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Case Selection after the Trial:
A Study of Post-Trial Settlement and Appeal

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Abstract

This paper studies the decisions of litigants in civil disputes whether to settle or appeal a case after a trial. The paper argues that when litigants are unable to meet damage awards in full only cases where the defendant's position is particularly strong will face appellate court review. In the absence of financial constraints defendants will be more inclined to take chances with cases where their position is weaker. The paper tests the importance of award size and financial constraints in driving settlement and appeals decisions using survey data about post-trial activity for a sample of verdicts in California and New York from 2001-2004. These results indicate that the case-selection model is highly relevant in determining which cases are ultimately resolved by an appellate court. Additionally, defendant financial resources are an important factor that strongly influences post-trial outcomes.

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A. Introduction

The appeals process is a hallmark of civil justice systems throughout the industrialized world. Appellate courts allow litigants from lower courts to challenge rulings that they feel are in error, providing an important oversight to the lower courts. The appellate courts also have lawmaking powers that exceed those of trial courts. Thus, the decisions of appellate courts can have influence far beyond just the case being reviewed. However, there is a long and complex process that a dispute must navigate before ever appearing in an appellate court. This invites speculation as to how this process, particularly the settlement negotiations between litigants, affects the composition of cases that are presented to the appellate courts for review.

There are many parallels between the possible selection of disputes heard in appellate courts and trial courts. The parties engaged in a civil dispute have the option to settle a case out of court at nearly any point, including after a trial court decision and leading up to an appeal. Moreover, all litigants must absorb some cost if a dispute is resolved in court, and sometimes the cost can be quite substantial.[1] Given the incentives to avoid appearing in court, economists typically view observed instances of trial or appeal as a bargaining failure. Such failures might occur for various reasons—the two most commonly cited are asymmetric information or divergent expectations of litigants—almost none of which are likely to be purely random. This suggests that, just as is the case with trial courts, the cases we observe in an appellate court are highly unlikely to form a representative sample of disputes.

[1] For example, Studdert et al. (2006) examine a sample of medical malpractice claims and report that the average cost of defending cases that were resolved in court was $112,968, compared to $42,015 for cases resolved out of court. We are not aware of any similar data on the cost of appeals.

This paper uses data from a survey of attorneys to study post-trial settlement and the selection of cases to the appellate courts. In particular, there is a focus on how the set of cases that ultimately receive an appellate court decision is influenced by the size of the verdict awarded at trial and limitations to defendants' financial resources. With unlimited financial resources, defendants should be more willing to proceed to trial with a marginal case—a case in which their position is more uncertain—as the size of the damage award increases. But if defendants have limited financial resources the amount they are actually able to pay might be considerably less than the full amount of the verdict. In such cases, the importance of any potential reduction by the appellate courts is lessened. This can actually reverse the previous prediction; financially constrained defendants have more incentive to settle marginal cases. If financial constraints are only binding for larger jury verdict awards, this leads to an empirical prediction that the defendant win rate in appellate court should be increasing in the size of the jury verdict award.

These predictions are tested using a survey of 562 civil cases that were resolved at trial in California and New York from 2001-2004 with a positive verdict for the plaintiff. The survey questions defense and plaintiff trial attorneys about any adjustments made to the jury verdicts, with a number of questions targeting post-trial settlement and appeals. These data are used to estimate the relationship between the size of the jury award granted to the plaintiff and the likelihood of settlement, filing for appeal, and reaching an appellate decision. In addition, data on the motivations behind settlement are used to identify the importance of defendant financial resources in settlement decisions.

There are three key empirical results, all of which are consistent with the predictions of the model. First, both settlement and appeal are more common in cases with larger jury verdicts. While a hypothetical case with a verdict of $10,000 is often resolved without either settlement or appeal, a hypothetical case with a blockbuster verdict of $100 million is almost certain to involve both. The second finding is that the likelihood that the defendant "wins" on appeal is higher in the high stakes cases. Finally, the results also confirm that the positive relationship between post-trial settlement and the size of the verdict is driven in large part by defendant financial constraints. Taken together, these three pieces of evidence suggest that limits on the ability of defendants to pay verdicts in full strongly influence the types of cases that go before an appeals court.

The methods in this paper follow the long and established literature devoted to studying the selection of civil disputes to trial. Priest and Klein (1984) developed and tested a model in which failure to settle was driven by divergent expectations of the litigants involved.[2] One of the hallmarks of their model was the "50% Hypothesis," the notion that cases with the most uncertainty have the greatest potential for divergent expectations, so the set of cases proceeding to trial should tend to exhibit an even chance of a plaintiff or defense victory. Subsequent work such as Waldfogel (1995) and Kessler et al. (1996) demonstrated how plaintiff win rates might differ from 50% in systematic ways. Eisenberg and Farber (1997) study the role of heterogeneity in expected litigation costs in determining the set of cases that are tried or settled. Other studies such as Viscusi (1988), Fournier and Zuehlke (1989) and Perloff, Rubinfeld and Ruud (1996)

[2] Landes (1971) and Gould (1973) incorporated the notion of diverging expectations among litigants into theoretical models.

have studied the selection of cases going to trial based on the mean and variance of expected damage awards.

A separate strand of the literature has studied how cases select for the appellate process. Shavell (1995, 2006) argues that separating disappointed litigants—making it so that only those whose trial outcomes were legitimately at error choose to appeal—is important for attaining a socially optimal appeals process. Spitzer and Talley (2000) examine how ideological bias of appeals courts can influence the review and reversal of lower courts. Daughety and Reinganum (2000) develop a signaling model of appellate courts that predicts how various characteristics of a case, including the size of the jury award, could influence the set of cases that are appealed. Among other things, their model predicts that cases with higher awards should induce defendants to appeal with weaker cases.

Clermont and Eisenberg (2001) and Eisenberg and Heise (2008) use data on appellate decisions to study systematic differences in the appeals rates and outcomes between defendants and plaintiffs. They find that defendants tend to be successful on appeal more often than plaintiffs, by a relatively wide margin. They compare two possible explanations for this finding, a selection effect and a possible attitudinal bias by the appellate court (based on the notion that appellate court judges perceive a pro-plaintiff bias in trial courts). Their results tend to support the argument that the relationship is driven by attitudinal biases. While those conclusions generally run counter to those of this paper, it is difficult to make a direct comparison because their focus is on differences between plaintiff and defense outcomes, as opposed to the

relationship between outcomes and award size. More generally, they do not explicitly test a specific selection process such as the one utilized in this paper.

This paper proceeds as follows. The next section uses a simple theoretical framework to study the relationship between the size of a jury verdict and post-trial settlement and appeal. Section C introduces the empirical approach, while Section D describes the data. Section E presents the empirical findings. This paper concludes with a discussion of the implication of the findings and suggestions for future research.

B. Case Selection in Post-Trial Settlement and Appeals

This section outlines a conceptual framework for studying the selection of cases that proceed to appellate courts after a jury verdict. First the basic model, in which defendants face no restrictions on their ability to pay a verdict, is considered. Then the model is adapted to consider how defendant financial constraints impact the set of cases being heard by the appellate courts. Finally, the model is extended to consider the implications if there are attitudinal biases in the appellate court.

B.1 The Basic Model

Suppose that there are two parties engaged in a civil dispute, one plaintiff and one defendant, and that the case proceeds to trial and the trial court assigns liability to the defendant. In other words, we start with case in which a jury awarded a nonzero verdict to the plaintiff. Both litigants are assumed to be risk neutral. The litigants can choose to resolve the case prior to an appeal: either the defendant can simply pay the verdict in full or the two parties can negotiate a settlement. Alternatively, the parties can enter the appellate process.

Either party can file for an appeal if it believes an error has been made. Since our focus is on cases where the plaintiff wins, we will limit ourselves to the case where the defendant appeals.[3] Parties can settle before or after the appeal is filed. If no settlement is reached, the parties proceed to appellate court.[4] If the appeal is decided at court, the plaintiff and defendant bear court costs equal to c_p and c_d, respectively.

If case does proceed to the appellate court, either the verdict is upheld in its entirety or it is reduced by some fraction α where $0 < \alpha \leq 1$.[5] The probability that the verdict is reduced conditional on the case being heard at court is denoted π. Litigants have subjective beliefs α_i and π_i for $i = p, d$. For simplicity we only allow litigants to differ on the size of a reduction if one occurs, so $\pi_p = \pi_d = \pi$.

Let A denote the size of the verdict awarded by the jury. Given their beliefs, the expected loss to the plaintiff of an appeal is equal to $\alpha_p \pi A + c_p$ and the expected gain to the defendant is $\alpha_d \pi A - c_d$. Ignoring strategic considerations,[6] litigants should only proceed to court if the defendant's gains outstrip the plaintiff's losses, i.e. if $(\alpha_d - \alpha_p)\pi A \geq c_d + c_p$.

[3] Obviously, in practice there could be cases in which the plaintiff receives a nonzero verdict but still feels that there are issues in case worthy of appeal. Cohen (2006) reports that when appeals are filed in cases where the judge or jury found for the plaintiff, 90.4% of those appeals are filed for by the defendants.

[4] In practice, we observe many cases in which an appeal was filed but ultimately there was no appellate decision nor was there a settlement. This can happen if there is a "drop out," an appellate filing that ultimately is not pursued, or if the appellate court fails to hear the case. Conceptually, we think of either of these cases as "settling" for the full verdict amount.

[5] As shall be seen in the empirical work, in some cases the post-trial process will actually result in an increase in the verdict. The general conclusions hold whether or not post-trial increases are allowed; the focus here is on post-trial reductions for simplicity and because reductions are far more common.

[6] Strategic interactions could arise if plaintiffs or defendants had asymmetric information about the strength of their respective cases or their costs of appeal. For instance, the defendant might file an appeal to signal a strong belief in the quality of her case, or relatively low cost of appeal, to the plaintiff or to the court (as in Daughety and Reinganum, 2000).

Suppose that $(\alpha_d - \alpha_p)$ and $c_d + c_p$ are fixed. For our purposes, there are two relevant predictions that come from this relationship. The first is that the likelihood that a case is decided at appeal is strictly increasing in *A*. The second is that, at the margin, the likelihood that cases are reduced in the sample of cases we observe at trial is *decreasing* in *A*. That is, when cases involve higher dollar amounts defendants have more incentive to take their chances at trial than with more marginal cases.

B.2 The Impact of Defendant Financial Constraints

The basic model assumes that the defendant is fully able to meet the obligation imposed by the verdict. However, suppose that defendants are unable to obtain capital to pay verdicts above a certain amount; for instance, they may be unable to meet obligations above their insurance limits. Alternatively, for some defendants in some states, asset protection laws will limit the obligation of defendants even if they had the resources to meet the full verdict. Formally, the plaintiff's expected recovery is modeled as $f(A)$, where:

$$f(A) = \begin{cases} A & if\ A \le A^* \\ A^* & f\ A > A^* \end{cases}$$

Here the amount that plaintiffs recover is capped at a certain threshold regardless of the outcome of an appeals process. If a verdict is above A^* and is appealed, this will only have an impact on the plaintiff's recovery and the defendant's obligation if the appellate court reduces the final damage award to less than A^*.

Comparing the incentives for settlement and appeal in the model with and without limitations to plaintiff recovery yields substantial changes. First, a larger award no longer implies that a case is unambiguously more likely to settle. Larger awards are more

likely to be subject to financial constraints, so the highest awards are more likely to settle. Additionally, the marginal impact of award size on the average strength of the case that we observe in the sample of cases decided at trial is reversed. That is, when there are limitations to recovery, the likelihood that cases are reduced in the sample of cases we observe at trial is *increasing* in A, at least when the constraint is binding. That is, when recovery is limited, defendants have less incentive to pursue appeals with marginal cases.

Figure 1 illustrates the intuition behind these observations. The figure plots the plaintiff's recovery of an award against the size of the verdict using a hypothetical example. Recovery is given by the line in bold, which is equal to the 45° line until the threshold A^* is reached, above which recovery is capped at A^*. The figure illustrates two scenarios in which the appellate court finds for the plaintiff and reduces the verdict with likelihood π_0 or π_1 (illustrated by the lines $(1-\pi_0)A$ and $(1-\pi_1)A$, respectively). In this model, a case settles as long as the difference between the recovery with and without the appellate decision is less than the fixed value θ, where $\theta \equiv \frac{c_d + c_p}{\alpha_d - \alpha_p}$.

It is clear that absent financial constraints the likelihood that the expected reduction on appeal exceeds θ is strictly increasing in A. This means that larger verdicts are more likely to involve an appellate decision, and that the average value of π observed in cases with an appellate decision should be decreasing as A gets larger. However, when financial constraints are imposed, the incentives to proceed to appellate court are decreasing if A exceeds A^*. Only cases where a reduction is relatively more likely will proceed to court, so the expected value of π in cases with a decision is increasing in A.

These results were derived under a very restrictive form of financial constraint, in which plaintiffs receive nothing above a fixed threshold. In principle, the form of the financial constraint is not so important. The general intuition described in Figure 1 will hold as long as financial constraints generate some concave recovery function that is binding in enough cases. More specifically, the average probability of a reduction will be increasing in A as long as the slope of the recovery function is less than $(1-\pi)$. In practice, the extent to which such a constraint exists almost certainly differs across defendants.

B.3 Attitudinal Biases by the Courts

Eisenberg and Heise (2008) argue that defendants tend to fare better on appeal than plaintiffs because of attitudinal biases among appellate court justices. Such attitudinal biases could occur if, for example, the appellate court perceived trial courts to be pro-plaintiff, and respond accordingly to provide balance. This section considers how the existence of such attitudinal biases could affect the predictions of the model considered in this paper.

The focus of the model described above is on how settlement and appeals decisions change as the size of the damage award increases. If appellate courts have a pro-defense bias but the existence and size of the bias is uncorrelated with the size of the damage award, then it is clear that none of the previous predictions will be altered. Suppose, however, that the appellate court is more biased against large awards to the plaintiff. We can model this by letting $\pi = \pi(A)$, where $\pi_A > 0$, so appellate courts are more likely to reduce larger awards. In this case the impact of the bias on the model predictions is somewhat ambiguous.

The prediction that the likelihood of a reduction is increasing in A when there are financial constraints holds unambiguously in the presence of these biases. In the example given by Figure 1, letting π increase in A simply makes the lines $(1-\pi_0)A$ and $(1-\pi_1)A$ concave, which has no substantive impact on the results. However, the presence of biases can lead to ambiguity in the relationship between π and A when there are no financial constraints. On the margin, an increase in A still gives defendants with weaker cases a greater incentive to go to trial. But let's consider the extreme case where $\pi(A)=1$ if A is a million dollars or more. If the court's bias is strong enough, it is possible to observe larger values of π as A increases even without financial constraints. Empirically, this limits our ability to distinguish the role of financial constraints from strong biases by appellate courts.

The addition of appellate court biases is not the only model perturbation that could affect the results. Perhaps the most important assumption made above is the assumption that the cost of an appeal is independent of the size of an award. Eisenberg and Farber (1997) demonstrate that the relationship between the potential damage award and the likelihood of settlement is ambiguous if trial costs also increase with the potential award. Similarly, if cases with a higher jury award are more expensive to appeal, this could generate a relationship between award size and the likelihood of a reduction similar to that with financial constraints. Increasing appeals costs generate a concave net recovery function, and if the slope of this function is less than $(1-\pi)$ then only defendants with stronger cases have incentives to appeal as A increases. Again, this does not change the empirical predictions, but it does highlight the difficulty of distinguishing

the impact of defendant financial constraints from other factors that affect plaintiff recovery.

C. Data

The data we use come from a 2006 survey of post-trial adjustments conducted by the RAND Corporation. The survey was conducted as part of an in-depth study of the post-trial process and how it affects the dollar value of damage awards that plaintiffs receive. The survey collected a considerable amount of information was collected about post-trial outcomes, including the settlement amounts, appeals, appellate court decisions, as well as any direct adjustments made by trial judges. For more information on the survey and a complete account of its findings see Pace, Jain and Seabury (2009). Here we briefly describe the survey and provide a few summary statistics.

C.1 Survey Details

The survey targeted the attorneys in a sample of jury verdicts identified through Westlaw. The attorneys of record for all parties in each verdict were identified, and a survey form was sent to every attorney. Survey forms requested information about any changes to the verdict that were enforced by the trial judge, that resulted from post-trial settlement negotiations, that were the result of appellate court actions. Questions were asked about the size of each adjustment and the total size of the payment that was ultimately expected to be made by the any or all of the defendants to any or all of the plaintiffs in the case.

The survey sampled 1,177 verdicts that were included in Westlaw's "American Lawyer Media VerdictSearch Jury Verdicts & Settlements" from 2001-2004. This time frame was selected to (1) be recent enough that attorneys would be able to easily recall

the case and have minimal trouble pulling the relevant case files, and (2) allow sufficient time to have elapsed after the verdict so that all post-trial activities would have completed. There were approximately 2.7 attorneys of record per case, so survey forms were sent to 3,198 lawyers.[7]

To identify the survey sample, electronic abstracts were extracted for all verdicts in the two reporters. Search algorithms were then developed to identify relevant case characteristics, most notably the size of the jury verdict. Because the intent of the survey was to focus on post-trial adjustments, and previous work indicated that verdicts with a plaintiff "win" were far more likely to be altered (Shanley and Peterson, 1987), only verdicts with positive damages award to the plaintiff were selected. The survey oversampled a number of case types: verdicts with punitive damages, verdicts involving medical malpractice or product liability, and verdicts with a damage award of 5 million or more. All of these verdicts were selected and a subsample of the remaining verdicts was selected to fill out the survey sample.[8]

Overall, the survey response rate was 21%. The two states had a similar attorney response rate, with 21.5% of California surveys being returned compared to 21% for New York. The rate was highest for plaintiffs' attorneys in California (26%) and lowest for defense attorneys in the same state (18%). New York defense attorneys had a 20% response rate and plaintiff attorneys had a 22% rate. Because there were multiple surveys sent out per case, the case response rate is significantly higher than the overall

[7] Attorneys with more than one case in the sample received more than one survey form.
[8] The survey sample was designed to allow comparisons of medical malpractice cases between California and New York, states with and without noneconomic damage caps in malpractice cases, respectively. However, the number of malpractice verdicts in California in 2002 and 2003 was relatively small, so for malpractice cases only the sample time frame was extended to include 2001-2004. For all other cases, the sample time frame is 2002-2003.

questionnaire response rate. Ultimately, at lease one response was received for 47.7% of cases (55% for California and 43% for New York). Thus, the sample size for the study includes 562 cases.

C.2 Adjusting for Survey Nonresponse

An obvious point of concern is that response to the survey form was nonrandom. To correct for this, survey nonresponse weights were constructed using the approach suggested in Little and Rubin (1987). This procedure is implemented by estimating the predicted probability of survey response as a function of the observable case characteristics, e.g. the type of case litigated, the size of the jury verdict, etc.[9] Observations were stratified into 5 bins based on these predicted probabilities, and the weight assigned to each observation is equal to the inverse of the mean of the predicted probability of all observations in its bin.[10]

The limitation of this approach is that it requires us to assume "selection on the observables." We must assume there are no unobserved latent variables driving survey response that are also correlated with the relationships of interest. This assumption could be problematic if, for instance, attorneys were more likely to respond in cases where they felt they did a better job for their client, say by winning a higher negotiated settlement. The sampling design helps mitigate to this somewhat by surveying both plaintiff and defense attorneys; presumably where one attorney does well, the other does poorly. Mostly the paper finds that the results are similar whether plaintiff or defense responses are considered, suggesting perhaps that this particular form of selection is not too prevalent. Another unobserved variable that could affect survey response includes

[9] The predicted probability was estimated using a probit model.
[10] In addition, for the undersampled groups, this weight is multiplied by a constant to reflect the degree of undersampling.

attorney quality; if higher quality attorneys have higher opportunity cost, they could be less likely to respond to a survey. Unfortunately, we have no data available to test for differences in attorney-specific characteristics among respondents and non-respondents.

C.3 Variable Definitions and Summary Statistics

The survey form captured a considerable amount of detail about the different adjustments to the jury award that occurred once the trial had been completed. For the purposes of this paper, the key questions that were addressed by the survey are: was there a post-trial settlement in the case, why did the case settle, was there an appeal, and did the appeal result in a decision? In addition, the survey also inquired about any changes to the award that resulted if a settlement was reached or if there was an appellate decision.

The exact survey questions used to define these variables are provided in the Appendix. In the analysis, the reasons for settlement are defined as settlement due to defendant financial constraints, settlement to end or forestall an appeal, or settlement for some other reason. The case was determined to have settled because of defendant financial constraints if the respondent(s) indicated that the defendant's insurance limits or available assets were insufficient to satisfy the full verdict amount. Settlement to end or forestall an appeal includes both appeals that were in progress or the expectation of a future appeal.

An important limitation of the data is that there is no way to identify cases in which defendants are financially constrained unless it is specifically identified as a reason for settlement. Ideally, we would like to be able to test the relationship between outcomes and the award size in cases in which defendants were or were not financially constrained. Instead, we are limited to testing the overall relationship between different

outcomes and the size of the award, and verifying that settlement because of financial constraints is more common in cases involving higher stakes.

Table 1 illustrates the empirical distribution of damage awards in our sample. The dollar values are reported in millions of year 2006 dollars, and the distribution is adjusted to reflect the sampling weights. In addition to the mean and standard deviation, the 10^{th}, 25^{th}, 50^{th}, 75^{th} and 90^{th} percentiles are presented, as is the maximum award. Because punitive damages tend to generate outliers, the distribution for all damage awards and just compensatory awards are shown separately.

Two facts are immediately evident from the table: (1) the distribution of damage awards is heavily influenced by outliers, and (2) this is especially true of punitive damages. The mean of total damage awards in the sample is $24.36 million, while the mean of compensatory awards is $2.97 million. However, the median of total and compensatory awards are $270,000 and $260,000, respectively. The overall distributions look extremely similar, with punitive damages having very little impact below the 99^{th} percentile of awards. In the empirical analyses we use the log of damage awards to minimize the impact of outliers.[11] Additionally, we verify that the results hold when we drop punitive damages (which are clearly more subject to outliers).

Table 2 reports summary statistics of the case characteristics and outcomes included in the analysis. The weighted means and standard deviations are reported for all verdicts and for verdicts with and without punitive damages. We include dummy variables for cases in California and for cases involving possible evidence of benefits from collateral sources (because the rules for evidence of collateral sources vary across

[11] An alternative approach is to include a polynomial specification of the jury awards. We have replicated the analyses in this paper using a quadratic specification, and the qualitative results are unchanged.

different cases and across California and New York). Just 7 percent of verdicts in the sample involve collateral sources and this changes little whether or not punitive damages are involved. Under half of verdicts (this is different than the response rate, due to the weighting) are in California, although verdicts with punitive damages are much more likely to be in California. We include indicators for cases that involve medical malpractice, product liability and automobile personal injury with all other cases acting as an omitted category. Automobile cases are the most common among all verdicts, although they represent a small fraction of cases involving punitive damages.

In the sample, 55% of verdicts are ultimately resolved through a post-trial settlement. This is only slightly higher in cases with punitive damages (58%). Appeals are filed in about 28% verdicts overall, but they are much more frequent in verdicts with punitive damages (66%). Note that the frequency of appeals in our sample is higher than in the data used by Cohen (2006), Clermont and Eisenberg (2001) or Eisenberg and Heise (2008), in which the frequency of appeals was closer to 15-20%. Possible explanations for this could be the jurisdiction of our study (California and New York) or the oversampling of higher stakes cases.[12] For example, appellate decisions are also much more common in cases with punitive damages (44%) than in all cases (15%).

When thinking of settlement and appeals as outcomes, it is important to have a clear sense of the impact these have on the payments made from the defendant to the plaintiff. In the sample, data on the end payment amount are available for 469 verdicts (83%). Table 3 describes the adjustments to the jury verdict that are associated with settlement and appeal. The table reports the fraction of end payments that are increased,

[12] Cohen (2006) shows that, in tort cases, the appeals rate is considerably higher in higher stakes cases such as products liability (32.5%) than in automobile personal injury cases (5.3%).

unchanged or reduced relative to the verdict. Furthermore, the reductions are broken down by reductions of 50% or more verdicts that are completely eliminated. These outcomes are shown for all verdicts, verdicts with and without settlement, verdicts where an appeal was filed and verdicts with an appellate decision. Note that the verdicts in the last two columns are not mutually exclusive from the verdicts with a settlement.

In the full sample of verdicts, less than half of verdicts are actually reduced: 29.2% of verdicts are increased relative to the end payment and 27% are unchanged. Approximately 20.9% of verdicts are reduced by 50% or more and 6% of verdicts are eliminated entirely. These numbers vary considerably depending on whether or not there is a settlement or appeal. Verdicts without settlements are less likely to be reduced (just 27.4%) but when they are reduced they are much more likely to be eliminated (11.5%). On the other hand, verdicts with a settlement are reduced in 58.7% of the sample but are almost never eliminated (just 0.9% of verdicts). Verdicts with an appeal are less likely to be unchanged and more likely to be reduced. This is particularly pronounced for verdicts with an appellate decision: just 4% of verdicts with an appellate decision are unchanged in the final payment, 68.6% are reduced and 19.5% are eliminated entirely.

Considerably more detail about the post-trial adjustments that are most commonly made to jury verdicts is provided in Pace, Seabury and Jain (2009). For the purposes of this paper, it is enough to note that both settlement and appeal often lead to substantial reductions in the amount defendants ultimately pay to plaintiffs. This helps motivate the earlier assumption that the defendant is the party that is most likely to file an appeal in a case.

D. Empirical Framework

The empirical objectives of this paper are to estimate the settlement and appeals rate of civil cases after a verdict has been delivered and to relate these to the size of the jury verdict award and defendant financial constraints. The primary outcomes of interest are best modeled as groups of discrete outcomes: did the case settle or not, was an appeal filed, was a decision reached, etc. These outcomes can be incorporated into a latent variable model:

$$y_{ij}^{*} = \gamma_j A_i + X_i \beta_j + \varepsilon_{ij}$$

where y_{ij}^{*} is the unobserved latent variable representing an index of the "attractiveness" of outcome *j* in case *i*, for $i = 1,...,N$ and $j = 1,...,J$. The vector *X* represents a set of other observable characteristics of a given case. While the latent variables are not directly observed, the following set of binary outcomes is observed:

$$y_{ij} = \begin{cases} 1 & if\ y_{ij}^{*} - y_{ik}^{*} \geq 0 \\ 0 & otherwse \end{cases} \qquad for\ all\ k = 1,...,J-1$$

Applying this to the model discussed previously, where further legal action is pursued or not based on the difference in expected utility between the two parties, we can interpret the latent variable y_{ij}^{*} as an index of the litigants' net expected utility of outcome *j*. We only observe an outcome *j* when it dominates the others in expectation.[13]

Three different sets of choice outcomes are each modeled with four distinct outcomes. The first model considers resolution of a case without settlement or appeal,

[13] There are some outcomes that rule out the possibility of another before the actual utility of both parties is known. For example, settling a case before filing appeal means that the litigants don't actually know the utility that each would face if an appellate decision was made. However, if we observe such a settlement, it means that the gains to settling outweighed the litigants' expectations of utility that would result after a decision.

settlement with no filing for appeal, filing for appeal with no settlement or resolution with a settlement and an appeal. The second model considers appeal outcomes in cases in which an appeal was filed. The outcomes are no decision, a decision that increased the verdict, a decision that left the verdict unchanged or a decision that reduced the verdict. Finally, the following reasons for settlement are considered: no settlement, settlement motivated by defendant financial constraints, settlement motivated to end or forestall an appeal and settlement for some other reason.

If defendants face no financial constraints we would expect both the observed likelihood of settlement and the defendant win rate in cases heard at appeal to be declining in the size of the verdict.[14] Unfortunately, in the data used in this paper we cannot directly observe whether or not defendant financial constraints are an issue unless a case settles. However, financial constraints become relevant only as the size of the verdict increases. Thus, we would expect cases to settle more frequently and appellate decisions to be more likely to favor defendants in cases with large, high stakes verdicts in which financial constraints are binding. The data on the reasons for settlement allow us to verify that the financial constraints are indeed more binding as the stakes of the case increase. [15]

The relationship between the size of the verdict and the likelihood of a given outcome in each choice set is estimated using a multinomial probit model. As is the case with a standard two-outcome probit model, interpreting the estimated impact of a variable

[14] Strictly speaking we would also expect the rate of appeal to be declining. However, given the relatively low filing costs and the strict timelines for filing an appeal, we might expect to see filings in higher stakes cases even when the likelihood of ever actually going to court is small.

[15] At first glance, it might seem obvious that this is the case. Over the full range of verdicts, however, we might not find this kind of relationship if larger verdicts were systematically more likely to be assessed against "deep pocket" defendants less likely to be constrained.

on the outcome is not as simple as examining the sign and size of the coefficient because the marginal effect depends on the values of all the different variables in a nonlinear manner. To illustrate the effect of the damage award, we compute the marginal effect of the jury award evaluated for each outcome at different jury award values. Specifically, we evaluate $\left.\frac{\partial p_j}{\partial A}\right|_{A=A_0} = \left\{\frac{1}{N}\sum_{i=1}^{N}\phi\left(\hat{\gamma}_j A_0 + X_i\hat{\beta}_j\right)\right\}\hat{\gamma}_j$ where ϕ is the standard normal density function. We then repeat the process replacing A^0 with A^1, A^2, etc. Comparing how the predicted values of each outcome change across different values of the award allow us to estimate how the marginal effect changes as the award increases.

A limitation of the marginal effects in this setting is that they only reflect differences in the likelihood of an outcome relative to the base case and provide relatively little insight as to how the full set of outcomes changes as the verdict increases. Thus, we also evaluate the predicted share of the different outcomes by taking the predicted probability at different values of the jury verdict. This is defined as $\bar{\hat{p}}_j\left(A^0\right) = \frac{1}{N}\sum_{i=1}^{N}\hat{p}_{ij}\left(A^0\right)$ where $\hat{p}_{ij}$ is the predicted probability of outcome *j* for case *i*. Comparing how the predicted values of each outcome change across different values of the award allows us to estimate how the shares of the different outcomes vary as the award increases.

Standard errors for the predicted values and marginal effects are constructed using 500 bootstrap replications. Specifically, a weighted bootstrap is used in which the probability that a given case is selected into each bootstrap replication is proportional to the nonresponse weights. The full set of estimations is conducted on each replication and

the standard deviation of the marginal effects and predicted values from the bootstrap replications are used as the standard error estimates.

In many applications, the multinomial probit model is the preferred estimation method because it does not require the independence of irrelevant alternatives (IIA) assumption. That is only true, however, when there are alternative specific variables available to identify the model. In our setting this would require information, for example, on the differential cost of settlement or appeal. Because no such information is available in our data the multinomial probit model must be estimated under the standard IIA assumption. In our application the IIA assumption requires that the relationship of a variable such as award size and the likelihood of settling the case relative to simply paying the verdict in full is unaffected by whether or not litigants have the option of an appeal. Hausman tests are conducted to test empirically whether or not the IIA assumption appears to be violated in the estimation sample.

E. Results

Table 4 reports the marginal effect of the jury verdict award variable for the three sets of multinomial probit estimates. Each panel reports the marginal effects for a different set of choice outcomes. For each set of outcomes the marginal effects are evaluated at four hypothetical values of the jury award: $10,000, $100,000, $1 million and $100 million. These values are chosen simply to illustrate outcomes over a plausible range of high and low stakes cases.[16] Bootstrap standard errors on the marginal effects are reported in parentheses.

[16] The results are consistent when a wider range of values is considered.

The top part of Table 4 reports the marginal effects of the jury award on the likelihood of settlement, appeal or both relative to the base outcome of neither. The marginal effect of the award on the likelihood of an appeal without a settlement is positive and highly significant for all hypothetical award values. The effect is also stronger for the higher stakes cases. The marginal effect of the verdict on the likelihood of a settlement without an appeal is also positive and significant in all cases, though it is not increasing with the verdict. The likelihood of both an appeal and settlement is also positive in all cases and is quite large for the $1 million verdicts (0.181). However, it is small and not significant for the $100 million verdicts.

The middle panel of Table 4 reports the marginal effects for the likelihood of settling for different reasons against the base outcome of no settlement. The marginal effect for settling due to defendant financial constraints is positive and significant at all verdict amounts. It also increases significantly; it rises from 0.013 at a $10,000 award to 0.095 at a $100 million award. The marginal effect of the award on settlement to end or forestall appeal is increasing, though it does not increase as much as the marginal effect of defendant financial constraints. In fact, the marginal effect on settlement to end appeal is larger than that for settlement due to defendant finances at the lowest hypothetical award (0.033 to 0.013) but lower at the highest hypothetical award (0.068 to 0.095). The marginal effect on settlement for other reasons is positive and significant, though it does not noticeably increase or decline.

The bottom panel of Table 4 reports the marginal effects for the impact of the jury verdict award on the likelihood of different appellate court outcomes against the base outcome of no decision. While the marginal effects for the impact of the size of the

award on the likelihood that the award is either increased or unchanged are all negative, none are statistically significant at any of the award values. The marginal effect of the award size on the likelihood that the award is reduced is both positive and significant at the 10% level or better at each of the hypothetical award amounts.

These results are easier to interpret when we also consider the predicted values for all outcomes, including the base outcomes, at different award levels. Figure 2 reports the predicted values for the decision of whether to settle, appeal or both. Each panel reports the predicted values for a different outcome. The predicted values are plotted at nine different hypothetical verdict amounts, including the same four as in the tables as well as some others to help fill out the table.[17] The bars represent the 95% percent confidence intervals estimated using the bootstrap.

The figure shows that the lowest awards, those with an award of $10,000, are resolved without any settlement or appeal in about 50% of cases. On the other hand, over 80% of the hypothetical $1 billion dollar verdicts involve experience both a settlement and an appeal. The likelihood of an appeal without a settlement is initially increasing and then decreasing in the size of the verdict. As for the likelihood of settlement without appeal, it is primarily decreasing in the award size. The predicted values appear to be estimated precisely enough to suggest that the patterns observed are statistically significant.

Predicted values for the likelihood of settlement broken down by reason for settlement are reported in Figure 3. The layout of the figure is identical to before, with each panel reporting a different outcome. From the figure we see that the likelihood that

[17] Note the hypothetical values are not evenly spaced, so some care should be used in evaluating differences between the points.

a case fails to settle is sharply decreasing in the size of the verdict, which is consistent with Figure 2. Of the three reported reasons for settlement the one most closely related to the size of the award is settlement due to defendant financial constraints. This increases from just 2% for a case with a verdict of $10,000 to 30% for a case with a $100 million verdict and 42% for a case with a $1 billion verdict. The likelihood that a case settles to end or forestall an appeal does increase from 9% for a $10,000 verdict to 27% for a $100 million verdict. The rate of increase is noticeably smaller at the larger case values though (it increases to just 28% for a case with a $1 billion verdict). There is not a clear relationship between the likelihood of settlement for other reasons and the jury size. It is worth noting that while the general patterns described here seem significant, the confidence intervals are quite wide at the largest verdict amounts, so we cannot rule out that some of the differences between verdict amounts are zero.

Figure 4 reports the predicted likelihood of different outcomes from the appeal for different values of the jury verdict award, using the same layout as the previous figures. The only clear relationship immediately evident from this figure is that the likelihood an award is reduced on appeal is strictly increasing in the award size. There is no clear relationship between the award size and the likelihood that there is no decision. It appears to decline somewhat at the highest award amounts although the confidence intervals are wide and the relationship does not appear statistically significant. There does appear to be a negative relationship between the likelihood that an award is increased or unchanged after a decision is reached though, again, the confidence intervals are too wide to state this with any confidence. But the likelihood that an award is reduced increases from 19% for a hypothetical verdict of $10,000 to 54% for a

hypothetical verdict of $100 million. For a hypothetical verdict of $1 billion the likelihood of a reduction is 62%.

Taken together, these results suggest several empirical relationships that are consistent with the predictions of the model. First, the likelihood of a post trial settlement is strictly increasing in the size of the jury award. While there could be several reasons the settlement rate increases, it is clear that defendant financial constraints are an important factor in driving this relationship. The model predicts that we should be less likely to observe an appellate decision when defendant finances are an issue, although the evidence on that found in this paper is weak at best. However, we do find that the cases that fail to settle before an appellate decision is reached are ones in which a defendant win is more likely. In other words, the empirical results appear to suggest that defendant financial constraints promote settlement at larger award values and they appear to promote settlement more often in cases in which a defendant win is less likely. As a result, appellate courts appear systematically more likely to preside over cases in which the defendant has the stronger position.

As mentioned earlier, the predictions of the model are not wholly distinct from predictions that would arise if the appellate courts displayed a significant bias towards defendants. However, we do note one point of suggestive evidence that seems to argue against biases as entirely explaining the results of this paper. Specifically, in cases where the appellate courts made a decision, the size of the jury award is largely unrelated to the actual change in the verdict. In other words, while cases with larger verdicts appear more likely to be reduced on appeal, the actual size of the reduction appears unrelated to

verdict size.[18] If our findings that cases with larger verdicts are more likely to be appealed and reduced on appeal were driven solely by a bias of the courts in favor of defendants, we would probably expect the courts to make larger reductions to the verdict on behalf of defendants.

Table 5 presents the results of some specification tests that validate the robustness of the findings. The results of three sets of Hausman specification tests are provided, the test of the IIA assumption mentioned previously and tests of model equivalence when cases with punitive damages are dropped or when automobile personal injury cases are dropped. Separate tests are run for the settlement and appeal decision, the reasons for settlement and the appeal outcomes. In each case we present chi square test statistics and *p*-values for tests of overall model equivalence and the equivalence of the coefficient on the logged jury verdict variable. The null hypothesis for each test is that the estimates from the base model are identical to the alternative test specification and a rejection of this hypothesis questions the validity of the specification.[19]

Overall, the Hausman tests appear to support the validity of the chosen specifications. Only once is the test of model equivalence rejected, in the test of the reasons for settlement when punitive damages are dropped. The test fails to reject the equivalence of the jury award coefficient in all models except for the test of the IIA

[18] Specifically, we regress the percentage change in the jury verdict award directly resulting from an appellate court decision against the size of the jury verdict logged and other case characteristics. The coefficient using the full sample of decisions in which such a change was noted (104 cases), was -0.317 (p=0.192). If we consider only cases in which there was no increase in the verdict (85 cases)—cases with increases are probably more likely to have involved a plaintiff appeal—the coefficient is -0.021 (p=0.545). Finally, if we condition on cases with an actual reduction in the appellate decision (69 cases), the coefficient is 0.033 (p=0.325).

[19] For the tests of the cases involving punitive damages or automobile personal injury cases, the alternative test specification is simply the estimated model with these cases dropped. For the test of the IIA assumption, the alternative test specification is the estimated model dropping all observations with one of the outcomes (e.g., in the test of the settlement and appeals decision, the appeal with no settlement outcome was dropped).

assumption in the settlement and appeals decision (and then at just the 10% level). Overall, just two of the 18 tests reported reject at the 10% level or better, which is close to what we would expect from random chance.

F. Conclusions

This paper examines the relationship between the size of the damage award granted by a jury and the likelihood of post-trial settlement and appeal. The paper argues that financial restrictions limiting a defendant's ability to pay a verdict in full will lead to a systematic bias in which high stakes cases will only proceed to appellate court when the defendant has a stronger case. This prediction is confirmed using a survey of attorneys from a sample of over 500 verdicts in California and New York from 2001-2004.

The nonrandom selection of cases to the courtroom is important because court cases disproportionately affect litigant expectations. While a majority of cases settle out of court, all settlement negotiations occur based on litigant expectations about what might happen if the case proceeded to trial. This suggests that in a majority of cases litigants might be basing their expectations using data from a nonrandom sample which can lead to biases. This is potentially even more important in appellate cases, given the lawmaking powers they have. If appellate courts are presented with cases that systematically differ from the "typical" case, even the typical case in which a mistake is made, this could affect the evolution of civil laws in unintended ways. Evaluating any systematic differences in the types of errors in cases that are appealed from those that are not is a potentially interesting avenue for further work.

Appendix

The paper uses data from a 2006 survey conducted by the RAND Corporation to study the post-trial adjustments in civil cases. Because of the complexity of the civil justice system, and the number of possible outcomes that can happen in any given case, the survey form used was necessarily long and complex (15 questions with numerous responses and subsections that covered 13 pages). The overall survey was primarily focused on identifying the sources and sizes of changes to the jury verdict amount, and covered several topics (e.g., details about the final judgment entered by the trial judge, or the lack thereof) that were not used in this study. This appendix reports the two questions that were most relevant for this paper, the question regarding the outcome of appeals, if any, and the reasons for settlement.

The question on appeals was written as follows:

Did any appellate court render a decision on the merits of an appeal in this case following the delivery of the jury's verdict? *(check appropriate response)*

A: ____ **No,** there was no appellate decision rendered. *(indicate why not below)*

i. ___ No appeal was attempted.

ii. ___ Appeal was attempted, but all appellate courts denied or rejected all requests by petitioners to be heard.

iii. ___ Appeal was attempted, but the matter was resolved before any appellate court could rule on the merits.

iv. ___ Appeal was attempted and a final decision is still pending.

v. ___ Litigation is ongoing and an appeal is still possible.

B: ____ **Yes,** an appellate decision was rendered. *(indicate the outcomes of the decision of the highest court below)*

i. ___ The trial court's final judgment entered in the case was affirmed.

ii. ___ The trial court's final judgment entered in the case was reversed in favor of the defendants.

iii. ___ The trial court's final judgment was set aside or vacated (in whole or in part) and a new trial granted.

iv. ___ A new trial was conditionally granted by the appellate court unless the parties agreed to a stipulated judgment that involved a change in the award (i.e., an additur or a remittitur). (*describe below*)

a: Was the requested stipulated change an ___ **increase** or a ___ **decrease***?*

b: What was the size of this change ? $_____

c: Did the change specifically affect non-economic damages rather than the overall verdict? ____Yes ____No

d: Did the change specifically affect punitive damages rather than the overall verdict? ____Yes ____No

v. ___ The decision directly changed the size of the monetary award entered into judgment. (*describe below*)

a: Was the direct change an ___ **increase** or a ___ **decrease***?*

b: What was the size of this change ? $ _____

c: Did the change specifically affect non-economic damages rather than the overall verdict? ____Yes ____No

d: Did the change specifically affect punitive damages rather than the overall verdict? ____Yes ____No

iv. ___ Other result (describe: _____).

C: ____ Unable to answer, records are incomplete or cannot recall.

The question used to capture the reasons for settlement read was:

If there were any settlements in this matter, why did the parties agree to settle at least some aspects of this case for an amount different than what the jury ultimately awarded at trial or what the judge entered in a final judgment? *(check all that apply)*

A: ____ There was no settlement in this case.

B: ____ There were indications that a new trial would be ordered if there was not a settlement or a stipulation to the entry of a judgment different from the jury's original award.

C: ____ The case was settled for approximately the limits of the defendants' existing insurance coverage.

D: ____ The case was settled for less than the verdict or the final judgment because the defendants' reasonably or readily available assets (insurance or otherwise) would be insufficient to satisfy the full amount.

E: ____ Settlement would avoid an adverse ruling or continued delay or costs from an appellate court regarding an in-progress appeal.

F: ____ Settlement would avoid the possibility of a party making an appeal in the future.

G: ____ Settlement would avoid the uncertainty of a verdict in a subsequent trial.

H: ____ Settlement would avoid the uncertainty of or the delay from a subsequent ruling by the trial judge.

I: ____ Other (describe: _____

J: ____ Unable to answer, records are incomplete or cannot recall.

K: ____ Settlement would expedite payment following jury verdict or entry of final judgment.

L: ____ Settlement waived all or part of post-judgment interest.

M: ____ Settlement included some adjustment for postverdict or post-judgment costs such as additional attorneys fees, costs, or interest

N: ____ Third party liens were reduced or waived against verdict.

O: ____ Plaintiff insisted on settlement or had economic or other hardship.

P: ____ Payment of verdict in full would avoid entry of judgment against defendant, and\or judicial imposition of costs, fees, or interest, and\or the effort needed to complete a formal judgment and satisfaction (versus a release and stipulation).

Q: ____ Potential death of plaintiff was a concern.

R: ____ Settlement reflects possible adjustments for collateral sources and prior settlements.

S: ____ Settlement allowed additional flexibility in designing future payments, structure settlements, payments, guarantees, or terms.

T: ____ Settlement reflects likely postverdict adjustment that would have been made by the trial court in the future.

U: ____ Settlement reflected compromise of additional unresolved claims plaintiffs could have brought against defendants in the future.

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Figure 1
The Impact of Appeal on Award Recovery with Defendant Financial Constraints

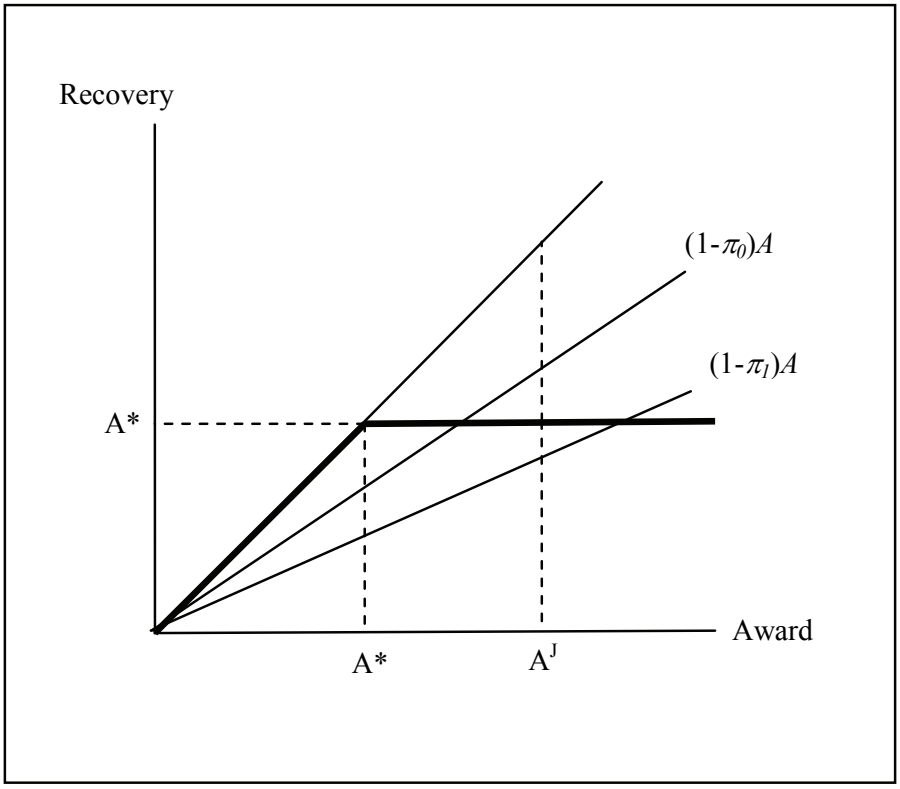

Figure 2
The Predicted Probability of Post-Trial Settlement and Appeal

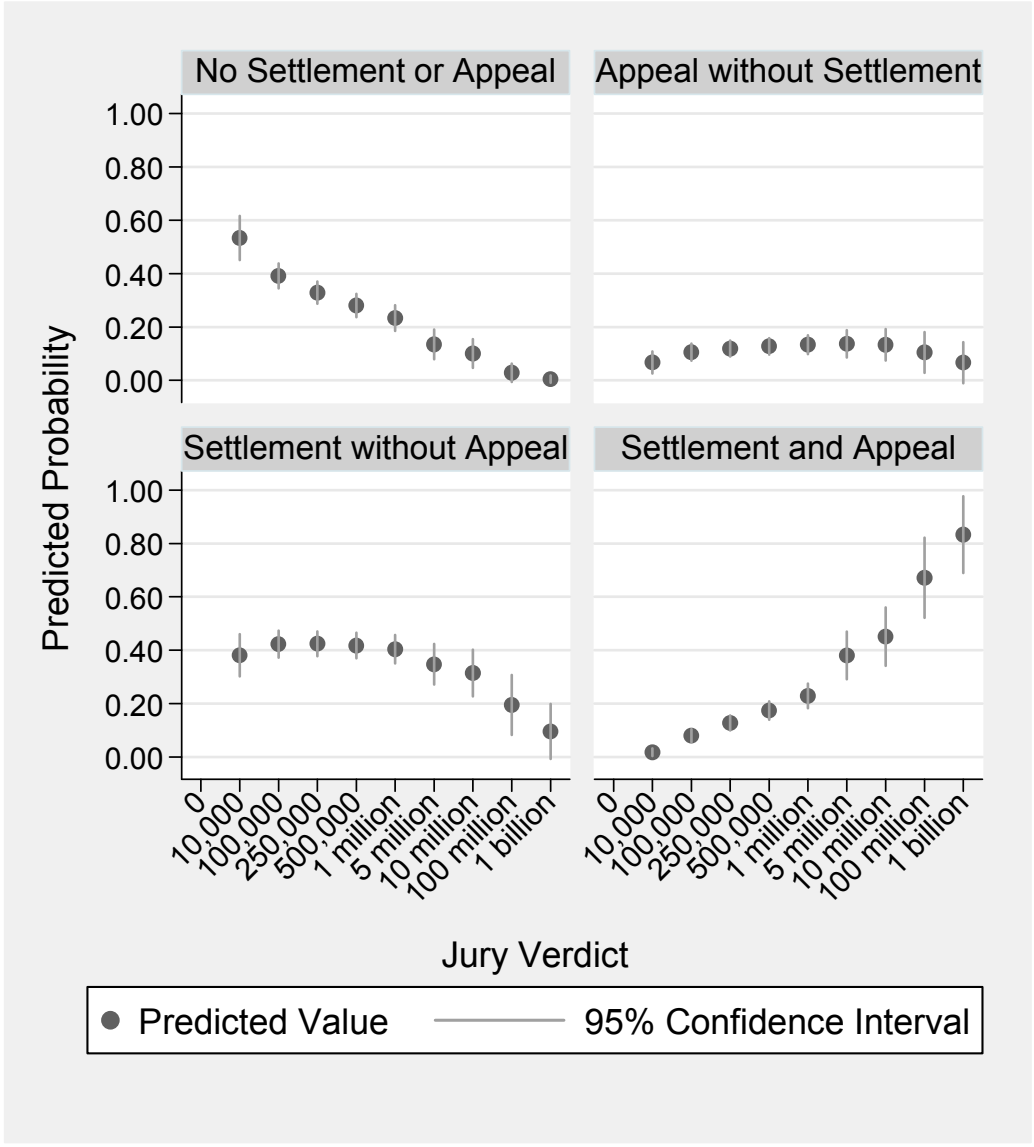

Figure 3
The Predicted Probability of Post-Trial Settlement by Jury Award and Reason for Settlement

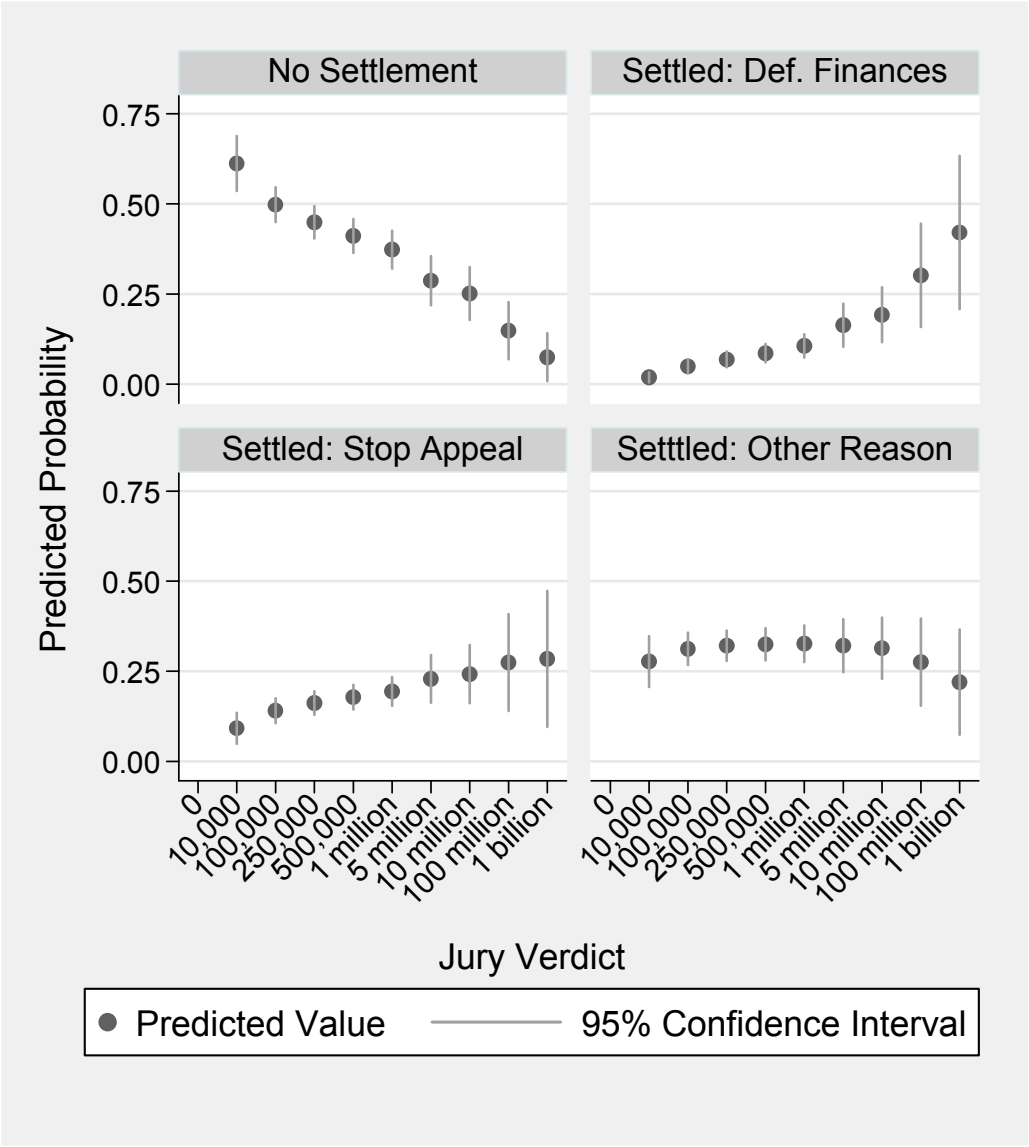

Figure 4
Predicted Probability of Outcome of Appeal by Size of Verdict

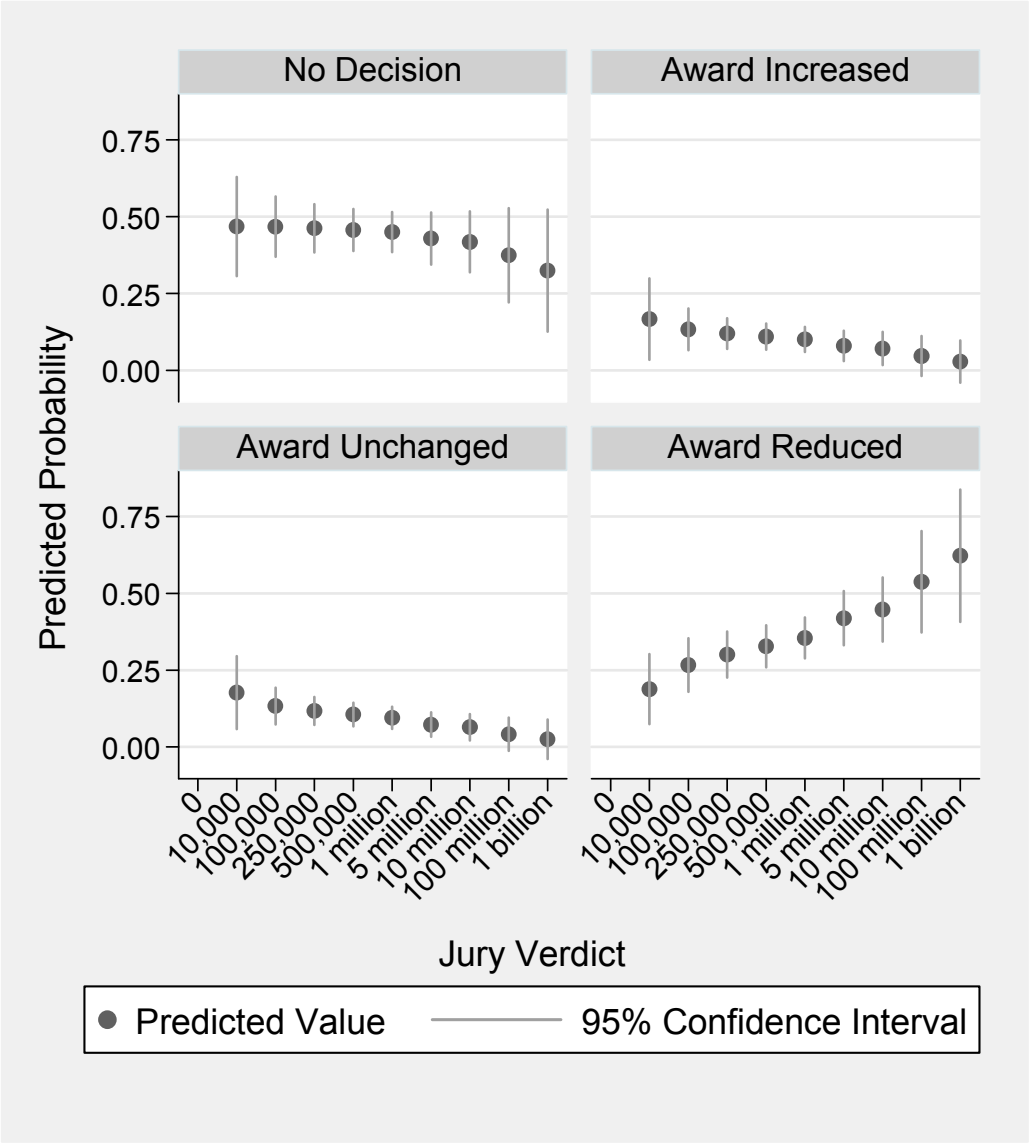

Table 1

The Empirical Distributions of Total and Compensatory Jury Verdict Awards in the Sample

	Total Award	Compensatory Award
	Millions of Year 2006 Dollars	
Mean	24.36	2.97
(Standard Deviation)	(756.17)	(17.24)
10th Percentile	0.01	0.01
25th Percentile	0.06	0.05
Median	0.27	0.26
75th Percentile	1.13	1.06
90th Percentile	4.87	4.23

Notes: Statistics are calculated using weights calculated to reflect the likelihood of nonresponse of different cases. The sample includes 562 jury verdicts with completed survey responses.

Table 2

Summary Statistics of Verdict Characteristics and Post-Trial Outcomes

	All Verdicts		Verdicts without Punitive Damages		Verdicts with Punitive Damages	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
In California	0.44	0.50	0.42	0.49	0.77	0.42
Involved Collateral Sources	0.07	0.26	0.07	0.26	0.05	0.23
Type of Case:						
Medical Malpractice	0.15	0.36	0.16	0.36	0.02	0.14
Product Liability	0.02	0.14	0.02	0.14	0.03	0.17
Automobile Personal Injury	0.34	0.47	0.36	0.48	0.04	0.19
Post-Trial Outcomes:						
Negotiated Settlement	0.55	0.50	0.55	0.50	0.58	0.50
Appeal Filed	0.28	0.45	0.25	0.44	0.66	0.48
Appellate Decision	0.16	0.37	0.15	0.35	0.44	0.50

Notes: Statistics are calculated using weights calculated to reflect the likelihood of nonresponse of different cases. There are 85 verdicts (approximately 15%) with nonzero punitive damages in the sample.

Table 3

Changes from Verdict to the End Payment by Post-Trial Outcome

	All Verdicts	Verdicts without Settlement	Verdicts with Settlement	Verdicts with Appeal	Verdicts with Appellate Decision
Change in the End Payment:					
Increased	0.292	0.360	0.230	0.274	0.274
No Change	0.270	0.366	0.182	0.078	0.040
Any reduction	0.439	0.274	0.587	0.648	0.686
Reduced 50% or more	0.209	0.184	0.233	0.365	0.427
Eliminated	0.060	0.115	0.009	0.195	0.195

Notes: Statistics are calculated using weights calculated to reflect the likelihood of nonresponse of different cases.

Table 4

Marginal Effects of the Size of the Jury Verdict Award on Post-trial Outcomes, Estimates from Discrete Choices Models

		Jury Verdict Amount:			
		$10,000	$100,000	$1 Million	$100 Million
Settlement and Appeal Decisions *Omitted: No Appeal or Settlement*	Appeal without Settlement	0.033	0.061	0.085	0.073
		(0.005)**	(0.013)**	(0.023)**	(0.010)**
	Settlement without Appeal	0.053	0.055	0.051	0.033
		(0.013)**	(0.015)**	(0.014)**	(0.005)**
	Appeal and Settlement	0.021	0.105	0.181	0.020
		(0.007)**	(0.013)**	(0.024)**	(0.013)
Reasons for Settlement *Omitted: No Settlement*	Financial Constraints	0.013	0.041	0.081	0.095
		(0.004)**	(0.007)**	(0.017)**	(0.009)**
	End or Forestall Appeal	0.033	0.052	0.069	0.068
		(0.004)**	(0.011)**	(0.018)**	(0.009)**
	Other Reasons	0.039	0.044	0.047	0.042
		(0.010)**	(0.014)**	(0.015)**	(0.009)**
Appeal Outcomes *Omitted: No Decision*	Award Increased	-0.020	-0.018	-0.016	-0.011
		(0.021)	(0.020)	(0.017)	(0.010)
	Award Unchanged	-0.025	-0.021	-0.018	-0.011
		(0.022)	(0.019)	(0.014)	(0.011)
	Award Reduced	0.034	0.038	0.041	0.038
		(0.012)**	(0.018)**	(0.022)*	(0.015)**

Notes: Table reports the marginal effects of the logged jury verdict award on the probability of different discrete choice outcomes. Coefficient estimates can be interpreted as the marginal change in the probability of an outcome relative to the omitted base outcome in response to a 1% change in the jury verdict award. Each row represents a different outcome from a set of possible choices. Each choice set is estimated using a multinomial probit model, and the marginal effect is evaluated at different values of the jury verdict award. All models include dummies for state, involving collateral sources, medical malpractice, automobile personal injury, product liability, the year of verdict and the type of attorney responding. Bootstrapped standard errors based on 500 bootstrap replications are reported in parentheses. A * or ** indicates statistical significance at the 10% level or at the 5% level or better, respectively.

Table 5
Specification Tests for Discrete Choice Models

	No Punitive Damages		No Auto Personal Injury Cases		Independence of Irrelevant Alternatives	
	Test of Model Equivalence	Test of Equivalence of Coefficient on Jury Award	Test of Model Equivalence	Test of Equivalence of Coefficient on Jury Award	Test of Model Equivalence	Test of Equivalence of Coefficient on Jury Award
Choice Model:						
Settlement and Appeal Decisions	21.055 (0.992)	5.171 (0.160)	23.815 (0.974)	4.722 (0.193)	21.129 (0.820)	5.319 (0.070)*
Reasons for Settlement	1,426.660 (<0.01)**	4.745 (0.191)	27.747 (0.767)	2.738 (0.434)	13.105 (0.975)	1.804 (0.406)
Appeal Outcomes	26.724 (0.9320	1.454 (0.693)	18.469 (0.998)	3.149 (0.369)	25.056 (0.625)	0.508 (0.776)

Notes: The table reports test statistics from Hausman tests of equivalence between different specifications of the discrete choice models. Each row represents a different set of choice outcomes, and each pair of column reports the Chi-square test statistic from a joint test of the equivalence of the coefficients in the different specifications. Separate test statistics are provided for tests of the equivalence of all common coefficients in the models as well as just the coefficient on the jury award variable. P-values are presented in parentheses. A * or ** indicates statistical significance at the 10% level or at the 5% level or better, respectively.