

# Why Litigants Disagree: A Comment on George Priest's "Measuring Legal Change"

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Mark Twain said, "Everyone talks about the weather and no one does anything about it." Everyone talks about quantitative empirical research on the common law and George Priest is one of the few scholars who does anything about it. In this paper he combines his past interest in the determinants of litigation and his data on civil trials in Cook County taken from *Jury Verdicts*. Priest tests the proposition that litigants tend to disagree because judges create uncertainty by changing legal doctrine. I will explain Priest's results and improve upon them through regression analysis of his data.

## 1. HYPOTHESIS

What is the relationship between legal doctrine and civil disputes? One hypothesis is that changes in doctrine create uncertainty and uncertainty causes disagreements. This is the hypothesis that Priest tests statistically. To clarify what he did, I will restate his hypothesis with the help of some notation. Both parties to a legal dispute have a subjective probability of plaintiff victory, denoted  $P$ , and a subjective probability of the resulting damage judgment, denoted  $J$ . The expected judgment is the product  $PJ$ .

Presented at Symposium on the Law and Economics of Procedure, Center for Law and Economic Studies, Columbia Law School, February 6, 1987.

*Journal of Law, Economics, and Organization* vol. 3, no. 2 Fall 1987  
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Settlement offers will be closely related to the expected judgment. Thus the final offer made by party  $i$ , denoted  $O_i$ , is a function of the judgment she expects,  $PJ_i$ . It is also a function of many other variables that I will not discuss, although I denote them by  $X_i$ . In sum,  $i$ 's final offer function can be written:

$$O_i = F^i(PJ_i, X_i).$$

The disagreement is measured by the difference in final offers between the plaintiff  $p$  and the defendant  $d$ :

$$O_p - O_d = F^p(P_p J_p, X_p) - F^d(P_d J_d, X_d).$$

## 2. TEST OF HYPOTHESIS

To test the hypothesis formulated by the preceding function, an econometrician would be inclined to estimate a linear equation. Let the variable  $y$  denote a measure of the pace of legal change. Rapid legal change, by hypothesis, causes expected judgments  $P_p J_p$  and  $P_d J_d$  to diverge. Priest's hypothesis, in linear form, can be written:

$$O_p - O_d = b_0 + b_1 y + b_2 X + \text{random error}.$$

The coefficients  $b_0$ ,  $b_1$ , and  $b_2$  are to be estimated from this data concerning  $O_p - O_d$ ,  $y$ , and  $X$ . Priest did not, however, estimate this equation. Instead, he relied upon a simpler method: he read all the cases decided in Illinois pertaining to two sources of injury, formed a subjective opinion of the pace of change in doctrine, and then examined annual means and standard deviations for  $O_p - O_d$  to see whether they increased in years of rapid doctrinal change. He concluded that change in legal doctrine causes disagreement.

To see whether Priest "eyeballed" the data correctly, I ran some regressions. First I assigned scale values to Priest's verbal description of doctrinal change for the two sources of injury, as indicated in tables 1 and 2. The scale ranges between 3, indicating a large change in doctrine, and 0, indicating no change in doctrine. The assignment of numerical values was based solely on Priest's description—I simply converted descriptive phrases into an opinion scale. The scale values obtained in this way, which are shown in tables 1 and 2, represent the annual values of the variable  $y$  in the preceding equation.

Priest's data on disagreement includes cases in which the severity of the injury is very different. In order to combine, say, a broken neck and a broken toe in the same data, the disagreement should be expressed as a percent of the stakes. Priest thus divides the difference in final offers by the actual judgment:

Table 1. Scaling Priest's Judgments Concerning Legal Change for Injury on Property Cases

Year	Scale Value	Description in Priest's Article
1959	0	
1960	0	
1961	0	
1962	0	
1963	0	
1964	0	
1965	3	MOLDENHAUER: "A substantial change in the prevailing legal standard."
1966	0	
1967	0	
1968	0	
1969	1	ROSEMAN; SHOEN; THORSON: "Neither of the other changes (1969-70 and 1972) appear to be substantial."
1970	1	
1972	1	JACK SPRINGS: "It is perhaps surprising that the Jack Springs decision . . . did not more substantially affect settlement."
1973	0	
1974	0	
1975	3	MANGAN and LOOGER: "Seems very likely to have been major changes in the law."
1976	2	DAPKUNAS, MAGNOTTI: "An unsuspected retrenchment from expanded liability . . . resulting confusion in the direction of the law."
1977	0	
1978	0	
1979	0	

$$\frac{O_p - O_d}{J}$$

This variable he calls the settlement ratio, but I will call it the normalized disagreement.

The annual mean or standard deviation of the normalized disagreement is the dependent variable in my regression equations. The independent variable is the pace of doctrinal change as measured by the annual value of  $y$  as indicated in tables 1 and 2. There are, in addition to these two variables, many omitted variables indicated in the equation by  $X$ . These variables must be omitted because there is no data available. The hope is that they wash out statistically.

There is, however, one other variable that Priest did not want to omit because he feared its effects would not wash out. That variable is an index of the extent of the injury. Priest assumed that more extensive injuries would cause more disagreement. He constructed an index of the serious-

Table 2. Scaling Priest's Judgments Concerning Legal Change for Workplace Injury Cases

Year	Scale value	Description in Priest's article
1959	3	KENNERLY: "Substantially increases liability of non-supervisory parties to construction projects without clarifying which parties in any type of case will be ultimately found liable. . . . First major change [in the period]."
1960	2	MORONI, GANNON: "A (modest) retreat from Kennerly . . . introducing only subtle changes in the interpretation of the Scaffold Act . . . no clear break from Kennerly."
1961	0	
1962	0	
1963	0	
1964	3	ROVEKAMP: "A major reformulation of the indemnification standard; . . . next major change [after Kennerly] . . . introduced a completely new standard for indemnification actions."
1965	0	
1966	0	
1967	1	MILLER: "Endorses Rovekamp; . . . cited subsequently only for the minor point."
1968	2	LOUIS: "Expands the scope of the term scaffold, initiating what was called a liberal trend. . . . Began a trend of liberal interpretation of the Act."
1969	0	
1970	0	
1971	1	LINDERB, GADD, Indemnification Contract Statute: "Courts seem settled on the Rovekamp standard."
1972	0	
1973	0	
1974	0	
1975	1	FARLEY, TENEBBAUM: "Restricts the scope of the Scaffold Act."
1976	0	
1977	0	
1978	1	SKINNER: "Adopts a rule allowing actions for contribution between joint tortfeasors, although it is unlikely to affect the cases in the sample. . . . I did not expect to see a response to the 1978 Skinner decision."
1979	0	

ness of the accidents litigated during each year. I have included his injury index as an independent variable in the regression. In sum, the mean and standard deviation of the normalized disagreement for two classes of injury litigation in Cook County, Illinois, for the years 1959–79 were regressed on an index of the pace of doctrinal change and an index of the seriousness of accidents. The results are given in table 3.

To be sure that the regressions are interpreted correctly, substitute some values into the equation obtained by the first regression analysis. For

Table 3. Regression Analysis

## Priest's Injury on Property Cases (Priest's table 2)

*First regression*

Dependent variable: mean settlement ratio

Independent variables:

	<u>Value</u>	<u>T-statistic</u>
Intercept	5.3	3.7
Doctrinal change	0.9	8.3
Injury Index	-1.5	-3.0
$R^2 = .87$		

*Second regression*

Dependent variable: standard deviation of settlement ratio

Independent variables:

	<u>Value</u>	<u>T-statistic</u>
Intercept	10.7	2.0
Doctrinal change	2.3	4.8
Injury index	-3.4	-1.8
$R^2 = .58$		

## Workplace Injury Cases (Priest's table 3)

*Third regression*

Dependent variable: mean settlement ratio

Independent variables:

	<u>Value</u>	<u>T-statistic</u>
Intercept	.1	-0.6
Doctrinal change	.1	1.3
Injury index	.3	6.6
$R^2 = .71$		

*Fourth regression*

Dependent variable: standard deviation of settlement ratio

Independent variables:

	<u>Value</u>	<u>T-statistic</u>
Intercept	-0.1	-0.1
Doctrinal change	0.3	2.7
Injury index	0.3	.8
$R^2 = .36$		

NOTES: OLS regressions were computed with the following functional forms:

Notation:  $m$  = mean settlement ratio in given year;  $s$  = standard deviation of settlement ratio in given year;  $y$  = index of annual doctrinal change;  $x$  = annual injury index;  $n$  = number of cases in given year.

First and third regressions:

$$nm = b_0n + b_1nc + b_2ni + \text{error term.}$$

Second and fourth regressions:

$$s = b_0 + b_1c + b_2i + \text{error term.}$$

example, set the injury index equal to 3 and set doctrinal change equal to 0; the result is a disagreement value of .8. Thus the predicted equilibrium level of disagreement is .8 (a large number!) when doctrine is unchanging and the injury index equals 3.

The regression results are a striking confirmation of Priest's hypothesis. The coefficients on doctrinal change all have the right sign and they are

statistically significant as judged by the T-statistic in 3 out of 4 regressions. The amount of variance ( $R^2$ ) explained by the regressions is very high. The hypothesis that doctrinal change causes disagreement between litigants for cases decided in the same year as the doctrinal change is strongly confirmed.

There are, however, some worries about the regressions and their interpretation. First, why does the coefficient on the injury index have the wrong sign in 2 out of 4 regressions? Perhaps the answer is that, having normalized the disagreement by converting it to a percentage of the stakes, there is no reason to expect the injury index to have any further effect.<sup>1</sup> Alternatively, perhaps the injury index is picking up the effects of omitted variables.

Second, is the measure of the pace of doctrinal change reliable and valid? It was constructed by my reflections upon Priest's prose, and both of us understood the hypothesis being tested. The possibility of unconscious bias could be eliminated by constructing the scale from the considered judgment of several lawyers who read the cases without being informed about the hypothesis.

There are some minor technical points to clear up. Since I did not have Priest's case-by-case data, my regressions were based upon his report of annual means for 21 years. Averaging within years eliminates variance, thus inflating  $R^2$ . In addition, the reduction in the number of observations from more than 200 to 21 deflates statistical significance. Recomputing using the case-by-case data is desirable. Another detail is that since Priest normalized disagreement by dividing the difference in final offers by the actual judgment, the normalized disagreement goes to infinity when the actual judgment is zero. This fact compelled Priest to discard all cases won by defendants. This waste of data, with its possible bias, could be avoided by using a different normalization. Finally, it is not clear whether ordinary least squares is the best regression technique.<sup>2</sup>

### 3. REJECTED HYPOTHESES

I ran some variations in the regressions to test some related hypotheses. One hypothesis concerns whether disagreement responds to legal change with a lead of a year or more, with a lag of a year or more, or by depreciating each year. I tested all these hypotheses and rejected them. Apparently the effect of doctrinal change on disagreement in Priest's data occurs within the same year as the change.

1. There is probably simultaneity bias in the regression since the magnitude of the stakes appears on the left side of the equation when normalizing and also on the right side as an explanatory variable.

2. Priest proposed that under certain circumstances, the dependent variable is constrained to the interval (0,1). Under these conditions, the error term is not normally distributed and OLS is inappropriate.

In another paper Priest (1984) hypothesized that uncertainty will increase the frequency of litigation. To test this hypothesis, I estimated the same model but used the numbers of cases per year, rather than the disagreement, as the dependent variable. The results did not approach statistical significance. Perhaps the elimination of cases won by defendants and the absence of an index of frequency of injury swamps the effects of doctrinal change. I also tested whether more frequent litigation precedes doctrinal change and found no significant results.

#### 4. CONCLUSION

There are at least two hypotheses about the relationship between changes in doctrine and disagreements between litigants. Priest's hypothesis is that changes in doctrine create uncertainties that cause disagreements. According to this hypothesis, doctrinal change causes disagreements. The second hypothesis, which stands Priest's hypothesis on its head, is that disagreements reveal ambiguities in received doctrine that are clarified by new rules. According to this hypothesis, disagreements cause doctrinal changes. The two rival hypotheses disagree about whether legal change creates uncertainty or resolves it, and about whether doctrinal change causes disagreements or disagreements cause doctrinal change.

At issue in this dispute is whether the evolution of law is idea-driven or market-driven. According to Priest's hypothesis, litigants' behavior reacts to changes in doctrine, so law is idea-driven. In contrast, litigation can be viewed as a market in which inefficient doctrines, such as those that allocate legal entitlements ambiguously, are litigated intensively. Intensive litigation of inefficient doctrines makes the law evolve toward efficiency, whether or not courts choose efficiency as a conscious goal, according to a body of literature to which Priest has contributed (1977). According to the second hypothesis, doctrine reacts to changes in litigation, and litigation is a market phenomenon, so law is market-driven.

An implication of Priest's hypothesis is that changes in rules precede more extensive disagreements, whereas an implication of the rival hypothesis is that more extensive disagreements precede changes in rules. Regression analysis of Priest's data confirms that disagreement increases in the same year as a change in doctrine and disconfirms that disagreement increases in the year preceding or the year following a change in doctrine. Thus the data is silent on whether changes in doctrine precede disagreements, or vice versa. There is no strictly statistical basis for choosing between these alternative hypotheses, but when the regressions are combined with Priest's interpretation of the cases, the overall conclusion must favor Priest's hypothesis.

The advancement of a science depends upon the formation and testing of hypotheses. In the early stages of economics, tests are difficult because

the quality of the data is poor. To illustrate, it took years of interaction between academics and government officials to produce macroeconomic data that was useful for testing macroeconomic theory. The economic analysis of law is at an early stage where officials do not know what data to collect. In this paper, Priest provides tantalizing evidence concerning an important hypothesis. The test is not a good one, merely the best that has been done. We ought to follow his lead and procure the data for a more decisive test.

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