleading standard will affect whether punitive damages are awarded since it places additional burdens on litigants seeking them but will not affect the actual amount awarded. Partial bans and authorizations similarly will affect the probability punitive damages are awarded by making them more difficult to obtain but will not affect the actual amount of damages awarded. For a wider discussion of the effects of these laws, see Eisenberg et al. (2010). We include these variables in the award equation of our Cragg model consistent with the recommendation of Cameron and Trivedi (2005), but this model is identified with or without these indicators in one or both equations.

Table 2 reports summary statistics for punitive and compensatory damages awards and for the indicator variables for various punitive damages reforms. Punitive damages are not awarded very often—about 5% of our sample. Among reforms, punitive damages caps cover the greatest number of cases. Interestingly, a substantial majority of cases are covered by a higher conduct or evidentiary standard than the traditional civil case standards of gross negligence, which covers about 26% of cases, and preponderance of the evidence, which covers only about 11% of the cases in our sample. Throughout our analysis, we focus only on cases won by plaintiffs.

Table 3 reports results from a Cragg model. The first column reports results from the first stage and the second column the second stage. Consistent with prior work, an increase in compensatory damages generates an increase in punitive damages. Because both the dependent and independent variables are in logarithmic form, the coefficient on compensatory damages reported in column (2) is an elasticity. A 10% increase in compensatory damages leads to about a 3.3% increase in punitive damages. While we estimate a positive effect of compensatory damages on the probability that punitive damages are awarded in the first stage of the model, that effect is not statistically significant.

Interestingly, individual punitive damages reforms have different effects on different parts of the adjudicator's decision process. A preponderance evidentiary standard and a bifurcated trial requirement do not affect either the award or amount decision; however, damages caps and maintaining a gross negligence standard do affect the punitive damages calculus. When a gross negligence standard governs punitive damages, adjudicators are more likely to impose punitive damages. This result is consistent with adjudicators awarding punitive damages more often when plaintiffs must meet a lower standard to obtain those damages. This lower conduct standard also increases the amount of punitive damages awarded. Caps, on the other hand, do not affect the probability that an adjudicator will impose an award but do lower the amount of damages imposed by 58%. These effects are consistent with adjudicators determining the reprehensibility of an action separately from determining the appropriate amount of punitive damages to deter future bad acts.

The remaining estimates are consistent with prior work. Juries are both more likely to award punitive damages and award greater amounts (see Hersch and Viscusi 2004). The *State Farm* time indicator counterintuitively is associated with higher punitive damages awards for a given level of compensatory damages; however, because we have only one year of data before and after *State Farm*, the estimated coefficient may not completely isolate the effect of *State Farm* from other unobserved temporal effects. Eisenberg and Heise (2011) discuss this result at length.

Table 4 reports results from a Heckman model,[7] and the estimates are generally consistent with the estimates from the Cragg model. We estimate an elasticity between punitive and compensatory damages of 0.325. The *State Farm* and jury indicator variables have a similar effect in this model as in the previous model. Again, we find no statistically significant effect of maintaining a preponderance evidentiary standard or requiring bifurcated trials. Punitive damages caps, on the other hand, reduce the amount of damages imposed but have no statistically significant effect on the decision to award punitive damages in the first place. We also find that a gross negligence standard affects both the decision to award punitive damages and the amount awarded.

To test whether the results from the Cragg and Heckman models represent effects on the adjudicator's decision rather than effects on the behavior of litigants in seeking punitive damages, we use the 2005 CJSSC sample, which is the only year of data to include a variable indicating whether plaintiffs sought punitive damages. Using the same specification from the first stage of our Cragg and Heckman models with an indicator for whether plaintiffs sought punitive damages as the dependent variable, we find no evidence that caps, bifurcated trial requirements, or

[7] We identify our Heckman model with the variables included in the vector *(Punitive limits)* discussed above.

evidentiary reforms affect plaintiffs' decisions to seek punitive damages. However, we estimate statistically significant relationships between the reforms used as exclusion restrictions in our Heckman model and plaintiffs' decisions to seek punitive damages consistent with the discussion above.

Overall, we find strong evidence that state-level reforms affect the punitive damages calculus and that different reforms affect different parts of the decision process. Punitive damages caps affect only the decision of how much to award and not whether to impose damages in the first place. This result is consistent with adjudicators adjudging the reprehensibility of a defendant's actions to determine whether they warrant punitive damages and separately determining the appropriate amount of damages to punish and deter. A cap is only binding on the decision of what amount to award, and we would not expect it to bind juries in their determination of whether damages are warranted in the first place. In contrast to caps, we find evidence that maintaining a gross negligence standard affects both the award and amount decisions. These effects are consistent with plaintiffs simply having an easier time proving their cases in the face of relatively laxer standards.

IV. State-Level Reform Effects on Blockbuster Punitive Damages Awards

Viscusi (2004), Hersch and Viscusi (2004), Del Rossi and Viscusi (2010), and Viscusi and McMichael (2014) designated any punitive damages award greater than $100 million as a "blockbuster award." In contrast to the awards discussed in the previous section, these awards are atypical. Through 2012, courts have only imposed 132 blockbuster awards based on our review of these awards following the procedures described in the previous blockbuster award studies. Despite their rarity, however, they remain particularly salient for potential defendants who could be held liable for a substantial amount of damages. These potential defendants, however, may have difficulty predicting the size of blockbuster awards because blockbuster punitive damages awards follow fat-tailed distributions (Viscusi and McMichael 2014). Because of the unique nature of blockbuster awards, we analyze the effect of state reforms on them separately from typical awards.

The data on blockbuster awards come from research using Westlaw, Lexisnexis, and several editions of *The Top 100 Verdicts*. Through these media, we identify 132 awards between 1981 and 2012. In addition to the amount of punitive damages and compensatory damages awarded as part of a blockbuster award, we also collect information on the type of case, the litigants involved, and the industry of the defendant. Because the data on blockbuster awards include only actual blockbuster awards, we cannot employ the double-hurdle approach discussed above. However, we can explore the award and amount decisions separately.

Before moving to the regression analysis, Table 5 reports summary statistics for blockbuster punitive damages. The average blockbuster punitive damages award is over $1 billion. However, the average award may not be particularly instructive given the fat-tailed distribution of blockbuster cases, which exhibits a substantial right skew. Punitive damages caps affect about 20% of blockbuster cases—about half of the coverage for CJSSC cases.

We start by examining the frequency of blockbuster awards, which corresponds roughly with the award decision discussed above. To estimate the effect of state reforms on the frequency of blockbuster awards, we use the following specification:

$$(5)\quad (Blockbuster\ case\ count)_{st} = +\beta_1(State\ Farm)_t + (Punitive\ reforms)'_{st}\beta_2 \\ +\beta_3(Time\ trend)_t + \beta_4(Civil\ case\ count)_{st} + \delta_s + \varepsilon.$$

In this equation, *Blockbuster case count* is the number of blockbuster awards in state *s* in year *t*. We control for the effect *State Farm* may have had on the number of blockbuster awards across the country.[8] The vector *(Punitive reforms)* includes indicators for the following reforms: punitive damages cap, punitive evidence reform, and bifurcated trial. The punitive evidence reform variable aggregates our earlier conduct and evidentiary standards variables into a single variable. We use this specification since all blockbuster awards will easily satisfy almost any conduct or evidentiary standard because to qualify for blockbuster status in the first place, the defendant's behavior must be particularly egregious. Disaggregating the variable as before has no effect on any of our results. (*Time trend*) is a linear time trend to control for the growth of punitive damages awards over time. Because state citizens likely differ in their litigiousness or willingness to file lawsuits, we control for the number of tort cases filed in a given year with *Civil case count*. The data used in this variable come from the Bureau of Justice Statistics. Because the number of cases is not available in all states and years, we have an unbalanced panel of states ending in 2010. We also include a series of indicators for states, δ, to control for state fixed effects.

Because the data are counts, we estimate negative binomial regressions, and those results are reported in Table 6. We find that both *State Farm* and state-level punitive damages caps have negative coefficients in the regression for the number of blockbuster awards across the country. Interestingly, however, the magnitude of the state cap coefficient is twice that of *State Farm* suggesting that state-level reforms may actually play a more salient role than changes in Supreme Court jurisprudence in attenuating punitive damages awards. No punitive damages reform other than caps has a statistically significant effect on the prevalence of blockbuster awards. To isolate the effect of punitive damages caps, we re-estimate all of the models reported in Table 6 after dropping all states that maintained a punitive damages cap throughout our sample period. The results are consistent with those in Table 6 and are reported in an online appendix (Table A1).

[8] The *State Farm* indicator assumes a value of 1 for the year 2004 and all subsequent years. While it was actually decided in 2003, we allow a grace period to allow for the full implementation of the decision by lower courts.

To examine the effect of state reforms on the amount of blockbuster punitive damages awarded at trial, we use the following specification:

$$(6)\quad log(PD)_{ist} = \beta_1 \log(compensatory\ damages)_{ist} + \beta_2 \log(compensatory\ damages)_{ist} \times (State\ Farm)_t + (Punitive\ reforms)'_{st}\beta_3 + \beta_4 Jury_{ist} + (Industry)'_{ist}\beta_5 + \beta_6 (Litigant\ type)_{ist} + (State)'_{ist}\beta_7 + \varepsilon.$$

This specification is similar to the second stage of the Cragg and Heckman specifications above but differs in several important respects because of differences in available case data. The vector *(Punitive reforms)* includes different variables in different specifications. Initially, it includes an interaction between the log of compensatory damages and an indicator for whether a case was decided in a state with a punitive damages cap.[9] We then replace the interaction term with a simple indicator for a punitive damages cap. In later specifications, it also includes indicators for bifurcated trials and punitive damages evidence reform. The punitive evidence reform indicator variable aggregates our earlier conduct and evidentiary standard variables into a single variable as with our analysis of the frequency of blockbuster awards.

Jury is an indicator for a jury trial. The vector *Industry* includes indicator variables for the following industries of defendants: automobile, tobacco, finance/investment/insurance, energy/chemical, pharmaceutical/health industries, and violent crime. While violent crime is obviously not an industry, we control for whether the case involved the defendant committing some sort of crime. Litigant type is an indicator for whether both business and individual litigants were involved in a case. The vector *State* includes indicators for California and Texas since these states are associated with relatively more frequent and relatively larger awards.

[9] We use a slightly different definition of punitive cap for blockbuster awards. Whereas with the typical awards, we use Avraham's definition of an effective cap, we include all punitive damages caps not unique only to medical malpractice cases in the definition of a punitive cap for blockbuster awards.

Throughout our analysis, we exclude four cases from the blockbuster regressions. First, we exclude the two largest cases as outliers: *Middleton v. Collins* and *Engle v. R.J. Reynolds Tobacco*. Additionally, we exclude *Garamendi v. Altus Finance, S.A.* and *Chopourian v. Catholic Healthcare West* because the courts in these cases awarded no compensatory damages, rendering the ratio between compensatory and punitive damages undefined.

Table 7 reports results from OLS regressions for the effect of punitive damages caps on blockbuster award amounts. Column (1) isolates just the effect of *State Farm* on the elasticity between compensatory and punitive damages similar to earlier work (see Viscusi and McMichael 2014). Column (2) estimates the same equation with an interaction between compensatory damages and an indicator for a punitive damages cap. Column (3) replaces the interaction term with just an indicator for a punitive damages cap. Columns (4) through (6) repeat the first three columns with a full set of controls included. Throughout all of these specifications, we find no evidence that punitive damages caps affect the size of blockbuster punitive damages awards. However, this result is not surprising since the definition of a blockbuster award includes as its only criterion the size of the award. Caps very likely push some awards that otherwise would have been blockbusters below the $100 million threshold and thus out of our sample, which is consistent with the results for the frequency of blockbuster awards reported above. When additional reform variables are included, we find similar non-effects. Results for specifications including additional reform variables are reported in an online appendix (Table A2).

Overall, we find that state punitive damages caps have a negative and statistically significant effect on the frequency of blockbuster awards but no statistically significant effect on the size of blockbuster awards. While these estimates do not correspond one-to-one to the award and amount decisions discussed above, they do provide evidence that punitive damages caps reduce large punitive damages awards enough to push them below our sample threshold of $100 million but do not affect those awards that remain above the threshold.

V. Conclusion

Prior work on punitive damages has focused on the effect of changes in federal law on those awards. Specifically, *State Farm* has taken on a dominant role in the literature since it represents the most direct limit on punitive damages in Supreme Court jurisprudence. In our study, however, we demonstrate that states matter in the punitive damages calculus as well.

That calculus involves more than simply deciding what amount to award. Adjudicators face two decisions when arriving at a final punitive damages award. They first must decide whether the defendant's conduct is sufficiently reprehensible to warrant punitive damages. Next, they must determine what amount of punitive damages is optimal given the circumstances. Importantly, punitive damages reforms may affect these two decisions differently or affect one and not the other. Using two-part models to estimate the effect of reforms on these two decisions, we estimate a negative coefficient for punitive damages caps in the award decision stage. This coefficient is consistent with caps representing a binding constraint on the determination of the optimal amount of punitive damages but not on whether damages are warranted. We also find that a lower conduct standard is associated with an increase in both the probability adjudicators impose punitive damages and the size of the awards they impose.

In addition to analyzing awards from a broad sample of civil cases, we also examine the effect of state-level punitive damages reforms on blockbuster awards. State punitive damages caps are associated with a reduction in the number of blockbuster punitive damages awards but not the amount of those awards. These observed effects are consistent with reforms lowering the amount of damages so as to push awards below the blockbuster threshold but having little effect on those awards that still qualify as blockbusters.

Overall, the evidence presented here is consistent with state liability regimes playing an important role in regulating punitive damages. *State Farm* continues to play a part, particularly for the blockbuster awards, and no state can affect punitive damages across the country in the way a Supreme Court decision can. However, state-level reforms, where they exist, may play a larger role in the determination of punitive damages than do federal court decisions.

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Table 1: State Punitive Damages Caps

State	Adoption	Repeal
AL	1987	1993
	2000	current
AK	1998	current
AR	2003	current
CO	1987	current
CT	1979	current
FL	1987	current
GA	1988	current
ID	2004	current
IL	1995	1997
IN	1995	current
KS	1988	current
ME	1991	current
MS	2003	current
MO	2006	current
MT	1985	1986
	2004	current
NV	1989	current
NH	1987	current
NJ	1996	current
NC	1996	current
ND	1993	current
OH	1997	1998
	2005	current
OK	1996	current
TX	1988	current

Table 2: Summary Statistics for CJSSC Cases[a]

Variables	(1) Mean	(2) Std Dev
Damages Amounts		
Punitive Damages Awarded	0.046	0.209
Punitive Damages | PD awarded	3,807,630	26,890,394
Compensatory Damages	575,401	4,251,335
Punitive Damages Reforms		
Gross negligence	0.262	0.440
Preponderance	0.114	0.317
Punitive damages cap	0.420	0.494
Bifurcated trial	0.202	0.402
Punitive Limits		
High pleading standard	0.157	0.364
Partial ban	0.026	0.158
Partial authorization	0.078	0.268

[a]Notes: N = 8,696. All damages amounts are reported in 2005 dollars.

Table 3: Cragg Model Results for Punitive Damages Caps[a]

Variables	(1) I(PD)	(2) log(PD)
log(compensatory damages)	0.015	0.323***
	(0.026)	(0.052)
log(compensatory damages)x(State Farm)	-0.003	0.040**
	(0.007)	(0.019)
Punitive damages cap	0.059	-0.580**
	(0.103)	(0.279)
Gross negligence	0.325**	0.518*
	(0.142)	(0.302)
Preponderance	0.039	0.101
	(0.214)	(0.207)
Bifurcated trial	-0.040	-0.503
	(0.124)	(0.370)
Jury	0.600***	0.770***
	(0.136)	(0.252)
High pleading standard	-0.556***	
	(0.178)	
Partial ban	-0.591***	
	(0.098)	
Partial authorization	-1.003***	
	(0.199)	
Constant	-2.925***	6.386***
	(0.307)	(0.763)

[a]Notes: N = 8,696. The dependent variable is the natural log of punitive damages. All awards are in 2005 dollars. Other covariates include indicators for the following counties: Alameda, Los Angeles, Orange, Harris, and Fairfax; indicators for the following litigant types: individual plaintiffs and defendants, and individual plaintiffs and corporate or government defendants; indicators for the following types of claims: premises liability, intentional tort, malpractice, slander/libel/defamation, negligence, fraud, buyer/seller contract dispute, employment dispute, and other contract dispute. Robust standard errors are in parentheses. Punitive cap is defined as an "effective cap"—see text.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 4: Heckman Selection Model Results for Punitive Damages Caps[a]

Variables	(1) I(PD)	(2) log(PD)
log(compensatory damages)	0.015	0.325***
	(0.027)	(0.054)
log(compensatory damages)x(State Farm)	-0.003	0.039**
	(0.007)	(0.020)
Punitive damages cap	0.059	-0.592**
	(0.103)	(0.285)
Gross negligence	0.327**	0.568**
	(0.140)	(0.289)
Preponderance	0.041	0.121
	(0.214)	(0.206)
Bifurcated trial	-0.039	-0.487
	(0.123)	(0.354)
Jury	0.600***	0.958***
	(0.136)	(0.342)
High pleading standard	-0.564***	
	(0.169)	
Partial ban	-0.588***	
	(0.096)	
Partial authorization	-0.985***	
	(0.204)	
Constant	-2.924***	5.228***
	(0.311)	(1.333)

[a]Notes: N = 8,696. The dependent variable is the natural log of punitive damages. All awards are in 2005 dollars. Other covariates include indicators for the following counties: Alameda, Los Angeles, Orange, Harris, and Fairfax; indicators for the following litigant types: individual plaintiffs and defendants, and individual plaintiffs and corporate or government defendants; indicators for the following types of claims: premises liability, intentional tort, malpractice, slander/libel/defamation, negligence, fraud, buyer/seller contract dispute, employment dispute, and other contract dispute. Robust standard errors are in parentheses. Punitive cap is defined as an “effective cap”—see text.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 5: Blockbuster Sample Summary Statistics[a]

Variables	(1) Mean	(2) Std Dev
Punitive damages	1,011	3,545
Compensatory damages	355	1631
Punitive damages cap	0.188	0.392

[a]Notes: N = 802. Punitive damages and compensatory damages are reported in 100 millions of 2012 dollars. All remaining variables are indicator variables.

Table 6: Negative Binomial Regressions for the Effect of Punitive Damages Caps on the Number of Blockbuster Awards[a]

Variables	(1)	(2)	(3)
State Farm		-0.809**	-0.741**
		(0.372)	(0.365)
Punitive damages cap	-1.462**	-1.486**	-1.851***
	(0.660)	(0.679)	(0.682)
Conduct or evidentiary reform			0.648
			(0.726)
Bifurcated Trial			0.923
			(0.618)
Time trend	0.088***	0.141***	0.125***
	(0.021)	(0.032)	(0.032)
Constant	-2.666***	-2.985***	-3.860***
	(0.716)	(0.734)	(1.124)

[a]Notes: N = 802. All columns report results for negative binomial regressions with the number of blockbuster punitive damages awards in a given state in a given year as the dependent variable. All specifications include the number of civil cases filed in a given state as a control variable and a full set of state indicator variables. Robust standard errors are reported in parentheses. *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Table 7: Regression Results for the Effect of Punitive Damages Caps on Log Blockbuster Award Amounts[a]

Variables	(1)	(2)	(3)	(4)	(5)	(6)
log(compensatory damages)	0.172***	0.170***	0.171***	0.204***	0.205***	0.204***
	(0.055)	(0.056)	(0.055)	(0.053)	(0.054)	(0.053)
log(compensatory damages)x(State Farm)	-0.036***	-0.036***	-0.036***	-0.032***	-0.032***	-0.032***
	(0.009)	(0.009)	(0.010)	(0.010)	(0.010)	(0.010)
log(compensatory damages)x(punitive cap)		0.003			-0.002	
		(0.011)			(0.013)	
Punitive damages cap			0.050			-0.026
			(0.210)			(0.246)
Jury				-0.097	-0.100	-0.098
				(0.292)	(0.290)	(0.291)
Business and individual litigants indicator	No	No	No	Yes	Yes	Yes
Industry indicators	No	No	No	Yes	Yes	Yes
Texas and California indicators	No	No	No	Yes	Yes	Yes
Observations	128	128	128	128	128	128
R-squared	0.148	0.149	0.149	0.339	0.340	0.339

[a]Notes: N = 128. Dependent variable is the natural log of punitive damages in all specifications. All awards are in 2012 dollars. The specifications in columns (4)–(6) include an indicator for business and individual litigants, a vector of indicators for different industries, and indicators for whether a case was decided in Texas or in California. The industry vector includes indicator variables for the following industries of defendants: automobile, tobacco, finance/investment/insurance, energy/chemical, pharmaceutical/health industries, and violent crime. The excluded industry category is other industry. All specifications exclude the *Garamendi* and *Chopourian* cases which involved no compensatory damages and the *Engle* and *Middleton* cases which involved the two largest PD Awards in the dataset. Robust standard errors are in parentheses.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Appendix[12]

Table A1: Negative Binomial Regressions for the Effect of Punitive Damages Caps in States that Enacted Caps[a]

Variables	(1)	(2)	(3)
State Farm		-0.720**	-0.663*
		(0.364)	(0.360)
Punitive damages cap	-1.484**	-1.504**	-1.856***
	(0.664)	(0.680)	(0.681)
Conduct or evidentiary reform			0.541
			(0.738)
Bifurcated Trial			0.928
			(0.622)
Time trend	0.091***	0.137***	0.124***
	(0.021)	(0.033)	(0.033)
Constant	-2.679***	-2.960***	-3.768***
	(0.717)	(0.732)	(1.133)

[a]Notes: N = 720. All columns report results for negative binomial regressions with the number of blockbuster punitive damages awards in a given state in a given year as the dependent variable. All specifications omit states that had a punitive damages cap or ban in place throughout the entire sample period (1980–2010). All specifications include the number of civil cases filed in a given state as a control variable and a full set of state indicator variables. Robust standard errors are reported in parentheses. *** significant at 1% level; ** significant at 5% level; * significant at 10% level.

[12] This appendix is designed to be posted online and not included with the paper itself. We include it here for the benefit of the editor(s) and reviewer(s).

Table A2: Regression Results for the Effect of Punitive Damages Caps on Blockbuster Award Amounts[a]

Variables	(1)	(2)	(3)	(4)
log(compensatory damages)	0.164***	0.166***	0.208***	0.208***
	(0.057)	(0.056)	(0.057)	(0.055)
log(compensatory damages)x(State Farm)	-0.037***	-0.037***	-0.033***	-0.033***
	(0.010)	(0.010)	(0.010)	(0.010)
log(compensatory damages)x(punitive cap)	0.007		0.001	
	(0.012)		(0.014)	
Punitive damages cap		0.122		0.021
		(0.224)		(0.257)
Bifurcated trial	-0.271	-0.268	-0.275	-0.277
	(0.247)	(0.247)	(0.261)	(0.259)
Conduct or evidentiary reform	-0.126	-0.125	0.126	0.126
	(0.197)	(0.195)	(0.254)	(0.254)
Jury			-0.119	-0.120
			(0.288)	(0.288)
Business and individual litigants indicator	No	No	Yes	Yes
Industry indicators	No	No	Yes	Yes
Texas and California indicators	No	No	Yes	Yes
Observations	128	128	128	128
R-squared	0.158	0.158	0.345	0.345

[a]Notes: N = 128. Dependent variable is the natural log of punitive damages in all specifications. All awards are in 2012 dollars. The specifications in columns (3)–(4) include an indicator for business and individual litigants, a vector of indicators for different industries, and indicators for whether a case was decided in Texas or in California. The industry vector includes indicator variables for the following industries of defendants: automobile, tobacco, finance/investment/insurance, energy/chemical, pharmaceutical/health industries, and violent crime. The excluded industry category is other industry. All specifications exclude the *Garamendi* and *Chopourian* cases which involved no compensatory damages and the *Engle* and *Middleton* cases which involved the two largest PD Awards in the dataset. Robust standard errors are in parentheses.
*** significant at 1% level; ** significant at 5% level; * significant at 10% level.

Data Appendix—Not For Publication[13]

Civil Justice Survey of State Courts

The Civil Justice Survey of State Courts (CJSSC) is a sample of bench and jury trials concluded across the country. The CJSSC consists of four waves, and we consider the 2001 and 2005 waves. The 2001 wave consists of a sample of civil cases concluded by bench or jury trial in the 75 most populous counties in the country. The 2005 wave is a nationally representative sample of bench and jury trials concluded in 156 urban, suburban, and rural counties. The 2005 wave includes the nation's 75 most populous counties, making comparison with the 2001 sample possible. The CJSSC is a publicly available dataset that can be accessed at: http://www.icpsr.umich.edu/icpsrweb/NACJD/studies/23862/version/2. However, users must obtain permission to access the data.

Database of State Tort Law Reforms

The Database of State Tort Law Reforms is a collection of the statutes (with actual statutory language) that form the basis of a variety of tort reforms, including those related to punitive damages. We used the information contained in this database to code all of the indicator variables for the different punitive damages reforms used in our analysis. The database may be downloaded from: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=902711. Note that we used the 4th edition of this database, but the 5th edition has since become publicly available.

[13] This data appendix is prepared in compliance with the submission guidelines of the *Southern Economic Journal*. It is not designed to be included with the published version of the paper.

Blockbuster Punitive Damages Awards

We collected information on 132 blockbuster punitive damages awards, building on earlier work (see, e.g., Hersch and Viscusi (2004)). In doing so, we consulted a variety of legal sources, including the online databases provided by Westlaw and Lexisnexis and several editions of *The Top 100 Verdicts*. Any punitive damages award in excess of $100 million (measured in dollars at the time of the award) is included as a blockbuster award regardless of the disposition of the award on appeal, following a new trial, or other secondary legal action.