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Managerial Opportunism during Corporate Litigation

BRUCE HASLEM*

ABSTRACT

Using a large sample of litigation events involving publicly listed defendants, we document a surprising fact. The resolution of litigation through a court's decision dominates settlement of litigation from the shareholders' point of view, even when the firm loses. We develop a model using agency costs within the firm to explain why the market views settlement as a negative outcome on average and find empirical evidence supporting the implications of the model. Specifically, firms with weak corporate governance settle litigation more quickly, and the market reacts more negatively to settlements involving firms with higher agency costs.

POLITICALLY, THERE ARE FEW ISSUES that are more contentiously debated than tort reform in the United States. The argument is usually framed from the perspective of various opposing stakeholders in the process; proponents of reform contend that the system is too often used frivolously to extort wealth from business, while opponents of reform point out that it is the best means of protecting other stakeholders (customers, employees, neighboring communities, etc.) from damages inflicted by the operations of business. Certainly, there is ample evidence to prove that both statements are true at the margins. But often left out of the policy debates is the forgotten stakeholder in corporate litigation: the shareholders who must ultimately bear the cost of the litigation.

Within the economics literature, the debate has been more thorough. Since Cutler and Summers (1987) investigated the cost borne by shareholders of Texaco and Pennzoil during litigation, there have been many papers that have continued an empirical examination of the market's reaction to various events during corporate litigation.¹ As would be expected, the initial reaction to a firm

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¹ Bhagat, Brickley, and Coles (1994) conducted the first large sample examination of the market's reaction to inter-firm litigation and how the combined wealth effects related to the cost of litigation. Bhagat, Bizjak, and Coles (1998) extended this work by examining the reaction conditional on plaintiff type and type of litigation, as well as looking at the market's reaction to the conclusion of litigation. Karpoff and Lott (1993) examined the reputational penalty imposed on firms that are accused of criminal fraud, and Karpoff and Lott (1999) examine the impact of punitive damages on

being named as a defendant in a lawsuit is uniformly and significantly negative. This is not surprising, as shareholders anticipate the potential losses created by legal costs or penalties, as well as nonmonetary costs such as loss of managerial focus or damage to the firm's reputation and goodwill.

Somewhat more surprising is that several papers have also found a negative reaction to the settlement of litigation.² This is surprising, because settlement is often viewed as the optimal solution to litigation, in that it minimizes the legal costs of the firm, the social costs of providing a forum for the litigation, as well as reduces the risk of potentially receiving a much larger penalty if the firm is found guilty. And although these previous results were often based on small samples (12 or fewer), I also find a significantly negative reaction to settlements using a large sample of 737 cases. In contrast, I find a small positive reaction to judgments on average, *even when the firm loses the case*.

So, why does the market react more negatively to settlements than it does to the firm losing litigation? This paper extends the previous literature by examining one potential explanation. Most papers that model litigation assume that both parties act optimally given their information sets and beliefs, and that the decision to settle is based on the tradeoff between the potential costs of litigation and the expected payouts should they prevail in court. As the potential litigation costs increase, so does the likelihood of an out-of-court settlement. But Jensen and Meckling (1976) show that what might be optimal for the shareholder is not necessarily optimal for the manager, and it is the manager who actually makes the settlement decision. For example, while the shareholders of a firm have one reservation price below which they would be willing to settle, the manager might be willing to pay more in order to mitigate potential costs borne by the manager alone, such as an increased risk of being fired if the firm loses at trial.

Further, because information is often revealed through the discovery process and released during trial, corporate litigation may benefit shareholders by reducing the information asymmetries that exist between management and atomistic shareholders. Litigation may allow shareholders to better evaluate the abilities and judgment of the manager or perhaps enable them to get a more accurate assessment of the liability faced by the firm due to decisions made by its management. Therefore, managers may choose to settle cases in which

the markets' reaction to litigation. Other literature has focused on particular types of misconduct, such as environmental-related litigation (Karpoff, Lott, and Rankine (1998)) or antitrust litigation (Bizjak and Coles (1995)). For a brief summary of the major findings from these papers, see Bhagat and Romano (2002).

² For example, Karpoff and Lott (1999) find that there is a -2.43% drop in the share price of the defendant firm at the announcement of a settlement, as opposed to a -0.36% and -0.62% price drop in response to a judgment for the defendant and plaintiff, respectively. Bhagat et al. (1998) find a -0.68% decrease in share price at the time of a settlement if the plaintiff was a government entity and a -1.06% decrease if the plaintiff was not a firm. They do find that there is a positive 3.66% change in price if the plaintiff was an individual, but all these results are based on sample sizes of fewer than 12 firms. I am not aware of any large sample results for the markets' reaction to settlement.

information regarding their abilities or the true risk of their projects might be revealed, even though shareholders may prefer that the case go to trial.

Not only do agency costs increase a manager's incentive to settle litigation, but they may also affect the timing of the settlement. Over the course of litigation, information asymmetries decrease as information is revealed through the discovery process and trial. As time goes on, these agency costs become sunk and the settlement is based more on the potential losses at trial. Therefore, the highest expected losses for management are at the beginning of litigation, inducing management with higher agency costs to settle relatively earlier in the process than those firms with lower levels of agency conflict.

My theoretical model formalizes the above insights, which I also find to be consistent with the empirical evidence. I find that the length of time between the filing of a lawsuit and its settlement is significantly affected by the independence of the board of directors and by how managers and directors are compensated. Firms with larger boards and fewer outsiders on the board tend to settle litigation earlier, especially when the CEO is also the chairman of the board. After the settlement has been announced, I also find that the market's reaction is significantly more negative when the firm has greater potential for managerial abuse. I find that the market's reaction to settlement is significantly related to the firm's ownership structure, measures of free cash flow, and the book value of the firm's assets. And similar to the timing of settlements, the CEO's compensation and whether the CEO is also the chairman of the board have a significant impact on how the market views the settlement.

Yet, for cases that go to court, I find that none of the above corporate governance variables are related to the market's reaction when the verdict is handed down. This is true whether the firm wins or loses. Not only are the corporate governance variables unrelated to the market's reaction to the verdict, but also the market's reaction to a verdict is, on average, positive, even for losing verdicts. My interpretation is that the market views the judgments of the courts to be honest, that is, the judgments are viewed as less likely to be manipulated by management.

Overall, the evidence suggests that agency conflicts do have an impact on when managers decide to settle and that the market does price these potential conflicts into its reaction to settlements. It would suggest that for firms with greater information opacity, or relatively entrenched managers, the market would prefer that management take the case to trial, rather than settling it outside of the courtroom. My paper also suggests that civil litigation is a source of information for shareholders, and they benefit when the case proceeds to trial once it has been filed.

The paper proceeds as follows. Section I uses a relatively simple model of litigation to motivate the hypothesis that is tested empirically in this paper. Section II describes the sample data used in this study, while Section III presents the market's reaction to the manner in which the litigation was resolved. In Section IV, we present the results of cross-sectional tests for the hypothesis derived in Section I. Section V summarizes the results of the paper.

I. How Should the Market React to Litigation Events?

In order to analyze the impact of agency costs on the manager's incentives to settle litigation, I first begin by developing a simple model of how the market would react to settlements in the absence of agency conflicts.

On the day a lawsuit is filed, $t = 0$, the market's reaction should incorporate the anticipated cost of litigation. Let C_f be the dollar value of direct costs incurred if the case goes to trial, and C_g be the potential penalty assessed on the firm if it is found guilty at trial. If P_g is the anticipated likelihood of losing at trial, then the expected cost of trial should be

$$E[\text{cost of trial}] = C_f + P_g C_g. \quad (1)$$

If the market knew for certain that a trial would occur, then the initial market's reaction would simply be the discounted costs created by going to trial. However, the market's reaction at time 0 should also anticipate that a settlement may occur, *which cannot be predicted with certainty*. Therefore, let S denote the expected payout that management is willing to make in order to avoid going to trial, and let P_s be the probability that a settlement will occur. Therefore, the market's initial reaction on the day a lawsuit is filed is

$$\Delta MV_0 = -[P_s S + (1 - P_s)(C_f + P_g C_g)]. \quad (2)$$

This suggests that the initial reaction is negative, which is consistent with previous studies looking at the market's reaction to the filing of litigation.

Following the filing of a lawsuit, the parties proceed with the litigation process by requesting relevant data from the other party, or by filing motions with the court, often while negotiating a settlement at the same time. The litigation can be settled at any point in the process, even after the trial has begun. Previous models of settlement behavior state that a defendant is willing to settle when the cost of the settlement is less than the expected costs of a trial. Therefore, if management decides to settle, then the following will be true:

$$S < C_f + P_g C_g. \quad (3)$$

From equations (2) and (3), it follows that

$$-[C_f + P_g C_g] < \Delta MV_0 = -[P_s S + (1 - P_s)(C_f + P_g C_g)] < -S. \quad (4)$$

This implies that the initial market drop of ΔMV_0 at the announcement of litigation is an over-reaction when compared to what the initial reaction would have been if the market knew that a settlement would occur. Therefore, there should be a correction in efficient markets when a settlement is announced, and we should see a positive reaction at the announcement of a settlement. This positive reaction, from equation (4), is

$$[P_s S + (1 - P_s)(C_f + P_g C_g)] - S. \quad (5)$$

However, we do not always see this positive reaction to settlements in the data. Despite being based on the results of small samples, the works of both

Karpoff and Lott (1999) and Bizjak and Coles (1995) find that the market sometimes reacts negatively to settlements. Using a much larger sample of 737 events, I also find a significantly negative reaction on average to the settlement of litigation. Depending on the event study model and benchmark used, this abnormal reaction ranges from -0.35% to -0.18% . So, why does the market react negatively to settlements? One explanation may be that agency costs induce managers to settle suboptimally. So, I now adapt the simple model above to incorporate agency costs.

Suppose that the manager derives private benefits from being the manager, and these benefits could be restricted if the firm loses in trial. For example, managers who lose litigation may be more likely to be removed; the board may monitor management more closely during the trial; or the court may impose restrictions on the firm's operations. This is not unreasonable, as can be borne out in the data used in this study. Twenty-one percent of the firms in my sample who lost litigation replaced their manager in the year following the decision, as opposed to 13% in the firms that settled and 9% in the firms that won their case.³ Also, the discovery process in litigation may reveal information to the plaintiffs in the case, as well as to the general market regarding the abilities of the manager and the quality of the firm's current projects. Because the manager makes the decision to settle litigation, these costs will have an impact on what the manager is willing to pay in settlement.

Let C_a be the dollar value of perquisites lost by the manager if the firm loses litigation, and C_i be the dollar value of information that the manager would prefer to remain hidden from the plaintiff or shareholders. The value of C_i is decreasing with time, in that the information is more likely to be revealed the longer the litigation continues. And while the market cannot observe the correct values of C_a and C_i , it can draw inferences as to their value based on commonly observed proxies for the strength of corporate governance or the potential for agency conflict. Let S' be the expected payout that management is willing to offer in order to avoid going to trial *if there is an agency problem*. Based on these additional costs, the manager will be willing to settle if

$$S' < C_f + C_i + P_g(C_g + C_a). \quad (6)$$

The initial market reaction, given this new S' , is

$$\Delta MV_0 = -[P_s S' + (1 - P_s)(C_f + P_g C_g)], \quad (7)$$

where it is possible that

$$[C_f + C_i + P_g(C_g + C_a)] > S' > [C_f + P_g C_g] > S. \quad (8)$$

³ Endogeneity may exist. However, it may not be much of a problem in our article in many of its interpretations. For example, we find that litigation losses and managerial firings are correlated. It may be that litigation losses lead to greater managerial firing (no endogeneity) or that litigation losses and firings occur because managers do foolish things (endogeneity). Both interpretations are compatible with the main conclusions of this paper, which are that bad managers have high agency costs and are willing to pay more for a settlement.

If inequality (8) holds, then

$$-[C_f + P_g C_g] > \Delta MV_0 = -[P_s S' + (1 - P_s)(C_f + P_g C_g)] > -S'. \quad (9)$$

Equation (9) implies that the initial market drop of ΔMV_0 , given in equation (7), is an under-reaction when compared to how negative the initial reaction would have been if the market knew that a settlement would occur. Therefore, there should be a correction in efficient markets when a settlement is announced. The absolute value of this negative reaction, from equation (9), is

$$S' - [P_s S' + (1 - P_s)(C_f + P_g C_g)]. \quad (10)$$

From equation (10), it can easily be seen that the negative reaction at the announcement of a settlement depends on the magnitude of S' . From equation (6), we know that S' can increase if C_i or C_a is higher. This suggests that the negative reaction at the announcement of a settlement is more negative if C_a or C_i is higher; therefore, we obtain the following two testable implications.

HYPOTHESIS 1: *As C_a and C_i increase, the market's reaction to settlement announcements becomes more negative.*

This is because as agency costs increase, there is a larger disparity between what the manager is willing to pay to settle litigation, relative to what the shareholders would potentially pay if the case continued to trial. Therefore, even though the market is aware of these conflicts at the initial filing of the case with the courts, the market's initial reaction is the weighted average of the cost of suboptimal settlement and trial costs. Therefore, an efficient market adjusts its initial assessment of costs when the case is resolved to reflect the actual versus predicted costs. Holding the probability of settlement constant, the market's reaction subsequent to the announcement of a settlement is more negative for firms with high agency costs than for firms with lower agency costs because the disparity between the costs of the two outcomes is larger.

Not only do agency costs affect the market's reaction to settlements, but they also affect the timing of settlements. Spier (1992) modeled the timing of settlements in litigation and found that when the costs of negotiation leading up to trial increase, managers settle early in the litigation. But as these costs become sunk, managers have less incentive to settle until right before the case is tried, as they prefer to delay making the settlement payment, but they want to avoid the costs of trial. While Spier uses pre-trial negotiation costs in her model, C_i has the same effect in mine. Because C_i is decreasing over the course of the litigation, it always affects the settlement amount the most in the beginning. Therefore, managers have greater incentive to settle quickly when there are more agency problems. So, Hypothesis 2 is as follows.

HYPOTHESIS 2: *As C_i increases, the length of time between the filing of a case and the settlement of the case decreases.*

It is important to make clear that the model does not imply that settlement is a separating mechanism between good and bad management. Good management chooses to settle whenever the plaintiff's settlement demand is below the expected cost of trial, and therefore the shareholders will benefit. Likewise, because the plaintiff may over-estimate the likelihood of winning at trial, he may demand too much and the good manager will proceed to trial, which is what the shareholder would prefer. Similarly, bad managers may accept a plaintiff's settlement offer if it is below the shareholder's expected cost of trial or reject a settlement offer when it is higher than the manager's expected cost of trial, and so the shareholders benefit from the decision. However, shareholders also know that managers are willing to pay a greater amount to settle when there are higher agency costs, and managers in many cases settle to the detriment of the shareholder, who would have preferred continuing to trial, leading to the negative reaction to settlements.

II. Data

The events used in this study were gathered from PACER, which is a database of cases filed in United States district courts. I began by searching for cases filed in the United States district courts based on the following types of violations: antitrust, breach of contract, product liability, labor violations, patent infringement, and shareholder lawsuits. All cases were filed between 1994 and 1998, so that there was a good chance of them being resolved by 2001 for the tests in this paper. The initial search resulted in over 80,000 cases filed, from which I removed all cases that did not involve a publicly listed firm; cases that were later consolidated into product liability class action lawsuits; and those lawsuits that occurred in a district court that did not have PACER access through the internet. These screens removed the vast majority of cases, leaving a sample of 2,930 events.

I then downloaded case information for each event in my sample. Typically, the information gathered from the courts included the filing date, the date the case was closed, and any motions or judgments entered into the court documents. The information also included how the case was resolved or why it was removed from the court's docket. If the case was decided by a judge's ruling on a motion or by a rendered verdict, the date used in the tests is the actual date when the ruling was issued. Therefore, it is clear what date to use when estimating the abnormal returns around a judgment. But settlements are more ambiguous. In many cases, it was clear that a settlement occurred and the date the parties contacted the court was given. Many times, this was just the parties contacting the court announcing the settlement, while other times, it was a request for a stay in the trial proceedings while the settlement was concluded. For this paper, I use the first date listed in the court documents where it is clear that the parties were planning to settle the case.

Of the 2,930 events remaining after the initial screens, I then removed other cases for several possible reasons. First, if the case was remanded to a state or local court and I could no longer track the outcome through PACER, it was

removed from my sample. This screen should cause no selection bias in my results. Second, federal code allows the plaintiff to dismiss the case in the initial stages of litigation without requiring the court's assent. Several times, it was not clear whether the case was settled or if the plaintiff simply withdrew the case from the court's docket. If it was clear that the parties had settled, then the case would be included in the sample. Otherwise, the case was dropped. This should not create a selection bias. But it is essential to know that an actual settlement occurred, as my hypothesis is that agency problems play a role in determining the cost and timing of a settlement.

In addition, 489 cases involving foreign firms were dropped from the sample. By doing this, I am able to focus my tests on agency costs between the shareholders and the managers without having to take into account additional costs imposed by the litigation taking place in a different country that may have a much different legal system. This screen should not bias the results of this paper. Finally, I eliminated firms for which data were not available for the later cross-sectional tests. This may create a bias by over-representing large firms in the sample. One argument would be that these firms are more visible, making them less susceptible to agency conflicts. An alternative argument would be that larger firms tend to be more complex and therefore more difficult for shareholders to analyze.

After these screens, the final sample is made up of 965 events. Certainly, more firms that I have not accounted for were involved in civil tort litigation during this time period. One of the shortfalls of using the PACER database is that only the first named defendant is listed on the index. Since this was what was used to check whether a case should be included in the sample, I would have passed over many cases where the first defendant was not a publicly listed firm, but the other defendants were. Despite this shortcoming, the final sample should not be biased by this fact. An advantage of the PACER data is that the final sample has a larger proportion of small firms than the sample would have included using newspapers as the primary source. As firm size is often used as a proxy for information opacity, I wanted to have as large a cross-section as possible. It is also important to remember that these are only cases filed in the federal district court system, which is viewed as less risky to defendants than when suits are filed in the various state courts.

A case is defined as a loss for defendants if a verdict is rendered against them either following a trial, or if a ruling is made in favor of the plaintiff on a motion for summary judgment against the defendant. A case is defined as a win for defendants if a court rules in their favor following a trial or if a judge rules in the defendants' favor on a motion to dismiss the litigation. The date of the verdict in most cases precedes a hearing on damages against the firm for the events in this sample, making the verdict itself the most likely cause of the market's reaction on the event date.

Table I gives an initial description of the sample sorted on such characteristics as the type of litigation, whether the plaintiff is a business, individual, or governmental entity, as well as the outcome of the case. Settlements make up 76.4% of the events while 23.6% are decided by a judgment from the court. For

Table I
Number of Defendant Firms by Type of Lawsuit,
Type of Plaintiff, and Size

This table shows the composition of the overall sample based on several factors. All defendants are publicly listed firms. For the identity of the plaintiff, government refers exclusively to the United States federal government. Class action lawsuits are excluded from the sample. The market deciles were created using the size of the firm at the time of the resolution of the litigation.

	Litigation		Settled
	Firm Wins	Firm Loses	
Plaintiff			
Government	0	4	13
Business	73	16	285
Individual	118	17	439
Lawsuit type			
Shareholder	11	1	18
Contract	4	3	27
Product liability	74	7	283
Antitrust	20	8	69
Labor	24	6	113
Patent	58	12	227
Market value decile			
1	2	2	32
2	3	2	16
3	6	2	42
4	11	1	41
5	11	1	61
6	13	1	66
7	20	3	64
8	24	1	92
9	41	6	112
10	60	18	211
Total	191	37	737

the cases resolved by a judgment or verdict, 84% are cases in which the firm wins the judgment and 16% are events in which the firm loses. Product liability cases are the most common type of lawsuits in the sample, followed by patent infringement, labor violations, and antitrust suits. The majority of the lawsuits are brought by individuals, with government filing the least number of cases (18), with all but one of those being antitrust cases. When the government was the plaintiff in a case that went to trial, the firm lost 100% of the time. When businesses or individuals were the plaintiffs in cases concluded by a judgment, the firm won 82% and 87% of the time respectively. It should be noted that the number of settlements is almost certainly lower than what actually occurs. As I do not have data for voluntary dismissals and arbitrations, I am undercounting many cases that might have been settled as well.

Accounting data is collected using the COMPUSTAT database, and it reflects the values reported by the firm in the quarter prior to the date of resolution.

Information on the composition of the board of directors was taken from the last proxy statement issued before the event date for each firm in the sample. The return data used in the event studies comes from the Center for Research in Security Prices.

Table II shows the differences in various characteristics of the firm, based on whether the case was resolved through a settlement or by a court judgment. When comparing across all the different types of litigation, few striking patterns seem to emerge. In general, firms that go to trial seem to have higher levels of executive compensation, dollar values of options granted, and higher insider shareholdings. Other than those three variables, there does not seem to be any clear pattern across these variables.

Table III examines the length of time between the filing and the settlement of lawsuits based on the market value of the firm, the type of lawsuit, and the identity of the plaintiff. Again, there does not appear to be a significant pattern in the data with the exception of lawsuits filed by businesses against businesses, for which it appears that the length of litigation is positively related to the market value of the firm.

III. Market Reaction to the Resolution of Litigation

Generally, settlements have been assumed to be good news for the shareholders of the firm, in that they minimized the cost of litigation and removed an element of uncertainty from estimates of future cash flows. However, previous research has shown that this is not always the case. Both Karpoff and Lott (1999) and Bhagat et al. (1998) find a negative market reaction following the settlement of litigation. This result seems counterintuitive when there are no agency costs, because firms should only settle when the settlement amount is less than the expected costs of going to trial. See equation (5) and the analysis preceding it for a formal explanation.

Because these results were found using small samples (fewer than 12 events), I begin by confirming these results using a larger sample of events. I conduct event studies using several commonly used methods to measure the abnormal market reaction to litigation.⁴ The first method is the standard market model, calculated using an equally weighted index and a value-weighted index. I use an estimation period beginning 168 days before the event, continuing for 126 trading days. There is then a space of 42 days between the end of the estimation period and the event window. Abnormal returns are estimated over three different event windows, one short term and the other two long terms.

The shortest event window begins 1 day before the event date and extends to 3 days following the event. These 4 days are selected based on an examination of a small subset of firms in the sample and reflects the average time between when the case docket first mentioned the possibility of a settlement and the first date when I was able to find news of a possible settlement through searching Lexis Nexis for these firms. I also use the same 4-day event window for those

⁴ For further description of the methodology used, see Campbell, Lo, and MacKinlay (1997).

Table II
Sample Characteristics of Defendant Firms Sorted by Outcome and Type of Litigation

The numbers given reflect the average value for all cases included in the given subsample. 5% blockholders refers to the percent of the firm held by shareholders that possess more than 5% of the outstanding shares. Insider shares is the percentage of the firm held by its management, and free cash flow is the operating income of the firm minus changes in net working capital, capital expenditures, and tax payments. Debt/equity is the book value of debt divided by the market value of equity, while earnings/price is the inverse of the market price of the stock divided by the firm's earnings per share. Dividends, cash, sales, and total assets are the values reported for the last quarter prior to the event date. Z-prob is Altman's Z-score, which is a measure of a firm's proximity to bankruptcy. Salary and options' data are based on the year prior to the event. Managerial options are the dollar value of shares underlying both vested and nonvested options given to the firm's top management. This value is also scaled by the market value of the firm. % inside directors is the percentage of the board of directors that also has executive positions within the firm. Director salary is the annual income paid to directors and CEO = chairman is equal to one if the same person holds both positions in the firm.

	Shareholder			Contract			Product Liability		
	Settle	Trial	Prob.	Settle	Trial	Prob.	Settle	Trial	Prob.
Number (#)	18	12		27	7		283	81	
5% blockholders (%)	18.64	18.33	0.971	21.26	14.99	0.346	20.95	23.70	0.227
Insider shares (%)	9.24	4.65	0.416	6.56	2.15	0.198	10.94	10.89	0.978
Return on equity (%)	-2.01	23.56	0.131	11.37	8.37	0.781	13.37	4.17	0.047
Market value (\$MM)	14476.2	23081.9	0.537	13273.4	7875.6	0.590	8713.6	11430.3	0.267
Free cash flow (\$MM)	292.99	1517.59	0.090	-56.34	50.73	0.783	260.68	397.58	0.227
Debt/equity (#)	2.72	4.20	0.555	2.09	1.22	0.604	2.37	3.33	0.091
Earnings/price (%)	-0.10	0.06	0.295	-0.01	0.04	0.722	-0.01	0.03	0.325
Dividend/sales (%)	0.01	0.03	0.087	0.02	0.02	0.895	0.02	0.02	0.520
Dividend (\$MM)	99.93	358.93	0.164	245.91	98.87	0.402	121.66	162.83	0.302
Cash (\$MM)	742.20	1005.35	0.670	624.45	174.91	0.444	239.93	343.30	0.284
Sales (\$MM)	5495.6	13427.9	0.045	12257.2	5132.4	0.414	6988.3	8982.0	0.267
Total assets (\$MM)	33180.2	55695.8	0.402	14564.4	10562.5	0.748	9873.3	12567.4	0.470
Z-prob (#)	4.06	5.35	0.635	3.97	2.91	0.524	4.06	3.93	0.733
CEO salary (\$Thou)	5633.4	16214.8	0.054	5050.5	5242.6	0.915	5360.2	6378.5	0.503
Managerial options (\$Thou)	6650.8	26493.4	0.027	5282.5	6212.5	0.693	6173.4	8912.3	0.127
\$Options/MV (%)	0.75	0.26	0.282	0.20	0.12	0.685	0.32	0.54	0.289
Number directors (#)	9.44	11.67	0.225	10.70	10.43	0.825	10.52	10.68	0.639
% inside directors (%)	18.63	18.55	0.982	19.44	16.85	0.593	20.84	19.37	0.300
Director salary (\$Thou)	22.95	31.89	0.191	23.65	23.57	0.990	23.61	24.75	0.462
CEO = chairman (%)	88.24	100.00	0.233	96.00	100.00	0.605	98.21	98.75	0.742

(continued)

Table II—Continued

	Antitrust			Labor			Patent		
	Settle	Trial	Prob.	Settle	Trial	Prob.	Settle	Trial	Prob.
Number (#)	69	28		113	30		227	70	
5% blockholders (%)	17.85	14.41	0.432	23.40	23.03	0.924	19.65	15.45	0.072
Insider shares (%)	7.63	7.67	0.990	9.80	6.25	0.195	9.43	6.59	0.127
Return on equity (%)	17.77	14.02	0.474	17.24	14.67	0.688	13.09	18.54	0.111
Market value (\$MM)	20372.1	6480.6	0.022	8521.2	11937.0	0.409	14794.3	28946.9	0.004
Free cash flow (\$MM)	792.35	433.50	0.278	242.43	564.22	0.092	453.31	705.84	0.183
Debt/equity (#)	2.04	3.34	0.166	3.39	1.98	0.217	1.87	1.33	0.219
Earnings/price (%)	0.05	0.04	0.456	−0.01	0.04	0.282	0.01	0.03	0.375
Dividend/sales (%)	0.02	0.02	0.487	0.01	0.01	0.654	0.01	0.02	0.013
Dividend (\$MM)	332.86	132.82	0.106	116.26	178.02	0.435	162.53	367.57	0.004
Cash (\$MM)	557.02	286.39	0.238	625.36	181.18	0.118	376.33	605.70	0.066
Sales (\$MM)	12357.8	8138.4	0.269	6806.0	7571.2	0.701	7733.9	14141.8	0.006
Total assets (\$MM)	22808.9	13287.3	0.304	17609.9	8461.1	0.249	8055.6	16830.3	0.007
Z-prob (#)	3.86	2.84	0.215	4.07	4.55	0.403	5.81	6.15	0.656
CEO salary (\$Thou)	7016.6	7460.2	0.330	6050.9	4687.4	0.589	6003.2	9149.7	0.046
Managerial options (\$Thou)	9173.3	10683.8	0.710	7652.2	5764.3	0.491	8467.6	11723.6	0.109
\$Options/MV (%)	0.16	0.21	0.498	0.36	0.43	0.748	0.36	0.22	0.222
Number directors (#)	11.44	10.68	0.252	10.82	10.13	0.338	9.76	10.04	0.504
% inside directors (%)	18.70	18.78	0.973	21.93	20.00	0.433	20.89	19.94	0.531
Director salary (\$Thou)	22.96	23.53	0.873	22.51	23.28	0.779	20.91	24.81	0.028
CEO = chairman (%)	97.10	92.86	0.346	98.23	93.10	0.139	95.13	95.71	0.842

Table III
Number of Days between the Filing and Settlement of Litigation
by Defendant Firms Sorted by Firm Size

Listed is the average number of days between the filing of the lawsuit and the settlement of the lawsuit sorted by type of litigation, type of plaintiff, and firm size. Quartiles are based upon all the firms in the sample, including those that were decided by a court.

	Size Quartile			
	Q1	Q2	Q3	Q4
Total	400.6 <i>n</i> = 199	401.5 <i>n</i> = 191	384.6 <i>n</i> = 175	436.2 <i>n</i> = 179
Type of plaintiff				
Government	<i>n</i> = 0	121.0 <i>n</i> = 2	135.5 <i>n</i> = 4	42.0 <i>n</i> = 7
Business	377.6 <i>n</i> = 81	387.6 <i>n</i> = 75	402.3 <i>n</i> = 61	513.5 <i>n</i> = 72
Individual	416.5 <i>n</i> = 118	415.5 <i>n</i> = 114	383.8 <i>n</i> = 110	413.9 <i>n</i> = 100
Type of lawsuit				
Shareholder	508.9 <i>n</i> = 8	470.3 <i>n</i> = 4	257.0 <i>n</i> = 1	369.2 <i>n</i> = 5
Contract	417.1 <i>n</i> = 8	421.3 <i>n</i> = 20	631.6 <i>n</i> = 5	421.3 <i>n</i> = 8
Product liability	416.7 <i>n</i> = 79	453.1 <i>n</i> = 83	375.1 <i>n</i> = 72	528.9 <i>n</i> = 52
Antitrust	350.8 <i>n</i> = 8	388.7 <i>n</i> = 13	487.2 <i>n</i> = 19	358.8 <i>n</i> = 29
Labor	400.3 <i>n</i> = 34	309.9 <i>n</i> = 25	344.4 <i>n</i> = 29	311.6 <i>n</i> = 25
Patent	370.7 <i>n</i> = 62	360.3 <i>n</i> = 56	359.9 <i>n</i> = 49	452.7 <i>n</i> = 60

firms decided by a judgment or verdict, even though I can more closely specify the dates for those events. This is solely for comparison's sake, as the abnormal returns exhibited are conservative and much less significant than those found using a narrower event window. I also report abnormal returns over two longer event windows of 6 months and 1 year following the event.

In addition to using the market model, I use two other commonly used measures of abnormal return. The market-adjusted model is simply calculated by subtracting the market's return on the event date from the firm's return on the same day. The third model used is calculated by estimating the average return for each firm leading up to the event and by then subtracting a firm's average return from that firm's realized return for each day in the event windows. In this study, the average return was calculated over the same estimation period as was used in the market model.

Table IV shows the results of these tests. Regardless of which method or benchmark is used, I find a significantly negative reaction to the announcement

Table IV
Market Reaction to the Resolution of Litigation by Defendant Firms

Listed is each portfolio's average cumulative abnormal return at the resolution of corporate litigation. Abnormal returns are calculated by using three methods, using both the value weighted and equally weighted indices as benchmarks. Cumulative abnormal returns are calculated over three event horizons. Abnormal returns from the market model are estimated by regressing the firm's returns for 126 days in the estimation period, beginning 168 days before the event date, on the market benchmark's returns over the same period. Using the estimated parameters from this model, predicted firm returns are calculated based on the market benchmark's return during the event window. These predicted returns are then subtracted from the firm's actual returns to calculate the abnormal return for that day. The average abnormal return is then calculated for each day across all the firms in the sample, and the daily averages are summed for each day in the event window to estimate the cumulative abnormal return. To estimate daily market adjusted abnormal returns, the market benchmark's return is subtracted from the firm's return for each day in the event window. Mean adjusted daily abnormal returns are calculated by subtracting each firm's average daily return, estimated over 126 days beginning 168 days before the event date, from the firm's daily returns in the event window. Cumulative abnormal returns are estimated using the market adjusted or mean adjusted returns the same way as described for the market model estimates.

Event Window	(-1, +3)			(0, +126)			(0, +252)		
	Settled	Wins	Loses	Settled	Wins	Loses	Settled	Wins	Loses
Market model									
Equally weighted	-0.18%	0.61%	1.78%	-0.39%	0.71%	2.39%	0.64%	0.51%	1.97%
Value weighted	-1.350\$	1.310\$	1.997*	-0.845	0.488	0.157	-0.246	0.507	0.087
	-0.26%	0.50%	1.04%	-2.14%	0.67%	-1.26%	-2.36%	1.16%	-3.61%
	-2.049*	1.520\$	1.14	-3.238***	0.334	-0.398	-3.563***	0.599	-0.645
Market adjusted									
Equally weighted	-0.34%	0.46%	1.57%	-4.95%	-3.06%	-1.09%	-6.15%	-4.49%	-4.80%
Value weighted	-2.363**	0.87	1.716*	-6.307***	-2.439**	-0.591	-6.734***	-2.962**	-1.093
	-0.31%	0.46%	1.05%	-2.65%	0.69%	-0.52%	-2.68%	1.44%	-2.41%
	-2.351**	1.243	1.173	-3.716***	-0.323	-0.327	-3.617***	-0.194	-0.55
Mean adjusted	-0.35%	0.41%	0.88%	-2.97%	-0.39%	-3.11%	-4.16%	-0.85%	-4.66%
	-2.230*	1.115	0.851	-3.445***	0.012	-0.646	-4.399***	-0.087	-0.567

\$, *, **, and *** denote statistical significance at the 10%, 5%, 1%, and 0.1% levels, respectively, using a one-tailed test.

of a settlement. The range of abnormal reactions, which depends on the choice of model, has an upper boundary of -0.18% (significant at the 10% level) and a lower bound of -0.35% (significant at the 1% level). These results are skewed by large, positive reactions to some settlement announcements since the median abnormal returns for these models ranged from -0.60% to -0.40% . There was a negative reaction for 53.3% of the events.

Similar to that used for settlements, the method of measurement did not significantly affect the estimates of the abnormal returns surrounding events in which the firm wins a judgment against the plaintiff. In this case, the range begins at an insignificantly positive average abnormal return of 0.41% and is capped by a moderately significant return of 0.61% (significant at the 10% level). Not surprisingly, given the much smaller sample, there is greater variation in the estimate of abnormal returns following a judgment against the firm. For these events, the lowest measure is 0.88% , which is insignificantly positive, and the highest estimate of abnormal returns is 1.78% (significant at the 5% level).

Much more interesting than the magnitude of the abnormal returns is the pattern seen in returns across the types of outcomes, whether surrounding the day of the event or over the course of the following year. While the average reaction to settlements is significantly negative regardless of which method is used, the average reaction to a judgment, win or lose, is positive. These results are consistent with the model, especially if agency costs make the settlement more expensive than the potential losses for the firm if it loses the litigation.

The model implies that shareholders of firms with high agency problems would prefer that the case go to trial, where even if they lose, information regarding the quality of management and the firm is revealed and an honest outcome occurs. Figure 1 documents this preference by mapping the cumulative distributions of the abnormal returns following settlements relative to those following a court ruling. With the exception of a few extreme negative returns (surprisingly belonging to firms that won litigation), the decision to settle is stochastically dominated by the decision to go to trial.

I further examine the results by calculating the average abnormal return for firms after sorting by size, whether the plaintiff was the government, a business, or an individual, and the type of allegation against the firm. Table V displays the abnormal returns for defendant firms separated based on the market value of the firm, the identity of the plaintiff, and the type of litigation. There does appear to be some relationship between the firm size and the market's reaction to the news of a settlement. In the smallest quartile (which corresponds to the first three deciles of the market overall), there is generally a positive reaction to settlements over most types of allegations. For the firms in the smallest quartile, there is a negative reaction to a settlement only when resolving breach of contract or antitrust lawsuits, and these events make up only 14 of the 196 settlement events.

To the extent that firm size proxies for the information opacity of firms, this contradicts the predictions of the hypothesis. However, this may also reflect that small firms have fewer resources to fight litigation and are at greater risk

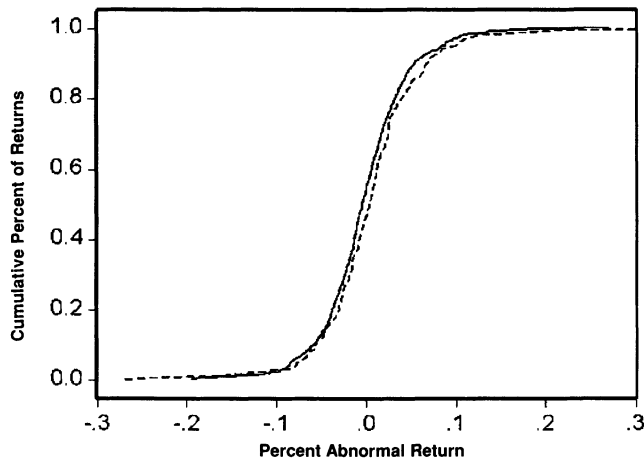


Figure 1. Cumulative distribution of abnormal returns. Shown here is the cumulative distributions of returns following both settlements and judgments handed down by courts. The solid line is the distribution of returns following settlements, and the dotted line is the distribution of returns following judgments. The horizontal axis is the percentage value of abnormal return, with the vertical axis representing the percentage of the returns below the specified return. The four events that were more negative than settlements all occurred following a verdict in favor of the firm.

of going into insolvency if the penalties are too severe. Therefore, the market is more concerned with potential bankruptcy than it is with agency costs. This view is supported by previous research and by the results of the cross-sectional tests reported later in this paper.⁵

The same seems to be true when looking at the firms that go to trial. Similar to reactions to settlements, it appears that the reaction to the resolution of litigation is different in smaller firms than it is in larger firms. Even when the firm wins the case, there is a negative market reaction in the smallest quartiles, focused mainly in the reactions to patent, labor, and breach of contract allegations. One interesting pattern that does appear is overall negative reactions when the firm wins patent litigation, as opposed to the generally positive reaction when the firm loses. This counterintuitive pattern is also present (although the small sample sizes makes any inference suspect) at the conclusion of shareholder and contract litigation.

IV. The Effect of Agency Costs on the Resolution of Litigation

A. Independent Variables Used in Regression Models

To examine what effect agency conflicts have on the resolution of corporate litigation, it is necessary first to find variables to proxy for the various types

⁵ Several papers have examined why the combined change in the market value of the firms involved in litigation is larger than the actual direct costs of litigation. Both Cutler and Summers (1987) and Bhaghat et al. (1994) find that the potential for financial distress is related to these excess losses. The results of Bizjak and Coles (1995) support these earlier findings and also show that potential financial distress is a significant factor in whether a firm decides to settle.

of agency conflicts inherent in the owner–manager relationship. Typically, the literature has examined these problems from two points of view. The first approach looks for the optimal mix of debt and equity financing, while the second approach examines how these costs are affected by various corporate governance mechanisms. Therefore, I use the variables that the literature has found to be significant in measuring and reducing the managers' incentive to make decisions that are optimal for their own wealth at the expense of shareholders.

Jensen (1986) describes a situation in which managers derive perquisites from investments, whether or not the projects have positive or negative net present values, and thus have incentives to over-invest. He then shows how debt can alleviate this problem by forcing managers to disgorge free cash flow. Other papers, such as Stulz (1990) and Hart and Moore (1995), also show how the optimal use of debt can better align the interests of management and shareholders. Easterbrook (1984) shows how setting a dividend payment policy can force a firm into the capital market more often, reducing the agency conflicts inherent in the manager–owner relationship.

Thus, a measure of free cash flow is included as an independent variable in the model, measuring the incentive that management has to over-invest, as well as the ratio of debt to equity, which measures to what degree management is constrained in its investment choices. Also included is the dollar value of dividends paid by each firm in the sample scaled by the firm's net income. If agency costs are considered when the market reacts to litigation, then it would be expected that there would be a negative relationship between free cash flow and the abnormal returns surrounding a settlement while there would be a positive relationship between the two ratios and abnormal returns.

The other approach to minimizing the effect of agency conflicts on managerial decisions is to create strong internal corporate governance mechanisms. In a survey of corporate governance mechanisms around the world, Denis and McConnell (2003) point out that the board of directors and the ownership structure of the firm are the two key corporate governance mechanisms. Therefore, we include several variables that proxy for the strength of the board and also include variables related to the composition of ownership in the firm.

For several reasons, it is difficult for small, atomistic shareholders to coordinate together to enforce discipline on management. Shleifer and Vishny (1986) demonstrate the benefits of having large shareholders in the ownership structure of the firm, in that they have more incentive to monitor managers and can facilitate the takeover of underperforming firms. This is confirmed by Shivdasani (1993), who demonstrates that having large shareholders increases the likelihood of a firm being taken over, and by Denis and Serrano (1996), who find that management turnover is higher after a failed takeover, when firms have large outside blockholders.

Other papers have documented the importance of managerial shareholdings. As managers own increased shares in the firm, they begin to bear a higher proportion of the costs from inefficient investment. However, Morck, Shleifer, and Vishny (1988) and McConnell and Servaes (1990) both have found that this is true only up to a point: after a certain level, the costs from managerial

entrenchment outweigh the alignment benefits of higher managerial shareholdings, although they disagree on where this breakpoint occurs. Because the majority of firms in my sample have insiders who own less than 40% of the firm's shares, I rely on McConnell and Servaes' results to predict that there should be a positive relationship between the level of insider ownership and the market's reaction to settlements.

Finally, I include several variables that previous research has found to be related to how effective corporate boards are in monitoring managers. The first such variable is board size. Yermack (1996) and Eisenberg, Sundgren, and Wells (1998) both find that there is a significantly negative relationship between the size of the board of directors and a firm's Tobin's Q. This is consistent with the hypothesis put forward by Jensen (1993) that larger boards are less efficient in monitoring the actions of management.

While Hermalin and Weisbach (1991) find little evidence for a significant relationship between the composition of the board and its overall financial performance, there is evidence that the makeup of the board influences how the market reacts to its decision making. For instance, Brickley, Coles, and Terry (1994) find that the market's reaction to the adoption of poison pills by management is positively related to the percentage of outside directors on the board. Rosenstein and Wyatt (1990) find that there is a significantly positive reaction by the market to the announcement of an additional outside director being appointed to the board. These results indicate that the market views outside directors as valuable tools in monitoring management.

Other characteristics that may be important include whether the CEO and the board chairman is the same person, as well as how the board members are compensated. While there have been a few studies finding that firms in which the CEOs and chairmen of the boards are separate have better performance, Brickley, Coles, and Jarrell (1997) find that there is little evidence to support this and that it may be more costly for shareholders to separate the roles. Despite their view, the separation of these roles has been adopted in many country's codes of best practice, such as in the United Kingdom. And because investors may view it as important, an indicator variable is included to test whether their reaction is related to the same person holding both positions.

As to board member compensation, Perry (2000) finds that there is a stronger relationship between firm performance and CEO turnover when board members receive incentive pay. This would support the idea that boards monitor more effectively when their own compensation is tied to firm performance. Therefore, I include a variable to proxy for director compensation in the firm.

The final independent variables included in my regressions proxy for the size of the firm, which is often used as a measure of information transparency, since larger firms tend to be more closely scrutinized, and variables that measure managerial compensation. While higher compensation may give managers more incentive to make value-maximizing decisions, it may also make them risk-averse. Therefore, in the context of my hypothesis, highly paid managers may wish to settle more quickly in order to protect their compensation. Also, higher compensation may reflect weaker corporate governance structures. This

is consistent with Core, Holthausen, and Larcker (1999), who find that executive compensation is higher in firms with greater agency problems. On the other hand, Mehran (1995) finds that it is not necessarily the level of compensation that matters. Instead, he finds that firm performance is positively related to the percentage of compensation that is equity based. Therefore, I include the CEO's overall salary, the dollar value of options rewarded, and the dollar value of options scaled by the market value of the firm in the regression models.

The regression models also include several variables to control for other potential explanatory factors for the market's reaction at the conclusion of litigation. Dummy variables are used to indicate whether the plaintiff is a business, an individual, or a government entity, as well as what type of allegation was made against the defendant. Also included is Altman's *Z*-score, which has been used to predict the likelihood of a firm declaring bankruptcy, as proximity to bankruptcy has been found to be a significant predictor of settlements in previous papers.

B. Results

Consistent with the first hypothesis, there is a negative relationship between the market's reaction to the settlement of litigation and the potential for agency conflicts between shareholders and managers. The first column of Table VI shows the results of a regression of the event day abnormal return at the time of settlement on the various measures for potential agency conflicts in the firm. When firms settle, there is a significantly negative relationship between the levels of free cash flows and the market's reaction to the settlement. There is also a significantly positive relationship between the market's reaction to the settlement and to the level of dividends paid by the firm, as well as to the size of the firm. These results are consistent with the first hypothesis.

There is also a strong relationship between the strength of corporate governance mechanisms and the market's reaction to the settlement of litigation. The level of insider ownership of shares is significant and positively related to the market's reaction to news of the settlement. This is consistent with the view that managerial ownership aligns the interests of the managers with those of the shareholders. Also, there is a positive relationship between the market's reaction to settlements and to the amount of options paid to managers, while there is a negative (but not significant) reaction to the level of nonperformance related salary. This is consistent with options reducing the agency costs, while managers of firms with weak corporate governance tend to have higher salaries, as found in Core et al. (1999). Finally, having the same person serving as both CEO and chairman of the firm is significantly related to negative market reactions at the announcement of settlements.

In many cases, settlements follow the rejection of a firm's motion to dismiss.⁶ Certainly, the decision by the judge may have a great deal of impact on how shareholders view the expected cost of going to trial, since the decision

⁶ I would like to thank an anonymous referee for making this point.

Table VI
Results from Regression of Event Period Abnormal Return on Agency Proxies

Listed are the results from a regression of each firm's cumulative abnormal return at the time of the resolution of litigation on the following characteristics of the firm. 5% blockholders refers to the percent of the firm held by shareholders that possess more than 5% of the outstanding shares. Insider shares is the percentage of the firm held by its management, and free cash flow is the operating income of the firm minus changes in net working capital, capital expenditures, and tax payments. Debt/equity is the book value of debt divided by the market value of equity, while earnings/price is the inverse of the market price of the stock divided by the firm's earnings per share. Dividends, cash, sales, and total assets are the values reported for the last quarter prior to the event date. Z-prob is Altman's Z-score, which is a measure of a firm's proximity to bankruptcy. Salary and options' data are based on the year prior to the event. Managerial options are the dollar value of shares underlying both vested and nonvested options given to the firm's top management. This value is also scaled by the market value of the firm. % inside directors is the percentage of the board of directors that also has executive positions within the firm. Director salary is the annual income paid to directors and CEO = chairman is equal to one if the same person holds both positions in the firm. All values are adjusted for heteroskedasticity as specified in White (1980). The first column under settlement reports the values of a regression using all settlement events, while the second settlement column uses a sample in which all settlements that followed a failed motion to dismiss have been removed.

	Pred	Settlement		Judgment in Favor of	
		Full Sample	Failed Motion	Defense	Plaintiff
Constant		0.03669	0.04016	-0.15893	-0.67582
Cash flows	Free cash flow	0.229	0.193	0.073	0.039
		-0.00000523**	-0.0000048*	0.00000001	-0.00001142
	Debt/equity	0.049	0.086	0.999	0.567
		0.00059	0.00069	0.00005	-0.00613
Info. opacity	Dividend/sales	0.287	0.232	0.970	0.325
		0.26853***	0.28015**	-0.05498	-0.00127
		0.009	0.011	0.847	0.998
Ownership	Total assets	0.00000051**	0.00000042*	-0.00000013	-0.00000139
		0.015	0.074	0.835	0.248
	5% blockholders	0.00000531	-0.0000187	-0.0001086	0.00114
		0.968	0.891	0.756	0.235
	Insider shares	0.000309*	0.000365**	-0.002903	-0.00071
		0.057	0.036	0.555	0.614

(continued)

Table VI—Continued

	Pred	Settlement		Judgment in Favor of	
		Full Sample	Failed Motion	Defense	Plaintiff
Governance	CEO salary	−0.00000086	−0.0000011**	−0.00000011	0.00000254
		0.105	0.050	0.916	0.693
	Managerial options	0.00000024	0.000000033	0.00000047	0.00000102
		0.417	0.280	0.420	0.810
	\$Options/MV	0.48836**	0.4491*	−0.28822	−6.37161
		0.038	0.060	0.859	0.174
	Number directors	−0.000407	−0.000250	−0.0000078	0.01199
		0.627	0.780	0.997	0.138
	% inside directors	−0.00519	−0.02685	−0.04726	0.46121**
		0.792	0.210	0.448	0.013
Control variables	Director salary	−0.000125	−0.0000072	0.000379	0.00153
		0.487	0.970	0.458	0.224
	CEO = CHAIRMAN	−0.0567***	−0.0597***	0.10485	0.27436
		0.009	0.005	0.128	0.291
	Business	−0.00578	−0.00397	0.02445	0.09381
		0.703	0.800	0.102	0.120
	Individual	−0.00257	0.00021		0.0086
		0.868	0.989		0.884
	Shareholder	0.06777***	0.06667***	0.03362	
		0.003	0.000	0.533	
	Product liability	0.01932	0.01652	0.0696	0.19806
		0.113	0.183	0.156	0.105
	Antitrust	0.01589	0.01798	0.04906	0.19732**
		0.236	0.196	0.321	0.066
	Labor	0.01595	0.01204	0.07289	0.23991*
		0.223	0.366	0.148	0.085
	Patent	0.01683	0.0148	0.03471	0.15283*
		0.157	0.223	0.463	0.058
	Z-prob	0.00047	0.00020	−0.000397	−0.01359**
		0.445	0.756	0.799	0.036
	R ²	0.089	0.099	0.080	0.500

*, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

strongly implies that the plaintiffs have a strong enough case to warrant continuing the legal action, forcing shareholders to update their beliefs regarding the likelihood of losing. To an extent, this decision also conveys to the shareholders information similar to what could be learned by the firm proceeding to trial. Because this decision may increase the expected cost of going to trial, while at the same time it conveys information to the shareholders that reduces the value of hidden information, it would be expected that shareholders might react more positively to settlements following failed motions to dismiss. Indeed, for the 94 events in my sample in which settlement did follow a failed motion, the average abnormal return is a positive (albeit insignificant) 0.40%.

To control for these events, I also run the previous regression using a sample in which all settlements that follow rejected motions to dismiss have been removed. The second column of results in Table VI shows that removing these events does not affect the fundamental relationships. The signs of the coefficients remain the same, and in all cases, the same variables are significant. In addition, CEO salary becomes significant following the removal of these events from the sample.

The strong relationships that exist at the announcements of settlements stand in marked contrast to the results of the same regression model using the abnormal returns around the announcement of a judgment. The last two columns of Table VI show the results of the same regression model when the abnormal returns following a court judgment are used. None of the independent variables explain any significant amount of variation in the market's reaction to news of the defendant firm winning a lawsuit. When the firm loses litigation, there is a positive and significant relationship between the percentage of inside directors on the board and the market's reaction. But this is the only corporate governance variable that seems to have any relationship.

While the previous results demonstrate that there is a strong relationship between the market's reaction to settlements and various proxies for agency conflicts between management and shareholders, they do not tell us whether the reaction to settlements is significantly different from the market's reaction to judgments. By introducing interaction variables into the model, we are able to estimate what the marginal cost or benefit of settlements is for shareholders in firms with these characteristics, in comparison to what would be expected on average if the case went to trial. Table VII shows the results of a model that includes the previous explanatory variables, as well as interaction variables if the event was a settlement. Specifically, each independent variable is multiplied by a dummy variable that takes the value of 1 if the case was settled and 0 otherwise. Again, control variables are included in the model, but are not interacted with the settlement dummy.

While the resulting marginal effects on the market's reaction to settlements are consistent with the predicted signs for measures of free cash flow, ownership structure, and managerial compensation, there is only one variable that appears to make a significant difference in the market's reaction to settlement: whether the same person holds both the CEO and the chairman positions.

Table VII
**Marginal Impact of Proxies for Agency Conflicts on the Market's
Reaction to Settlements**

Listed are the results of a model measuring the impact of various independent variables on the market's reaction to settlements versus the impact they have on the market's reaction when the case is resolved by a judgment. The coefficients are the results of a regression of the cumulative abnormal return around the date of resolution on the listed independent variables; each independent variable multiplied by a dummy variable indicating 1 if the firm settled and 0 if the case is decided by a judgment; and control variables for type of litigation, plaintiff type, and a measure of the proximity to bankruptcy. 5% blockholders refers to the percent of the firm held by shareholders that possess more than 5% of the outstanding shares. Insider shares is the percentage of the firm held by its management, and free cash flow is the operating income of the firm minus changes in net working capital, capital expenditures, and tax payments. Debt/equity is the book value of debt divided by the market value of equity, while earnings/price is the inverse of the market price of the stock divided by the firm's earnings per share. Dividends, cash, sales, and total assets are the values reported for the last quarter prior to the event date. Z-prob is Altman's Z-score, which is a measure of a firm's proximity to bankruptcy. Salary and options' data are based on the year prior to the event. Managerial options are the dollar value of shares underlying both vested and nonvested options given to the firm's top management. This value is also scaled by the market value of the firm. % inside directors is the percentage of the board of directors that also has executive positions within the firm. Director salary is the annual income paid to directors and CEO = chairman is equal to 1 if the same person holds both positions in the firm. All values are adjusted for heteroskedasticity, as specified in White (1980). The first column reports the results when all settlement events are included in the sample, while the second column gives the results using a sample that omits all settlements that followed a failed motion to dismiss.

	Interaction Coefficients	Pred	Full Sample (1)		Failed Motion (2)	
			Settlement	Prob.	Settlement	Prob.
Cash flows	Free cash flow	—	−0.0000028	0.616	−0.0000025	0.659
	Debt/equity	+	0.000928	0.442	0.001020	0.404
	Dividend/sales	+	0.30310	0.184	0.31937	0.170
Info. opacity	Total assets	+	0.00000042	0.382	0.00000034	0.488
Ownership	5% blockholders	+	0.0000147	0.958	−0.0000104	0.971
	Insider shares	+	0.000519	0.198	0.000580	0.155
Governance	CEO salary	—	−0.00000093	0.351	−0.00000113	0.261
	Managerial options	+	0.00000005	0.925	0.00000015	0.793
	\$Options/MV	+	1.83711	0.137	1.80371	0.144
	Number directors	—	0.001555	0.402	0.001860	0.322
	% inside directors	—	0.0257889	0.592	0.00542	0.912
	Director salary	+	−0.0005163	0.209	−0.0004141	0.321
	CEO = CHAIRMAN	—	−0.04028*	0.093	−0.04112*	0.090
Control variables	Business		0.00121	0.934	0.00322	0.833
	Individual		−0.0033	0.827	−0.00121	0.938
	Shareholder		0.04926***	0.004	0.04852***	0.005
	Product liability		0.02881**	0.018	0.02714**	0.030
	Antitrust		0.0205	0.119	0.0218	0.110
	Labor		0.0271**	0.037	0.0247*	0.064
	Patent		0.0192	0.105	0.0175	0.150
	Z-prob		0.0006*	0.099	0.0003*	0.055
	Constant		0.00128	0.965	0.00279	0.925
	R ²			0.066		0.071

*, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Again, the results remain similar when using a sample in which settlements that followed failed motions to dismiss have been removed.

Overall, these results are consistent with the hypothesis that the market's negative reaction to settlements is related to potential agency conflicts within the firm and the possibility that managers may overpay in a settlement if it protects their personal benefits. Because of this, shareholders may prefer that firms with high agency costs go to trial rather than settle.

I then examine the relationship between the timing of settlements and the various measures of agency conflicts within the firm. Table VIII reports the results of a regression of the length of time between the filing and the settlement of a lawsuit on the independent variables listed above. The second column of Table VIII lists the predicted outcomes of this regression if the second hypothesis is correct and firms with greater agency conflicts tend to settle earlier than those firms without these conflicts. Consistent with the hypothesis, there is a significant relationship between the strength of corporate governance and the timing of settlements. Firms tend to settle much sooner when the CEO and the chairman of the board positions are held by the same person, as well as when there is a higher percentage of inside directors on the board. There is a significantly positive relationship between the time to settlement and the compensation for members of the board of directors, as well as a positive relationship with the total dollar value of options given to the manager. However, the latter result could indicate options align the interests of managers and shareholders, or it could also be explained through managers benefiting from the higher uncertainty that litigation brings, which leads them to put off settlement. Other variables, such as insider and 5% shareholdings, CEO salary, and the size of the board all have the predicted sign but are not significantly different from zero.

Contrary to the hypothesis, there is a significantly positive relationship between the free cash flow of a firm and the time to settlement. Coupled with the negative (but insignificant) relationship between the payments of dividends and time to settlement, these results argue against potential over-investment playing a role in determining the timing of a settlement. However, this result is consistent with firms with greater cash resources being more willing to go to trial, as well as with managers with free cash flows having more incentive to avoid settlement for as long as possible if it might constrain their ability to use them.

Used as a measure of information opacity, the coefficient on total assets is the opposite of what was predicted, although insignificant. This is mainly due to the speed of settlement for those events in which the government is the plaintiff, with large firms settling significantly faster, as shown in Table III. When the same regression is run without the lawsuits in which the government is the plaintiff, the coefficient on total assets is positive, albeit still insignificant. All other variables retain their sign and significance when these lawsuits with the government as plaintiff are removed.

Similar results were also obtained when using a sample in which all settlements that followed a failed motion to dismiss are removed. All coefficients

Table VIII
Results of Test for Relationship between Potential Agency Conflicts
and Time to Settlement

Results of a regression of the number of days between the filing and settlement of litigation on the listed independent variables. 5% blockholders refers to the percent of the firm held by shareholders that possess more than 5% of the outstanding shares. Insider shares is the percentage of the firm held by its management, and free cash flow is the operating income of the firm minus changes in net working capital, capital expenditures, and tax payments. Debt/equity is the book value of debt divided by the market value of equity, while earnings/price is the inverse of the market price of the stock divided by the firm's earnings per share. Dividends, cash, sales, and total assets are the values reported for the last quarter prior to the event date. Z-prob is Altman's Z-score, which is a measure of a firm's proximity to bankruptcy. Salary and options' data are based on the year prior to the event. Managerial options are the dollar value of shares underlying both vested and nonvested options given to the firm's top management. This value is also scaled by the market value of the firm. % inside directors is the percentage of the board of directors that also has executive positions within the firm. Director salary is the annual income paid to directors, and CEO = chairman is equal to 1 if the same person holds both positions in the firm. All values are adjusted for heteroskedasticity as specified in White (1980). The first column reports the results when all settlement events are included in the sample, while the second column gives the results using a sample that omits all settlements that followed a failed motion to dismiss.

Variable	Pred	Full Sample (1)		Failed Motion (2)	
		Settlement	Prob.	Settlement	Prob.
Constant		450.248	0.022	558.474	0.004
Cash flows	Free cash flow	—	0.0311*	0.069	0.0273
	Debt/equity	+	3.622	0.312	2.290
	Dividend/sales	+	−751.083	0.256	−1207.72*
Info. opacity	Total assets	+	−0.00017	0.902	−0.00041
Ownership	5% blockholders	+	0.7063	0.395	0.6530
	Insider shares	+	0.2905	0.781	0.5777
Governance	CEO salary	—	−0.0045	0.183	−0.0032
	Managerial options	+	0.0049**	0.011	0.0037*
	\$Options/MV	+	1593.525	0.294	1953.481
	Number directors	—	−4.638	0.390	−0.3412
	% inside directors	—	−210.669*	0.095	−281.085**
	Director salary	+	2.864**	0.014	2.154*
	CEO = CHAIRMAN	—	−377.902***	0.007	−389.149***
Control variables	Business		395.553***	0.000	278.376***
	Individual		364.703***	0.000	263.423***
	Shareholder		−39.984	0.740	−30.073
	Product liability		−0.554	0.994	−16.008
	Antitrust		21.859	0.797	−46.029
	Labor		−82.154	0.324	−104.799
	Patent		−81.977	0.275	−88.812
	Z-prob		−0.587	0.882	0.717
	R ²			0.104	0.097

*, **, *** indicate significance at the 10%, 5%, and 1% levels, respectively.

retain the same sign, although the coefficient on the dividend to sales ratio becomes significant, while free cash flow is not. Again, this is consistent with firms with more resources being more willing to fight in litigation.

Certainly, other factors have an impact on how the market views the settlement of litigation. Cornell (1990) shows that litigation creates a series of real

options for the plaintiff, increasing the value of litigation beyond what would be found using a discounted cash flow analysis. Therefore, an alternative explanation for the negative reaction to settlements may be that the defendant firms are simply paying a higher amount in settlement in order to compensate the plaintiff for the value of these real options. Another implication is that defendants should settle right before the trial when the value of the real options is at its lowest. The results of my event study actually support this explanation, in that the market's reaction to settlements is less negative as the time between filing and resolution increases. However, even if this explanation contributes to a portion of the negative reaction on average to settlements, it is unable to explain the cross-sectional results of this paper.

A final factor that may affect results is the role of insurance in the manager's decision to settle. Managers may be willing to pay more in a settlement to ensure that the firm's insurance bears the total cost of litigation, rather than going to trial, where a judgment may be handed down that includes penalties beyond the firm's insurance coverage. However, if this is the case, then shareholders do not directly bear the cost of litigation and should view settlement as good news. On the contrary, we find that settlement is regarded as bad news on average. Second, if the above motivation is correct, it should bias all managers toward settlement and the market's reaction should be the same for all firms. On the contrary, we find cross-sectional variation across settlement events. The market reacts more negatively to settlements by bad managers as opposed to those by good managers. As in the real options' explanation, insurance may be a contributory factor, but it does not eliminate the role of agency conflicts in increasing the cost of litigation.

V. Conclusion

Based on a large sample of events, I find that there is a negative market reaction to settlements and that firms that settle underperform for up to a year following the resolution of the lawsuit, in comparison to other firms that continue with the litigation process until a judgment is received. Clearly, it does not take a year for the market to react to the initial event; so, this pattern might indicate that firms that settle could have structural inefficiencies that lead them to settle litigation suboptimally, as well as perform poorly following litigation. I attribute these inefficiencies to agency conflicts between shareholders and management and test to see whether agency conflicts affect the timing of settlements and whether the market's reaction to a settlement is affected by potential agency conflicts within the firm.

The results of this paper indicate that there is a strong relationship between various measures of agency conflicts within the firm and the market's reaction to settlements. The initial reaction is more positive when management holds a larger portion of the firm's equity and when more of the firm's equity is held by large blockholders. A more positive reaction is also related to the firm paying dividends, holding a larger portion of debt in its capital structure, and aligning management's incentives with shareholders through the granting of options as part of the manager's compensation. However, the initial reaction

is significantly more negative when the CEO is also the chairman, when there are higher fixed salaries for the CEO, and when the firm has higher levels of free cash flow.

The timing of the settlement is also affected by the strength of corporate governance, with settlements occurring significantly sooner in firms that have a higher percentage of insiders on the board, larger boards, and the same person serving as CEO and chairman. I attribute this to the fact that all these variables measure the level of monitoring the management of the firm receives and that firms with less monitoring of managers prefer to settle earlier in the process to protect managers. On the other hand, firms with high levels of free cash flow settle later in the process, which may reflect the fact that management is better able to wait out a plaintiff when the firm has more resources to pay for the longer litigation.

The results of this paper imply that for firms with higher agency conflicts between shareholders and management, shareholders prefer that the firms go to trial where the outcome is less likely to be manipulated by management. This preference is not necessarily based on whether the firm is innocent or guilty, but rather on to what degree management can be trusted to act on the shareholders' behalf. The fact that firms with weaker corporate governance settle earlier in the litigation process also implies that corporate litigation does help reduce information asymmetry between management and the shareholders of the firm, providing a benefit to shareholders despite the cost of litigation.

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