The INDEPENDENT INSTITUTE

Runaway Judges? Selection Effects and the Jury

Independent Institute Working Paper #2

Eric Helland and Alexander Tabarrok

September 1999

Runaway Judges?
Selection Effects and the Jury

Eric Helland* and Alexander Tabarrok**

Preliminary and Incomplete
Please Do Not Cite Without Permission

Abstract

Reports about runaway jury awards have become so common that it is widely accepted that the US jury system needs to be 'fixed.' Juries, it is claimed, are swept away by emotional testimony from sympathetic victims. Juries are pro-plaintiff and anti-business. Proposals to alter the court system, usually by limiting the plaintiff's right to a jury trial and increasing judicial discretion over awards, are common features of many tort reform plans. Such tort reform plans implicitly assume that judges decide cases differently than juries. Using a large sample trials, we show that there are large differences in mean awards and win rates across juries and judges. The mean jury award is hundreds of thousands of dollars higher than mean judge award and, somewhat surprisingly, win rates before juries are significantly lower than win rates before judges. But if the types of cases coming before juries are different from those coming before judges, mean award and win rates may differ even if judges and juries would make the same decisions when faced with the same cases. How much of the difference in mean awards and win rates can be explained by differences in the sample of cases coming before judges and juries? To answer this question, we control for observable differences in case types, injuries, major differences in tort law across the states and other factors. Using data on settlements, trial mode and plaintiff success, we also control for unobserved sample selection effects. After controlling for observed and unobserved selection we find that 75% of the difference in judge and jury mean awards and 30% of the difference in win rates can be explained by sample selection effects. We then compare judge and jury decisions directly and show that on most dimensions we cannot reject the hypothesis that judges and juries make identical decisions. On some dimensions, however, there remain robust and suggestive differences between judges and juries.

* Dept. of Economics, Claremont-McKenna College, eric_helland@MCKENNA.EDU
** The Independent Institute, Oakland, CA, 94621-1428, ATabarrok@Independent.org. The views expressed here are solely those of the authors and do not necessarily reflect the views of The Independent Institute.

1. Introduction

The American civil jury is on trial. It has been charged with being biased in favor of the plaintiff, subject to emotion rather than reason, inaccurate in its understanding of law, and wildly unpredictable. Evidence of jury bias, in the form of the anecdote, is found regularly on the pages of the Wall Street Journal and in the popular press.[1] Anecdotes, however, almost invariably focus attention on the atypical rather than the typical, and are thus misleading.[2] Furthermore, anecdotes juries, even if accurate, may miss the point if judges would have made the same decisions in the same circumstances. Realistic reform requires that we compare alternative institutions, all of which may be imperfect. If judges and juries decide cases similarly, then the charges leveled against the jury are moot since the judge is the primary alternative decision maker. Only if judges decide cases differently, do restrictions on civil juries have any hope of achieving their aims. It is therefore important to bring the available evidence to bear on this fundamental question, Do trial judges reach systematically different decisions than juries?

In Section Two we survey the literature on judge versus jury trials. In Section Three we discuss our data set and present data on mean awards and win rates across judge and jury trials. The fact that the average jury award is much larger than the average judge award is the point of departure for the remainder of the paper. How much of this difference may be explained by differences in the sample of cases coming before judges and juries? In Section Four we take up this question by progressively controlling for larger sets of independent variables and then by using the Heckman (1979) technique to allow for a more sophisticated error structure across selection and award equations. After exhausting the sample selection explanation for the differences in mean awards and win rates, we turn in Section Five to the corollary question, 'Holding the sample of cases constant, in what respects do judges decide cases

---

[1] See for example Adler (1994).
[2] In other cases the anecdotal evidence is just wrong. For example Vidmar (1997) points out that the well known case of a women who was awarded damages because a CAT scan destroyed her psychic abilities

differently than juries?' A direct comparison of judge and jury award equations reveals small but significant differences in judge and jury decision processes. Although our focus is on awards, we also examine differences in win rates and ask how much of the judge/jury difference may be explained by sample selection and how much by differing decision processes. In Section 6 we offer some concluding remarks.

2. Judges versus Juries

Are juries out of control? Compared to whom? The usual answer has been 'yes,' at least compared to judges. In particular, juries in personal injury torts are often accused of compensating sympathetic accident victim even when the defendant has not committed a tort. The North Carolina Hospital Association, for example, claimed that:

> "Often awards have little relationship to the seriousness of injury. There is no way to predict how a jury will rule on a particular set of facts…Often awards bear no relationship to economic losses…today juries often make awards regardless of the 'fault' of anyone – out of sympathy for an injured persion…too often juries appear to award on [the] basis of emotion as opposed to facts and/or realistic evaluation of case circumstances."[3]

Judges, in contrast to juries, are said to be better able to evaluate complicated evidence (a factor in many medical malpractice and product liability trials), less likely to be swayed by emotion, and more likely to closely follow the principles of tort law. Tort reforms, therefore, typically try to limit the jury's discretion by imposing limits on the amounts that juries may award for pain and suffering, to give one example. More generally, opponents of the tort system point out that in almost every country but America, judges are the dominant legal decision makers. Accordingly, they suggest that the American relaince on the jury is anachronistic and should be curtailed.[4]

---

had in fact suffered permanent brain damage due to an allergic reaction to a contrast dye and collected damages because of her inability to work. Her job merely happened to be a psychic.

[3] Reported in United States General Accounting Office (U.S. GAO), *Report to Congressional Requesters, Medical Malpractice: Case Study in North Carolina* (Dec, 1986). This and many other similar quotations can also be found in Vidmar (1997).

[4] Schuck (1993) reviews a number of jury reform proposals.

Perceived differences between juries and judges are not limited to critics of the tort system. Practionier's handbooks on trial law, for example, often suggest that "As a general rule, most plaintiffs with highly charged cases want a jury in the hope that the jury will be swept away in a tide of emotion and award large damages (Izard, 1998)." Juries are also said to be preferable when the case does not rest on complex facts or legal technicalities and when the plaintiff is a "little guy" relative to the defendant.[5]

One would expect lawyer perceptions of the trial process to be reasonably accurate, so it's quite surprising that the academic literature on judges versus juries does *not* find large difference in decision making. In their classic study, *The American Jury*, Kalven and Zeisel (1966) surveyed the judges who presided over some 4000 civil *jury* trials. In 78% of the trials, the presiding judges would have ruled the same as the juries had it been up to them. This rate of agreement is comparable to the rate of agreement among different experts of all kinds (for example, scientists doing peer review, physicians diagnosing patients etc.) and importantly it is comparable to the rate of agreement among different judges (Diamond, 1983).[6] When Kalven and Zeisel found disagreement among judge and jury it was about just as likely that the judge found liability and the jury did not as the reverse.[7]

Most of the studies of judge/jury differences rely on hypothetical questions – judges are asked what they would have done *if* they had been responsible for deciding the case - or they rely on artificial experiments. Almost no research has been done using non-survey data on judge and jury outcomes. The first systematic effort to look at this question using litigation data was by Clermont and Eisenberg (1992). Clermont and Eisenberg compare win rates and awards

[5] See, for example, Izard (1998), or Haydock and Sonsteng (1991).
[6] Interestingly this rate of agreement is almost identical to the appeals courts affirmation rate of trial verdicts (81%). See Clermont and Eisenberg (1999).
[7] The Kalven and Zeisel results are supported by other research showing that judges and juries reach similar decisions in similar cases and that juries appear to respond to information in reasonable ways. A number of papers in Litan (1993) make this point, see especially Lempert (1993, 235) who writes "The weight of evidence indicates that juries can reach rationally defensible verdicts in complex cases [and] that we cannot assume that judges in complex cases will perform better than juries..." The literature on the quality of jury decision making is reviewed in Hans and Vidmar (1986), see also Clermont and Eisenberg (1992).

in a sample of Federal civil trials. They find that win rates often differ significantly across the trial forum and not always in ways predicted by the critics of the jury system – in some types of cases plaintiff win rates are higher in judge trials than in jury trials. Clermont and Eisenberg are primarily interested in explaining why judge trials are more prevalent in some areas of litigation than in other areas. In particular, they focus on the puzzle of why plaintiffs predominantly choose jury trials even in case categories where judge win rates are significantly higher than jury win rates. They suggest that a combination of selection effects and misperceptions might explain the data.

3. Mean Awards and Win Rates

To test whether judges and juries decide cases similarly we use a large data set which includes data on settlements as well as on trial outcomes. The data was extracted from Jury Verdict Research's Personal Injury Verdicts and Settlements on CD-ROM.[8] Data from trials are drawn directly from court records. Using an extensive survey of lawyers, JVR also collects data on settlements. Our data set contains information on 59,299 trials, and 27,434 settled cases.[9] The data set spans all of the 50 states. The earliest cases were tried in 1988 and the most recent cases date from 1996. All award amounts are corrected for inflation by conversion into 1996 dollars.

Table 1 presents data on win rates, mean and median awards, the log standard deviation of awards, and the number of trials in each category (Table 1 does not include data on settlements). At first glance, the table appears to support the claims of jury reformers that the jury is biased towards the plaintiff. The mean award in a case before a jury is more than twice as large as the mean award in a case before a judge. Contrary to the conventional wisdom, however, the win rate before judges is significantly higher than the win rate before juries.

---

[8] JVR markets their data to lawyers who are seeking to ascertain the value of their cases by comparing them with other similar cases. In other words, lawyers use JVR data create rational expectations of case outcomes. The JVR data set is the largest and most extensive data set on state court records currently extant. In our estimation the data set is of much higher quality (in terms of accuracy, missing records, size, and extent of coverage) than most government generated data sets.

[9] The data set originally contained two extreme outliers, awards of 4.25 and 5 billion. We eliminated these outliers from all computations.

The higher judge win rate, however, does not fully offset the higher awards before juries – the expected award is higher before a jury than a judge.

The median award before a jury is significantly higher than the judge median. The higher jury mean is thus not simply an artifact of the occasional astronomical award before a jury. In both judge and jury cases the mean award is well above the median award suggesting a strongly right-skewed distribution. Figure 1 is a kernel density estimate of log awards in judge and jury trials.[10] Since the kernel density estimate for log awards is approximately normal the distribution of dollar awards is approximately log-normal. The density function for jury awards clearly has a larger mean and standard deviation than that for judge awards. Aside from the higher win rate in judge trials, the raw data appears to support the case for jury reform.

4. The Importance of Sample Selection

A. Sample Selection and Awards

The average judge award is 31% of the average jury award. How much of this difference can be explained by differences in the sample of cases appearing before judges and juries? To answer this question we examine potential sources of different judge/jury samples and ask how much of the difference in average awards could be explained by sample variation if the null hypothesis of no difference in judge and jury decisions processes is true. We examine three sources of potential sample variation: 1) case categories, 2) injuries, and 3) unobserved sample selection effects.

It's well known that awards in product liability and medical malpractice cases are much larger than in premises liability and auto injury cases.[11] Column one of Table 2, for example, shows a regression of log awards (in jury trials) on these four case categories. Evaluated at the mean dollar award, awards are approximately 316 and 342 thousand dollars larger than average in product

---

[10] We use a bi-weight kernel with smoothing parameter optimized on the assumption that the underlying data is normally distributed (see Silverman (1986) for more information on kernel estimation.) The use of other kernels and/or smoothing parameters does not materially affect the results.

[11] Tabarrok and Helland (1999) and Helland and Tabarrok (1999) show that awards are higher in product liability and medical malpractice cases than in other cases even after controlling for injuries.

liability and medical malpractice cases and 40 and 90 thousand dollars lower than average in premises liability and auto cases respectively.

Product liability cases and medical malpractice cases are comparatively rare, they make up 4.7% and 7.3% of our sample respectively. Premises liability and auto injury cases are much more common, these case categories account for 15.2% and 47.5% of our sample respectively (the remainder are miscellaneous torts). If product liability and medical malpractice cases are proportionately a larger part of the judge sample than the jury sample this could explain why the average jury award is so much larger than the average judge award. To test whether this source of variation is important we ask "If juries had decided the cases that actually went to judges how much lower would the average award have been?"[12] Using the coefficients from Table 2 we find that if juries had decided the sample of cases going to judges, the average award in that sample would have been 63% of the average jury award. Thus just over half of the difference in average judge and jury awards can be explained solely by differences in the sample of four case-categories going to judge and jury trial.[13]

We now add injuries, differences in tort law across the states, the number of defendants, and local poverty rates to the list of variables which may lead to different judge/jury samples. Our data set has descriptive information on the victim's injury. We code this information into 6 variables. Five of the variables, Major Injury, Minor Injury, Emotional Distress, Bad Faith, and Wrongful Termination are dummy variables. Major is set equal to one if the victim suffered a permanent injury such as loss of limb, brain damage, or blindness. Minor injuries are those that are (potentially) temporary, for example broken arms, broken legs, concussions or wounds. A pianist might consider a broken finger a

[12] If there were no error in our estimation equations we could equivalently have examined what the average award would have been if the jury sample had been decided by judges. We have far more observations on juries than judges, however, so the jury equation is better estimated. It follows that examining the judge sample as if decided by juries will give us a more accurate estimation of sample selection effects than the alternative procedure.

[13] Under the null hypothesis we initially expect judge and jury awards to be the same. The "unexplained" difference is thus 100%-31%=69%. If we can explain 100-x of this difference then the ratio of the unexplained to the explained is (100-x)/(100-31). Note that when x=31, 100% of the difference is explained and when x=100, as would have been the case if the sample of cases types going to judge and jury trial were the same, then none of the difference is explained. Letting x be 63 we have that 53% of the difference in averages is explained by differences in case types.

major injury if recovery was not 100 percent complete. We do not know all of the specifics of a case so we cannot control for potential miscodings of this type; nevertheless any coding errors will be uncorrelated with our other independent variables. Emotional Distress indicates cases in which the victim suffered emotional or psychological injuries. Bad Faith cases are those in which an insurance company is sued for refusing to pay a claim. Wrongful Termination is set equal to one when the plaintiff claims a wrongful termination of employment. To prevent perfect collinearity with the intercept term we suppress Wrongful Termination. We also include a sixth variable the expected years of life left in a case in which the victim died. We calculated the expected years of life left using the age at death and actuarial tables which control for age and sex. Together these variables control for the severity of the plaintiff's injury.

In addition to injuries, we include a number of legal variables that may affect liability. Under the Joint and Several rule any defendant can be liable for a plaintiff's entire injury regardless of the relative contribution of that defendant to the injury. Some states have modified the joint and several rule to limit the liability of some defendants (for example, a defendant responsible for less than 50% of the injury may not be assessed more than his relative contribution). Joint and Several is set equal to one if the state has modified the rule and if there is more than one defendant. Non-Economic Cap is set equal to one if state law puts a cap on damages due to pain and suffering or other non-economic losses. Punitive Cap and No Punitive control for states that cap punitive awards or prohibit them altogether.[14] Evidence standard is set equal to one if the state requires that "malicious intent" be *proven* for punitive damages to be recoverable. Under the collateral sources rule, payments to the plaintiff from a third party (i.e. insurance) are not deducted from damages due from the defendant. If Collateral Sources is set equal to one the collateral sources rule is weakened so that some offset is allowed.[15]

[14] No state prohibits punitive damages absolutely and completely. Punitive damages are prohibited in New Hampshire, for example, except where explicitly allowed for by statute.
[15] The American Tort Reform Association (ATRA) home page, http://www.aabiz.com/ATRA, contains information on tort reform legislation by state.

The variable Poverty measures the percentage of the population in poverty in the county in which the trial occurs. Helland and Tabarrok (1999) find that higher rates of poverty in the trial county are significantly associated with larger awards. The number of defendants is included as another control variable that may affect the size of awards. The descriptive statistics for the independent variables are given in Table 3.

Column 3 of Table 2 shows the impact of these variables on awards. As before, awards are higher than average in product liability and medical malpractice trials and lower than average in premises liability and auto trials. Also, as expected, awards are higher than average in cases involving deaths and major injuries and lower than average in cases involving minor injuries, emotional distress, or bad faith contracting. Limitations on joint and several awards tend to raise awards, a result the opposite of that expected, but the effect is small and not statistically significant at the 5% level. Caps on non-economic awards and punitive awards appear to reduce awards as intended, in both cases the effect is highly statistically significant. Evidence standards, however, do not appear to lower awards. Awards also tend to be larger in states where the collateral sources rule is weakened, perhaps because juries top up awards if they think insurance payments will later be deduced.[16] Trials with multiple defendants appear to generate larger awards than otherwise similar trials. Finally, the higher the poverty rate the county in which the trial occurs (the jury pool), the greater the award. (We look at marginal effects in more detail further below).

If trials before judges tend to involve fewer deaths or major injuries than trials before juries or if they tend to occur in richer counties or in states which cap pain and suffering awards then differences in the sample could explain differences in the average award. Taking into account all of these possible sources of variation we find that if the judge sample had been tried before a jury, the average award in the judge sample would have been 57% lower than the

[16] Some of these results may be subject to endogeneity problems - perhaps states with above average punitive damage awards are more likely to pass evidence standards than other states – so we cannot make definitive conclusions about the effect of various laws. "Reduced form estimates," however, are all we need in order to examine the role of sample effects in explaining differences in average judge and jury awards.

average jury award. Case type variables alone already suggested that the average award in the judge sample would be 63% lower than the jury average. Injuries, differences in tort law, the number of defendants, and local poverty rates do not, therefore, greatly increase our ability to explain the difference in judge and jury average awards.[17] Using case types and all of the additional variables we are able to explain approximately 62% of the difference in average awards.[18]

B. The Heckit Model

As noted above, one potential problem with estimating the effect of the independent variables on trial awards is that awards do not represent a random sample. To be awarded damages before a jury, for example, at least one of the defendants must have requested a jury trial, the case must not have been settled, and the plaintiff must have won at trial. Unless the sample selection is controlled for the parameter estimates may be biased because unobserved sources of variation in the forum, settlement, and win decisions could be correlated with unobserved sources of variation in the award equation. To account for this sample selection we estimate Probit models for the forum, settlement, and win decisions and then use Heckman's (1979) procedure to control for any correlation of errors between each of these decision equations and the award equation. For tractability we assume that the errors of the probit equations are uncorrelated with each other.

The award at trial is thus estimated by,

$$\log(award) = X_V \beta_V + \lambda_J \beta_{\lambda_J} + \lambda_W \beta_{\lambda_w} + \lambda_T \beta_{\lambda_T} + \varepsilon ,$$

where log(award) is the trial award, X_V are the variables described above, λ_i , *i=J, T, W* are the inverse Mill's ratios and β_{λ_i} *i=J, T, W* are the vector of coefficient estimates from the decision equations (see below), and ε is the error term.

[17] The case category variables explain a larger fraction of the judge/jury difference than the "injury" set of variables regardless of the order in which variables are added. Since the marginal explanatory power does vary, however, with the order in which variables are added the total explanatory power is the more important result.

[18] (100-57)/(100-31)=.62.

The coefficients are estimated by ordinary least squares. The least squares covariance matrix will, however, be biased because the disturbance term in the award equation is, by construction, heteroscedastic. The correct asymptotic covariance matrix is

$$Var[\beta_1, \beta_2, ...\beta_k] = \left[X_V{}^{*'} X_V{}^{*}\right]^{-1} \left[X_V{}^{*'}(\sigma I - \Pi) X_V{}^{*} + \sum_{i=1}^{3} Q_j\right] \left[X_V{}^{*'} X_V{}^{*}\right]^{-1},$$

where

$$X_V^* = \left[X_V \mid \lambda_J \mid \lambda_w \mid \lambda_T\right],$$

$$\Pi = \text{diag}(\pi_1 .. \pi_n),$$

$$\pi_i = \beta_{\lambda_J}^2 \delta_J + \beta_{\lambda_t}^2 \delta_T + \beta_{\lambda_W}^2 \delta_W,$$

$$\delta_j = \lambda_j(\lambda_j + \gamma_j X_j)$$

$$\Sigma_j = \text{asymptotic covariance matrix for estimates of } [\beta_\text{i}]$$

$$\Delta_\text{j} = \text{diag}(\delta_i ... \delta_n)$$

$$Q_j = \beta_{\lambda_i}^2 \left(X_V^{*'} \Delta_j X_j\right) \Sigma_j \left(X_j^{'} \Delta_j X_V^*\right)$$

$$j = J, T, \text{ and W},$$

$$\text{and } \sigma^2 = (1/n)e'e - (1/n)\Sigma_j \pi_i.$$

There is one remaining complication even after selection effects have been controlled for; plaintiffs and defendants decide whether or not to settle a dispute based in part upon expectations of the trial award. Decisions about whether to pursue a judge or jury trial are also likely to be based in part on expectations of future outcomes. To account for these considerations we use a two-stage procedure. In the first stage we run through each of the equations to create for each case a shadow trial award, a shadow probability of winning and a shadow probability of going to jury trial. We then re-estimate the model in the second stage using the shadow variables as estimates of plaintiff and defendant expectations. In effect, the first stage estimates use all of the independent variables in a given equation as instruments for the shadow variables (structural variables) in the second stage.[19] The estimation procedure is depicted in Figure 5.

[19] An estimation procedure similar to that described here was first used in Danzon and Lillard (1982).

C. The Selection Effects

Forum Selection

The first decision equation to estimate is the choice of judge or jury trial. We model the decision to choose a jury rather than a judge as a function of the default forum, the relative costs of each forum, expected differences in the judge and jury award and certain case characteristics.

In every state, both the defendant and the plaintiff have a right to a jury trial in just about any case involving money damages.[20] In many states, however, a bench trial is the default. In these states if the plaintiff or defendant want a jury trial it must be requested, often in writing within a short time period after filing or responding to a complaint. The default rule will determine the forum if both the plaintiff and defendant are indifferent or nearly so or if there are errors in requesting a forum. We define the dummy variable, Default,to be 1 if the default forum is a judge trial and 0 otherwise. We expect that Default will reduce the probability of a jury trial and thus have a negative sign.

The expected cost of each forum is proxied by the expected time from filing to decision before a judge and jury respectively. Cases scheduled to be decided by a judge typically reach court and are tried faster than cases before juries. We modeled the duration of time to decision using a sample of 36,896 cases tried before a jury and 5,496 cases tried before a judge. Included within our model are injury variables (death, major, minor etc.), case types (product liability, medical malpractice etc.), the number of defendants, and as a measure of the state court queue, the number of filings per judge by state. We found that a model of duration based on the logistic hazard function fit the data well.[21] Subtracting the expected time to a judge decision from the expected time to a jury decision creates the Time Difference variable. We expect that as the costs

---

[20] In most states the right to a jury trial is protected by the state constitution but in some it is based only on statute.

[21] The time until a jury trial is estimated by log(time to trial)=7.14+.13*death+.14*major+.038*minor-.1*emotional distress-.0058*premisis liability+.211*medical malpractice+.21*product liability+.05*number of defendants-.16*auto-.07*file. The time until a judge trial is estimated by log(time to trial)=5.11+.07*death-.24*major-.14*minor-.15*emotional distress-.2*premisis liability+.29*medical malpractice+.32*product liability+.17*number of defendants-.42*auto-.1*number of cases filed per judge in the state.

(time to decision) of a jury trial increase the probability of selecting a jury trial will diminish.[22]

If the expected award in a judge trial exceeds the expected award in a jury trial the defendant will request a jury trial. On the other hand, if the expected award in a judge trial is less than the expected award in a jury trial, the plaintiff will request a jury trial. To account for this symmetry we define DRequest to be equal to the expected judge award minus the expected jury award if the difference is positive and if the difference is negative we define PRequest to be the expected jury award minus the expected judge award. We thus expect both DRequest and PRequest to be positive.

The number of defendants is included because *any* defendant can request a jury trial. Thus, we might expect that the probability of a jury trial will increase with the number of defendants. Alternatively, cases with a large number of defendants may be especially complex and potentially time consuming, thus plaintiffs and defendants may agree to a judge trial to save court costs. Finally cases involving auto accidents are included as some states have restricted the right to a jury trial for traffic accidents.

The Decision to Proceed to Trial

We model the decision to settle using a model based on Posner (1973), Gould (1973), Priest and Klein (1984), and others.[23] The settlement model suggests that the settlement decision will be a function of the variance of plaintiff and defendant prediction errors, the expected award, risk, court and settlement costs and stake asymmetry. We proxy for each of these factors using the following variables. As noted above, we create for each case a shadow probability and a shadow award. We proxy for prediction error by the variance of the shadow probability, p(1-p). The shadow award proxies for the expected judgement amount, and we measure risk as the variance of the expected award,

[22] Surveys indicate that both plaintiffs and defendants prefer shorter time to trials (see for e.g. Miller 1992). It is sometimes argued that defendants want longer times to trial to avoid paying damages. We find this theory dubious as longer times to trial increase everyone's costs and plaintiff lawyers are sure to correct damage measures for inflation and interest. Since either the defendant or plaintiff can request a jury trial, however, this possibility does not change the expected sign or interpretation of our results.

[23] Cooter and Rubinfeld (1989) review the literature.

p(1-p)X^2 where X is the shadow award and p the shadow probability. Court costs are again proxied by the expected time to trial weighted by the probability of a judge or jury trial (see above).[24] We expect that the longer the expected time to trial the greater are expected court costs and thus the greater is the incentive to settle. We include the number of defendants as a proxy for settlement costs. If holdout and bargaining problems when defendants must allocate damages among themselves increase the difficulty of reaching a settlement, trials will become more likely the greater the number of defendants. Alternatively, the cost per defendant falls for any given compensatory claim and thus, if the defendants can agree on an allocation, settlement costs may fall with more defendants.

In product liability and medical malpractice cases the award to the plaintiff in the event the plaintiff wins may underestimate the cost to the defendant. A loss in one product liability case may generate further lawsuits and a loss in a medical malpractice case might mean further scrutiny of the defendant doctor from say a hospital board, it may even cause a loss of operating rights. We include product liability and medical malpractice dummies to account for these effects.

In addition to the factors suggested directly by the model, we include several other variables. Non-pecuniary elements may enter into a plaintiff's bargaining efforts if a death, particularly a child's death is involved in the dispute. Defendants may also be more likely to settle these types of cases if a trial would generate negative publicity. To control for possible non-pecuniary elements in bargaining we include two variables, a dummy variable labeled Child (set equal to one if a child died) and the expected number of years of life left in cases involving an adult death.

Kornhauser and Revesz (1994, see also Donohue 1994) show that the joint and several liability rule, under which any one defendant is liable for the damages of all, can change the probability of settlement. Whether the probability of settlement increase or decreases, however, depends on the correlation of the

[24] That is Pr(judge trial)*expected time until trial before a judge+Pr(jury trial)*expected time until trial before a jury.

defendants probabilities of winning at trial. As the correlation between the defendants probabilities of success at trial increases, the probability of settlement decreases. We include a variable called Joint and Several which is equal to 1 in states which have *weakened* the joint and several rule (for example, a defendant responsible for less than 50% of the injury may not be assessed more than his relative contribution). Joint and Several could be either positively or negatively signed.

Our sample of cases under-represents settlements and over-represents trials as compared to population proportions. To rebalance our sample the settlement equation is estimated using the weighted exogenous sample maximum likelihood estimator (WESML) due to Manski and Lerman (1977).[25] In our application, the WESML is essentially a weighted Probit model where the weights are equal to population proportions divided by sample proportions. A number of studies have found that approximately 10% of tort cases go to trial, we therefore use 10% as our estimate of the population proportion of trials to settlements.[26,27]

Plaintiff Win Equation

The probability that the plaintiff wins is estimated separately for judge and jury trials using a Probit model. To account for different decision standards we include dummy variables for the case types, medical malpractice, product liability, auto and premises liability. Life expectancy is included to account for any differences in the probability of winning a case in which a death was involved. Some states allow a "products defense" in product liability cases. A typical products defense might allow a defendant to claim that the product, say a knife, was "inherently dangerous" and thus injuries from ordinary use do not impose liability on the defendant. Products defense is a dummy variable set equal to one in product liability cases in states allowing a products defense.

[25] The WESML is applied in a problem similar to ours by Boyes, Hoffman, and Low (1989).

[26] In their survey of the literature Cooter and Rubinfeld (1989, 1070) note "A typical finding is that 10 disputes settle out of court for every one that is tried." Using one month of data from 33 courts, The National Center for State Courts (1994) finds that approximately 5% of tort cases go to trial. Using data on 2996 torts in Federal court Waldfogel (1995) finds an average trial rate of 18.7%. Danzon and Lillard (1983) find that 12% of medical malpractice cases go to trial.

[27] Our results are robust with respect to varying the weights in the WESML estimator.

Heckit Results

Since we have discussed the results from a similar settlement equation at length elsewhere (see Helland and Tabarrok (1999) and Tabarrok and Helland (1999)) we will focus on the choice of forum equation, the win equations, and the award equations. The descriptive statistics are given in Table 3.

Trial Mode

Juries are selected in 90% of the personal injury cases in our sample. Using this bench mark the impact of the independent variables on the choice of forum is non-trivial. Auto cases, for example, are 16% less likely to be tried before a jury than non-auto cases.[28] Adding a second defendant reduces the probability of a jury trial by 3%. This is consistent with the theory that both plaintiffs and defendants prefer judges in more complex cases. The coefficient on time difference is significant and negative. A one standard deviation change in the log ratio of jury trial time to judge trial time decreases the probability of a jury trial by 2.7%. Finally, both PRequest and DRequest are positive which indicates that the plaintiff chooses a jury trial when the expected jury award rises above the expected judge award and the defendant chooses a jury trial when the expected jury award falls below the expected judge award. Defendants appear to be slightly more sensitive to differences in the expected award across forum than are plaintiffs. If the expected jury award rises above the expected judge award by \$1000 the probability of a jury trial increases by 1.6% but if the expected jury award falls below the expected judge award by a \$1000, the probability of a trial increases by 2.7%.

Jury Win Equation

Results from the jury win equation are presented in column 3 of Table 4. Win rates are significantly lower than average in product liability, medical malpractice, and premises liability cases, lower in states and cases in which a products defense is applicable and higher than average in auto cases. Win rates do not appear to differ from average in death cases. The results for the judge

[28] For dummy variables (d) we calculate the exact difference between the probability of jury trial when d=0 and when d=1 when all other variables are at their means. For continuous variables we calculate marginal effects using the derivative at the mean of all variables.

equation are given in column 5. Results are similar in sign in judge run trials except death cases before judges significantly reduce the chances of winning. We discuss differences between judge and jury win rates at greater length in Section 5.

Award Equation

The award equation found in column 3 of Table 2 is similar, although not identical, to the OLS equation. Importantly, the inclusion of the Inverse Mills ratios, which control for unobserved correlation of the error terms across the selection and award equations, significantly increases the fraction of the difference in judge and jury means which can be explained by differences in the sample. If the sample of cases actually decided by a judge had instead been decided by a jury, the average award in that sample would have been 48.8% lower than the average award in the jury sample. Thus, 75% of the difference in the average judge and jury award can be explained by differences in the sample of cases appearing before judges and juries.

5. Comparing the Decision Process of Judges and Juries-Awards

A. Awards

Sample selection effects can explain 75% of the difference in the average judge and jury award. If we accept this figure as an upper bound of what can be explained by differences in the sample, it follows that the remaining 25% of the difference must be due to differences in how judges and juries make decisions.[29] In Table 5 we repeat our final model for jury awards and present for comparison the same model estimated on judge awards. In Column 3 we give F tests of the difference in coefficient values across the two equations. The F tests indicate that there are systematic differences between judges and juries in the impact that various factors have on awards. Juries, for example, are more sympathetic to injured plaintiffs than judges. Holding the sample of cases constant, juries give larger awards than judges for every injury category (with the exception of

Expected Years of Life Left for which no significant judge/jury differences are found). Our finding is thus consistent with the anecdotal evidence that juries more than judges tend to view injured plaintiffs sympathetically.

Caps on damages for pain and suffering (Non-Economic Caps) cause a greater decline in awards when the case is decided by a jury than when the case is decided by a judge. The greater effectiveness of caps on juries is also consistent with the evidence on injuries discussed above. If juries grant larger awards than judges for pain and suffering when they are allowed to do so, it follows that juries rather than judges will be constrained by caps. Since judges grant fewer large pain and suffering awards to begin with, we find that caps on judges are "less effective" (because less necessary). The collateral resources rule also has an different impact on jury as judges; it increases the award in jury trials but has no effect on trials before a judge. Again this effect is consistent with a story in which juries neutralize a weakening of the collateral sources rule by topping awards up while judges, perhaps out of greater respect for the law, do not try to offset the law's intended effect.

Two of the selection terms differ across judges and juries. Not surprisingly the coefficient on the inverse Mill's ratio generated by the trial forum equation is different, which suggests that the sample of cases going to juries and judges is different. More interesting is the fact that inverse Mill's ratio for settlement has a different effect for jury trials than for judge trials. The data suggest, therefore, that settlement behavior is different depending on whether the case is scheduled to be decided by a judge or a jury. Unfortunately, we are not able to investigate this effect in detail since we do not have data on whether settled cases were scheduled to be decided by a judge or jury.[30]

The most robust difference between judges and juries arises in the impact of local poverty. A one-standard deviation increase in the local poverty rate raises jury awards by $21,920 but causes a slight reduction in judge awards of

---

[29] In actuality, 75% should be thought of as the lower bound of what can be explained by differences in samples since it is possible that the inclusion of more variables would allow more of the difference to be explained.

[30] Put differently we are forced by data limitations to assume that cases are settled before the trial forum is decided upon.

$3500 (evaluated ad the means). Poverty was included in the awards regression under the hypothesis that less affluent juries might be more responsive to income redistribution via the courts. Under this reasoning we would expect Poverty to affect jury awards but not judge awards. Although statistically significant, the negative effect of poverty on judge awards is relatively small and thus our results are consistent with the theory that less affluent juries are more sympathetic to plaintiffs.

B. Win Rates – Sample Selection or Differences in Decision Processes?

We turn now to a more complete discussion of win rates across judges and juries. The average win rate in a jury case is 56.67% and in a judge case is 67.73%. Using the coefficients for the jury win equation in column 4 of Table 4, we can estimate what the win rate would have been if the sample of cases going to judges had instead been decided by juries - 60.04%. Sample selection can thus explain about 30% of the difference in judge and jury win rates (60.04-56.67)/(67.73-56.67)=.3.

Since most of the difference in win rates appears not to be caused by sample selection, there may be significant differences in win decision processes across judges and juries. Using a likelihood ratio (LR) test, given in column 6, we can compare the coefficients from the jury and judge win equations given in columns 4 and 5 of Table 4. The test rejects at the 10% level or greater the null hypothesis of identical judge and jury win coefficients for every variable except products defense and the constant.

Marginal effects from the jury and judge win equations are presented in Table 6. Significantly almost all of the marginal effects run in the *opposite* direction to that of the average win rate. The average win rate is higher for judges than for juries but this is almost entirely due to the higher win rate of auto cases before judges than before juries. Consistent with the anecdotal evidence, plaintiffs with product liability and medical malpractice cases are significantly more likely to win before juries than before judges (although these cases are harder to win than the average in both forums).

6. Conclusions

Our results provide some comfort for those seeking to limit awards by constraining the jury. Juries do grant systematically larger awards to injured plaintiffs than judges. As a result caps on pain and suffering damages tend to constrain juries but not judges (who would not have broken the cap in any case). Furthermore, juries seem to be more receptive to "redistribute the wealth" arguments than judges. Juries drawn from pools with high poverty rates grant systematically larger awards than judges and larger awards than juries drawn from more affluent regions. Win rates in product liability and medical malpractice cases are also higher before juries than judges.

The differences in judge and jury decision making we have discovered, however, explain only a small fraction of the huge differences in average award rates across judges and juries. At least 75% of the difference in average awards is due not to differences in decision making but to differences in the sample of cases appearing before judges and juries. The difference in average awards across judge and juries thus provides a very misleading estimate of what would happen if the US followed the rest of the world and shifted decision making from the judge to the jury. Although a shift from the jury to the judge would move awards in the directions expected by tort reformers the shifts would be relatively small. It is not clear whether the benefits of such a shift exceed the costs.

References

Aczel, Amir. 1996. *Complete Business Statistics 3rd ed.* Homewood, IL: Richard Irwin.

Adler, Stephen J. 1994. *The Jury: Trial and Error in the American Courtroom*. Random House.

Boyes, W. J., D. L. Hoffman, and S. A. Low. 1989. "An Econometric Analysis of the Bank Credit Scoring Problem." *Journal of Econometrics* 40:3-14.

Clermont, Kevin M. and Theodore Eisenberg. 1992. "Trial by Jury of Judge: Transcending Empiricism." *Cornell Law Review*. 77:1124-1177.

Clermont, Kevin M. and Theodore Eisenberg. 1999. "Appeal from Jury or Judge Trial: Defendants' Advantage. Presented at the American Law and Economics Association annual meeting 1999.

Cooter, R. D., and D. L. Rubinfeld. 1989. "Economic Analysis of Legal Disputes and Their Resolution." *Journal of Economic Literature* XXVII (Sept):1067-97.

Danzon, P. M., and L. A. Lillard. 1982. *The resolution of medical malpractice claims: Modelling the bargaining process*. Institute for Civil Justice (Rand Corporation), R-2792-ICJ.

---. 1983. "Settlement Out of Court: The Disposition of Medical Malpractice Claims." *Journal of Legal Studies* 12:345-77.

Diamond, S. S. 1983. Order in the court: Consistency in Criminal Court Decisions. In *The Master Lecture Series: Psychology and the Law*, ed. C. J. Scheirer and B. L. Hammonds, 123-46. Vol. 2. Washington: American Psychological Association.

Donohue III, J. J. 1994. The Effect of Joint and Several Liability On Settlement: Comment On Kornhauser and Revesz. *Journal of Legal Studies* XXIII (1 (pt.2)):517-58.

Gould, J. P. 1973. "The Economics of Legal Conflicts." *Journal of Legal Studies* 2:279-300.

Greene, W. H. 1997. *Econometric Analysis.* 3rd ed. New York: Prentice Hall.

Hans, V.P. and N. Vidmar. 1986. *Judging the Jury.* New York: Plenum Press.

Haydock, R. and J. Sonsteng. 1991. *Trial: Theories, Tactics, Techniques (American Casebook Series)*. St. Paul, Minn. : West.

Heckman, J. 1979. "Sample Selection Bias As a Specification Error." *Econometrica* 47:153-61.

Helland, Eric and Alex Tabarrok. 1999 "The Impact of Punitive Damages on Settlement Rates: Evidence from Personal Injury Cases." Working Paper.

Izard, R. A. 1998. *Lawyers and Lawsuits: A Guide to Litigation.* New York: MacMillan Spectrum.

Kalven, Harry Jr, and Hans Zeisel. *The American Jury.* Boston: Little, Brown, 1966.

Kornhauser, L. A., and R. L. Revesz. 1994. "Multidefendant Settlements: The Impact of Joint and Several Liability." *Journal of Legal Studies* XXIII (1 Pt.1):41-76.

Lempert, R. 1993. Civil Juries and Complex Cases. In *Verdict: Assessing the Civil Justice System*, ed. R. E. Litan, 181-247. Washington, D.C.: The Brookings Institution.

Litan, R.E. 1993. *Verdict: Assessing the Civil Jury System*, Washington, D.C.: The Brookings Institution.

Manski, C. F., and S. R. Lerman. 1977. "The Estimation of Choice Probabilities from Choice-Based Samples." *Econometrica* 45:1977-88.

Miller, Neal. "An empirical study of forum choices in removal cases under diversity and Federal question jurisdiction." *American University Law Review* 41, no. 369 (1992): 369-452.

Posner, R. A. 1973. An Economic Approach to Legal Procedure and Judicial Administration. *Journal of Legal Studies* 2:399-459.

Priest, G. L., and B. Klein. 1984. "The Selection of Disputes for Litigation." *Journal of Legal Studies* 13 (1):1-55.

Schuck, P. H. 1993. Mapping the debate on jury reform. In *Verdict: Assessing the Civil Jury System*, ed. R. E. Litan, 306-40. Washington, D.C.: The Brookings Institution.

Silverman, B. W. 1986. *Density Estimation for Statistics and Data Analysis.* London: Chapman and Hall.

Tabarrok, A., and E. Helland. 1999. "Court Politics: The Political Economy of Tort Awards." Forthcoming *Journal of Law and Economics*.

Vidmar, Neil 1997. *Medical Malpractice and the American Jury*. Ann Arbor, University of Michigan Press.

Waldfogel, J. 1995. "The Selection Hypothesis and the Relationship Between Trial and Plaintiff Victory." *Journal of Political Economy* 103 (2):229-60.

Table 1: Judge/Jury differences (all trials)

	Juries	Judges	Two Sided P-Value on Difference[c]
Win Rate	56.67%	67.73%	0.000
Mean Award[a]	$696,149	$218,629	0.000
Median Award[a]	$74,879	$17,279	0.000
Standard Deviation of Log Awards (Dollar Equivalent)[a,b]	2.188 ($603,156)	1.852 ($121,885)	0.000
Number of Trials	53,335	5,964	

Notes

a) Conditional on a plaintiff win.

b) Since dollar awards are not normally distributed, the standard deviation of dollar awards is not informative. The standard deviation of log awards has meaning, however, because log awards are well approximated by a normal distribution. To convert a standard deviation in logs back to a dollar figure we evaluate at the mean of the log awards.

c) The p-values for the difference in win rates, means, and standard deviations are two-sided and were computed using standard tests available in any text (e.g. Aczel, 1996). The difference in medians test was computed using a monte-carlo method with 5000 replications.

Source: JVR

Table 2: Award Regressions

	OLS Jury	OLS Jury	3-level Heckit Jury
Constant	11.747*** (.023)	11.78*** (.069)	11.05*** (1.14)
Number of Defendants		.435*** (.0516)	.657*** (.0597)
Expected Years of Life Left		.294*** (.203)	.365*** (.0256)
Major Injury		.685*** (.071)	.901*** (.078)
Minor Injury		-.955*** (.065)	-.89*** (.0707)
Emotional Distress		-1.16*** (.0769)	-1.08*** (.083)
Bad Faith		-.148 (.113)	-.013 (.122)
Premises Liability	-.386*** (.038)	-.174*** (.037)	-.785*** (.286)
Medical Malpractice	1.311*** (.049)	.731*** (.469)	-.744 (.672)
Product Liability	1.255*** (.0579)	.678*** (.056)	-.071 (.323)
Auto	-1.27*** (.0285)	-.977*** (.0298)	-.417 (.19)
Poverty		2.25*** (.198)	2.99*** (.232)
Joint and Several Liability		.093* (.049)	-.044 (.568)
Non-Economic Cap		-.539*** (.028)	-.515*** (.0312)
Collateral Sources		.32*** (.219)	.267*** (.024)
No Punitive		-.082 (.129)	-.125 (.143)
Punitive Cap		-.106 (.022)	-.145*** (.025)
Evidence Standard		.19*** (.024)	.131*** (.0268)
IMR Trial Mode			-.983** (.171)
IMR Settle			-.803*** (.0613)
IMR Win			3.35*** (1.73)
Number of Cases	30226	30226	30226

* Significant at the greater than .1 level
** Significant at the greater than .05 level
*** Significant at the greater than .01 level

Table 3: Descriptive Statistics

Variable	Mean	Std. Dev.
Jury trial awards		
Log(Jury Award)	11.24	2.187
Number of Defendants	.2336	.4055
Expected Years of Life Left	.2433	.9215
Major Injury	.1132	.3169
Minor Injury	.7268	.4456
Emotional Distress	.05102	.22
Bad Faith	.0126	.1117
Premises Liability	.152	.3591
Medical Malpractice	.0729	.26
Product Liability	.04744	.2126
Auto	.4752	.4994
Poverty	.1281	.05512
Joint and Several Liability	.2366	.42499
Non-Economic Cap	.1908	.3929
Collateral Sources	.4983	.5
No Punitive	.0711	.08404
Punitive Cap	.52	.4996
Evidence Standard	.322	.4674
Judge Award		
Log(Judge Award)	10.0278	1.8534
Number of Defendants	.245	.41094
Expected Years of Life Left	.156	.76994
Major Injury	.121	.3262
Minor Injury	.766	.4237
Emotional Distress	.0493	.2164
Bad Faith	.0866	.09268
Premises Liability	.0933	.2909
Medical Malpractice	.0151	.122
Product Liability	.0158	.1249
Auto	.649	.4773
Poverty	.138	.05826
Joint and Several Liability	.203	.40226
Non-Economic Cap	.2305	.42117
Collateral Sources	.2728	.4454
No Punitive	.0047	.0684
Punitive Cap	.606	.4888
Evidence Standard	.262	.4396

Table 3: Descriptive Statistics (con't)

Variable	Mean	Std. Dev.
Trial Mode		
Trial Mode (Jury=1)	.899	.3008
Auto	.4197	.4935
Number of Defendants	.2332	.4092
Log(time to jury trial/time to judge trial)	1.009	.2321
Default (1=judge)	.229	.4204
Prequest=log(expected award jury)-log(expected award judge) if >0	.4587	.6617
Drequest=log(expected award judge)-log(expected award jury) if >0	.6599	.7916
Trial Equation		
Does the case go to trial (yes=1)	.6837	.465
Product Liability	.0474	.2124
Medical Malpractice	.0955	.2938
Expected Time to Trial	6.663	.157
Number of Defendants	.239	.4153
Child	.434	.4956
Expected Years of Life Left	.2877	1.003
Joint and Several Liability	.2246	.4173
Jury Win Equation		
Plaintiff win at a jury trial(yes=1)	.5668	.4955
Product Liability	.0568	.2315
Auto	.4069	.4913
Medical Malpractice	.116	.3203
Premises liability	.1776	.3822
Expected Years of Life Left	.2705	.9663
Products Defense	.0287	.1671
Judge Win Equation		
Plaintiff win at a judge trial(yes=1)	.6773	.4675
Product Liability	.028	.165
Auto	.533	.4989
Medical Malpractice	.0426	.202
Premises liability	.1407	.3477
Expected Years of Life Left	.2171	.9066
Products Defense	.1006	.0998

Table 4: Forum Choice, Trial and Win Sequential Probit Results

Variable	Form Choice Probit	Trial Probit	Jury Win Probit	Judge Win Probit	χ^2
Constant	1.873***	-6.034***	.227	.283***	2.63
	(.051)	(.704)	(.011)	(.033)	
Expected Years of Life Left if defendant died		-.035***	-.0025	-.083***	18.913***
		(.008)	(.006)	(.019)	
Product Liability		.336***	-.231***	-.501**	4.211*
		(.0415)	(.034)	(.128)	
Medical Malpractice		1.314***	-.595***	-.938***	13.336***
		(.1065)	(.02)	(.093)	
Auto	-.991***		.19***	.66***	113.657***
	(.044)		(.014)	(.042)	
Premise liability			-.265***	-.398***	5.625**
			(.017)	(.054)	
Joint and Several Liability		.15***			
		(.026)			
Products Defense			-.125***	-.045	.141
			(.046)	(.207)	
Number of Defendants	-.245***	-.193***			
	(.0181)	(.0269)			
Child		-.554***			
		(.0136)			
Log(time to jury trial/time to judge trial)	-.5725***				
	(.0525)				
Default	-.2802***				
	(.0164)				
Prequest	.180***				
	(.0154)				
Drequest	.7556***				
	(.025)				
Expected Time to Trial[a]		-.609***			
		(.105)			
Expected Award		.205***			
		(.023)			
Variance of Expected Award (Risk)		34.39***			
		(2.48)			
Var P		-.0233***			
		(.003)			
Number of Cases	59299	86733	53335	5964	

* Significant at the greater than .1 level
** Significant at the greater than .05 level
*** Significant at the greater than .01 level
[a] The weighted average of expected time until a jury trial and expected time until trial before a judge.

Table 5: Award Equation Results for OLS and Heckit estimation

	3-level Heckit Jury	3-level Heckit Judge	F-test
Constant	11.05***	15.91***	2.099
	(1.14)	(3.15)	
Number of Defendants	.657***	.665***	.002
	(.0597)	(.161)	
Expected Years of Life Left	.365***	.362	.0001
	(.0256)	(.271)	
Major Injury	.901***	-.547*	17.19***
	(.078)	(.34)	
Minor Injury	-.89***	-1.6***	4.719**
	(.0707)	(.316)	
Emotional Distress	-1.08***	-1.9***	5.214**
	(.083)	(.3477)	
Bad Faith	-.013	-.961***	3.26*
	(.122)	(.51)	
Premises Liability	-.785***	-.14	.491
	(.286)	(1.29)	
Medical Malpractice	-.744	2.15	.721
	(.672)	(3.34)	
Product Liability	-.071	1.17	.482
	(.323)	(1.758)	
Auto	-.417	-.734	.0035
	(.19)	(1.68)	
Poverty	2.99***	-2.83***	42.727***
	(.232)	(.86)	
Joint and Several Liability	-.044	-.0102	.101
	(.568)	(.16)	
Non-Economic Cap	-.515***	-.221**	6.438**
	(.0312)	(.111)	
Collateral Sources	.267***	.026	4.8**
	(.024)	(.116)	
No Punitive	-.125	.256	.413
	(.143)	(.577)	
Punitive Cap	-.145***	-.046	1.29
	(.025)	(.0838)	
Evidence Standard	.131***	.176***	.147
	(.0268)	(.114)	
IMR Trial Mode	-.983**	.434*	21.249***
	(.171)	(.255)	
IMR Settle	-.803***	-1.697***	14.944***
	(.0613)	(.222)	
IMR Win	3.35***	-1.99	.932
	(1.73)	(5.25)	
Number of Cases	30226	4040	34266

* Significant at the greater than .1 level
** Significant at the greater than .05 level
*** Significant at the greater than .01 level
Correct Standard Errors in parentheses--see text.

Table 6: Marginal Effects, Judge and Jury Win Equations

	Jury	Judge
Expected Years of Life Left	-.09%	-3.4%
Product Liability	-9.1%	-19.7%
Medical Malpractice	-23.3%	-35.5%
Auto	7.4%	21.7%
Premises Liability	-10.5%	-15.6%
Product Defense	-4.9%	-1.7%

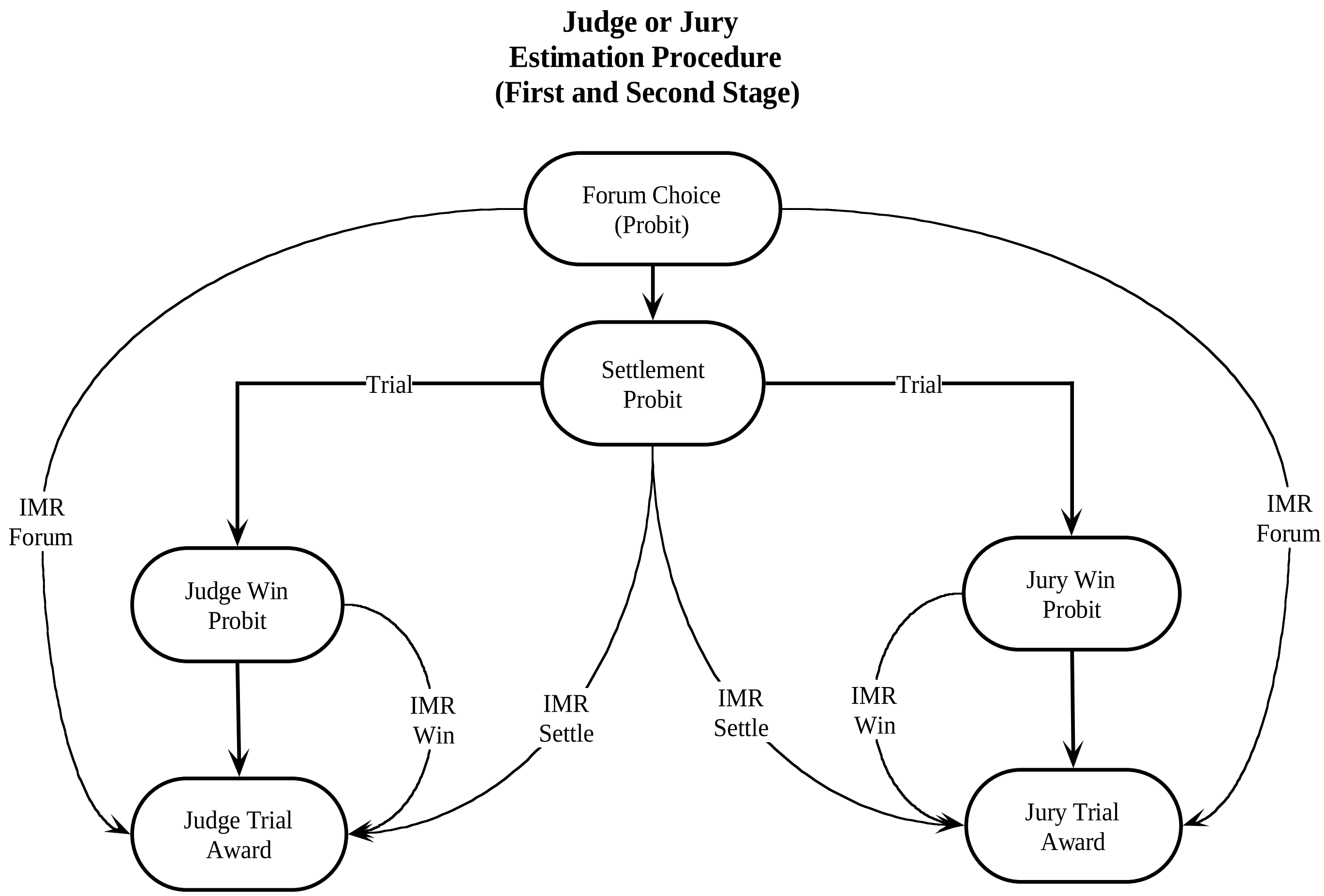

Figure 5: Estimation Procedure