

Derivative Lawsuits as a Corporate Governance Mechanism: Empirical Evidence on Board Changes Surrounding Filings

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Abstract

Legal rights of investors have been recognized as an essential component of corporate governance. We assess the efficacy of these rights by examining board changes surrounding the filings of shareholder derivative lawsuits. We find that the incidence of derivative lawsuits is higher for firms with a greater likelihood of agency conflicts. We also find that derivative lawsuits are associated with significant improvements in the boards of directors. In particular, the proportion of outside representation on the board of directors increases. There is also some evidence that other board characteristics change favorably. These findings suggest that shareholder derivative lawsuits are not frivolous, as is often claimed, but rather that they can serve as an effective corporate governance mechanism.

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I. Introduction

The legal protection of shareholders' rights has been recognized as an essential element of corporate governance (Shleifer and Vishny, 1997). In particular, the law provides shareholders with the opportunity to bring lawsuits against managers, when they feel that managers have inappropriately exploited their positions of control. Indeed, there is a considerable literature dealing with the incentives and effects of class action lawsuits (Coffee, 1986, Fields, 1990, Romano, 1991, Hertz and Smith, 1993, Francis, Philbrick and Schipper, 1994, Beck and Bhagat, 1997, Trueman, 1997, Bhagat, Brickley, and Coles, 1994, 1998). There is also evidence of corporate governance changes around certain lawsuits. Jones and Weingram (1996), Strahan (1998), Agrawal, Jaffe, and Karpoff (1999), and Niehaus and Roth (1999), for example, study CEO turnover around filings of fraud charges (with differing conclusions). In this paper, we assess the effect of legal actions by examining changes in corporate governance surrounding the filings of shareholder derivative lawsuits.

Shareholder derivative lawsuits, a special subset of shareholder suits, have been largely ignored in the literature on corporate governance. Nevertheless, shareholder derivative lawsuits are better suited than the more frequently studied class action suits to examine the role of courts in effecting corporate governance. Derivative lawsuits are brought on behalf of the corporation as a whole, representing in effect the welfare of all shareholders. In contrast, class action lawsuits usually have just a subset of shareholders as parties to the lawsuit, and only these shareholders receive the monetary rewards that may follow from the lawsuit. For example, new shareholders who

bought shares during a particular period (usually called the “class period”) may form a plaintiff class, with interests that are possibly in conflict with those of other shareholders.

In a derivative lawsuit, the plaintiff shareholders theoretically act in the interests of all shareholders, thus employing a legal mechanism to address agency problems that exist between shareholders and management. Romano (1991) refers to this type of litigation as a “stopgap” measure in the governance arsenal available to shareholders since these lawsuits do not typically go so far as to seek a change in corporate control. Others, however, have conferred on it much more importance, even calling it “the chief regulator of corporate management” (e.g., *Cohen vs. Beneficial Industries Loan Corp.*). Similarly, Solomon and Palmiter (1999) claim that “derivative litigation breaks the stranglehold the board would otherwise hold over fiduciary accountability”.

Despite their purported role in corporate governance, the prevailing opinion in the legal literature concerning derivative lawsuits is that they primarily serve the interests of the plaintiff’s bar. Extending as far back as the 1940s, a common theme among researchers has been that most derivative lawsuits are frivolous and motivated primarily by the settlement fees that the plaintiff’s attorneys hope to extract (Wood, 1944; Kennedy, 1977; Jones, 1980a, b; Coffee and Schwartz, 1981; Banoff and DuVall, 1984; Garth, Nagel, and Plager, 1985; Fischel and Bradley, 1986; Romano, 1991). Indeed, consistent with this view, prior researchers find that plaintiffs win relatively few derivative lawsuits and there are few stipulations regarding corporate governance in settlement agreements or judgments made in favor of the plaintiffs. Indeed, Romano (1991) suggests that any structural changes that are included in settlements due to the need to document a record and justify fee awards. The corporate governance effects, however, might not lie explicitly in the judgments or settlement agreements. The derivative lawsuit might serve its purpose by publicizing the firm’s agency problems, thus leading the firm to institute governance changes not directly captured in the litigation process. Schwartz (1986) contends that derivative lawsuits might act as deterrents, rather

than as mechanisms for shareholders to seek compensation for management wrongdoing. In this view, a derivative lawsuit elicits corrective behavior from management since it recognizes that shareholder attention is now focused on its actions. Thus, Romano (1991) and Bhagat, Brickley, and Coles (1987) suggest that shareholder lawsuits have deterrence value, even if damages are fully insured and many cases are settled, because they identify managers who violate their duties, punishment is then meted out by the labor market or the market for corporate control. Nevertheless, because of a strong emphasis on settlement fees, explicit settlement terms, and other procedural matters, the prior literature has largely ignored the corporate governance effects of derivative lawsuits.

Although we also document various settlement and procedural aspects of 215 derivative lawsuits against 174 publicly-traded U.S. firms over the period, 1982-1999, we are primarily concerned with corporate governance effects. We predict that firms with greater corporate governance problems are more likely to be the targets of derivative lawsuits. Most importantly, we investigate changes in corporate governance mechanisms over the seven-year period surrounding lawsuit filings. We focus on changes in characteristics of boards of directors for two reasons. One, derivative lawsuits invoke the personal liability of the directors and officers of the firm. Two, there is a substantial literature in finance that emphasizes the importance of boards in the corporate governance of firms (Baysinger and Butler, 1985; Weisbach, 1988; Kaplan and Reishus, 1990; Rosenstein and Wyatt, 1990; Byrd and Hickman, 1992; Brickley, Coles, and Terry, 1994; Cotter, Shivdasani and Zenner, 1997, Yermack, 1996, Vafeas, 1999, MacAvoy and Millstein, 1999, Bhagat and Black, 2000, and Wu, 2000). In particular, this literature claims that (1) greater outside representation, and (2) smaller boards provide superior corporate governance. In addition to these two salient claims in the literature, we consider the (3) departure rate of board members, and (4) whether there is a greater concentration of management power with the CEO and Chairman of the

board positions being held by the same individual (“duality” of positions). We interpret higher board turnover to be beneficial to the corporate governance of the firm if it comes following a finding of wrong doing by management, although it could arguably be the result of voluntary departures by board members as they disassociate themselves from the firm to save their reputations. In general, our findings support the view that derivative lawsuits improve the corporate governance of the firm, particularly in terms of bringing outside representation to the board.

We organize the remainder of the paper as follows. In section 2, we discuss the nature of derivative lawsuits and the controversy surrounding them. In section 3, we formulate two hypotheses that address the corporate governance effects of derivative lawsuits. We introduce our sample in section 4 and provide various descriptive statistics. We provide evidence on the corporate governance effects of derivative lawsuits in section 5. In section 6, we provide our concluding remarks.

II. Derivative Lawsuits: Improved Corporate Governance or Figurehead Plaintiffs?

An important source of shareholder rights is the state-law fiduciary concept. Both officers and directors are considered fiduciaries. Directors and officers are fiduciaries to the corporation for the purpose of maximizing shareholder value. State law allows shareholders to initiate judicial proceedings to vindicate the shareholder interests protected by the concept of fiduciary duty. These proceedings fall into one of two classifications--direct suits or derivative suits, with the latter being our subject of study.

Shareholders can bring direct suits to remedy a wrong to a particular shareholder or subset of shareholders. For example, an allegation that management wrongfully froze out some shareholders from a share of corporate profits would be a wrong that could be pursued in a direct action (class action). Any monetary recovery will flow directly to the shareholders involved. In contrast,

derivative suits remedy a wrong to all of the shareholders. For example, an allegation that directors mismanaged the company and caused a general decline in the company's value is a wrong that could be pursued in a derivative action. The suit is called "derivative" because the law treats the shareholder as suing on behalf of the firm. In other words, the shareholder is said to be asserting his rights "derivatively." Consequently, any monetary recovery will flow to the firm, meaning the benefits accrue to all shareholders. The pro-rata nature of the shareholders' recovery and special procedural hurdles for derivative suits mean shareholders will pursue derivative suits only when the wrong is one that is general to the shareholders as a whole and cannot be brought as a direct suit.¹

Because plaintiff shareholders receive only a pro-rata share of any award, derivative suits raise free-rider issues and concerns. Individual shareholders often would seem to lack sufficient economic incentive to bring a derivative suit. Derivative lawsuits are, nevertheless, made possible because of the incentives for plaintiff's counsel. A winning plaintiff can recover attorney's fees in a derivative lawsuit. Also, management often has strong incentives to settle because winning defendants typically cannot recover their attorney's fees and the nature of most liability insurance policies.

State corporate laws generally prevent the firm from reimbursing directors and officers for payments in settlements or judgments, with reimbursement limited to legal expenses. (e.g., Del. Gen. Corp. L. § 145(b)) In all states, however, firms are permitted to buy liability insurance for directors and officers to cover any judgments or settlements against them (e.g., Del. Gen. Corp. L. § 145(g)). There is one important caveat, however. Typically, insurance policies do not cover judgments in which there is a determination of management dishonesty or intentional misconduct.

¹ In most states, before a shareholder can proceed with a derivative action, the shareholder must show that the board of directors is unwilling to proceed with the lawsuit. In legal jargon, the shareholder must demonstrate that a demand to proceed with the lawsuit has been wrongfully refused or that making such a demand would be futile. (E.g., Del. Chancery Ct. Rule 23.1; Fed. Rule of Civil Procedure, 23.1). Some states also require their courts to give deference to the recommendation to dismiss a derivative lawsuit if made by a committee of independent directors, called a special litigation committee. (E.g., *Zapata Corp. v. Maldonado*, 430 A.2d 779 (Del. Sup. Ct. 1981).

Consequently, many settlements are structured such that management does not admit to dishonesty and thereby is able to retain insurance coverage. Individual defendants often prefer to settle rather than risk the expenses of personal liability in case of an unfavorable judgment. Similarly, the plaintiffs can still earn substantial fees by settling rather than risk losing the case later. State law usually requires that the court approve any settlement in a derivative action, meaning that shareholders can expect at least some measure of corrective relief in the form of monetary payment or corporate governance changes or both. Because insurance policies routinely cover the expenses of both parties, the real cost is ultimately spread across all the shareholders through higher insurance rates charged to the firm.²

Derivative lawsuits are not without their critics. Plaintiffs' attorneys and shareholders have diverging interests in that the attorneys gain from possible fee awards and have incentives for collusive settlements. This conflict has been noted in the prior literature (Coffee and Schwartz, 1981). With plaintiffs' attorneys driven by settlement fees, the suing shareholders can easily be transformed into figurehead plaintiffs. If shareholder plaintiffs become figureheads and attorneys are motivated only by fees, overall shareholder interests might be lost in derivative litigation. If, however, we view attorneys' fees as simply "finders' fees" for identifying corporate governance problems, we should not look for explicit benefits to accrue to the firm as a result of the suit. Rather, the benefits may be indirect, as the firm copes with the public criticism of its corporate management. The firm might undertake corrective action even in the absence of a legal mandate to do so. It might even be argued that such an arrangement is superior to externally enforced specific corrective measures that might be inappropriate or more limited in scope.

² Not surprisingly, the market for D&O insurance prices firm-specific liability risk. A survey of D&O insurance practices by Knepper and Bailey (1998) reveals that the largest premium increases were in the computer and technology sectors, industries plagued by numerous securities actions.

Thus, two competing views emerge. The first view is that derivative lawsuits are based on frivolous charges, with attorneys' fees as the underlying motivation. The other view is that derivative lawsuits help to pinpoint corporate governance problems within the firm, which the firm must subsequently address. These two views are competing in the sense that findings of meaningful changes in corporate governance associated with derivative lawsuits would constitute evidence inconsistent with the view that such lawsuits are frivolous.

III. Hypotheses Regarding the Corporate Governance Effects of Derivative Litigation

A. Incidence of Shareholder Derivative Lawsuits

Central to the notion that derivative lawsuits seek improvements in corporate governance is the premise that targeted firms do indeed suffer from agency problems. We formalize this with the following *Incidence of Derivative Lawsuits Hypothesis*: firms with greater ex ante agency problems are more likely to be the targets of shareholder derivative lawsuits.

The mere filing of such a suit does not assure any benefits to the corporation, unless it leads to meaningful changes. Indeed, it could be argued that well-meaning plaintiff shareholders ultimately lose because their attorneys are interested in fees rather than any substantive changes in the firm. While the case might publicize management problems, this does not imply that the firm will actually undertake corrective actions. Consequently, we develop in our second hypothesis the link between the filing of a derivative lawsuit and the observed changes in corporate governance.

B. Improved Corporate Governance Hypothesis

In contrast to the view that shareholder derivative lawsuits are frivolous and motivated by the desire to extract attorneys' fees, the alternative is that derivative lawsuits are useful because of the benefits they produce in the firm's governance structure. In this view, the derivative suit is a form of

substitute monitoring.³ Consequently, we formulate the following *Improved Corporate Governance Hypothesis*: The incidence of shareholder suits is associated with corrective actions leading to improvements in the corporate governance of the firm.

In this paper, we study improvements in corporate governance through changes in the board of directors. In doing so, we adopt a conservative approach when we try to infer the corporate governance impact of derivative lawsuits. Derivative lawsuits could well bring about other beneficial changes in corporate governance, with no impact on boards.

IV. Sample Construction and Characteristics

A. Sample Construction

We examine derivative suits in the U.S. over the period 1982 to 1999. We begin our sample in 1982 because of the difficulties in obtaining corporate governance data prior to 1979. We follow a lawsuit for five years after it is filed to permit sufficient time for resolution and to obtain details regarding judgments or settlements. Thus the filing must occur by 1994 to be included in our sample. For announcement dates of filings of derivative lawsuits, we use the *Wall Street Journal* and *Lexis-Nexis* databases. There have been no recent significant developments in the law regarding derivative litigation, so our findings are relevant to a current understanding of the impact of this kind of legal action.

Media coverage generally describes the lawsuit as a “shareholder suit” or uses similar terms that could indicate either a derivative suit or a class action suit by shareholders. Therefore, to avoid class actions, we also examine the 10-K and proxy filings of firms identified as having derivative suits. Because of our reliance on corporate 10-K and proxy statements, we use the firm’s own description of the lawsuit to select litigation that we can unambiguously identify as derivative in

³ This is the classic legal view of the derivative lawsuit. Solomon and Palmiter (1999) describe derivative litigation as the primary means by which shareholders hold directors, officers and other fiduciaries accountable.

nature. Through these sources, we are also able to categorize lawsuits according to the nature of the charges brought by shareholders at the time of filing.

Compact Disclosure is used to obtain the equity ownership of corporate insiders and block holders. To analyze the firm's stock price reaction, we use the *Center for Research on Security Prices* (CRSP) equity returns database. For other firm-related data, such as accounting information, we use the *Compustat* tapes. Finally, corporate governance information is hand-collected from the proxy statements of the defendant firms for each of the three years prior, the three years following, as well as the year in which the lawsuit was filed, resulting in a total of seven years. Meeting all our data requirements, we are able to identify a total of 215 derivative lawsuits filed against 174 publicly traded firms.

Throughout the paper, we compare our sample firms against a sample of matched firms (controls). For each sample firm, we begin by identifying from *Compustat* three potential non-sued (either derivative or class action) matches from the four-digit SIC code industry of the sample firm with a firm closest in size (total book assets) as the best match (match 1) and the next two closest firms as matches 2 and 3. We adopt this procedure because of the difficulties in obtaining data on corporate governance (proxy statements) for the sample and control firms. To reduce problems resulting from the unavailability of proxy statements, we collect only five years of proxy data for the control firms. This permits us to compare board changes between sample and control firms for both a four-year and a five-year period, (0, +3) and (-1, +3), respectively, where year 0 is the year of filing of a derivative lawsuit for a sample firm. Even so, proxy data are found for only 112 (match 1), 43 (match 2), and 13 (match 3) firms. Thus, ultimately we choose one match for each sample firm, which in 112 cases it is the firm closest in size, in 43 cases it is the firm second closest in size, and in 13 cases it is the third closest in size among those firms possessing the same four-digit SIC

code. This happens because board data are not available for the best matches. Based on the availability of individual data items, sample sizes vary across tests reported below.

B. Sample Characteristics

Table 1 contains the yearly distribution of filings of shareholder suits. In the early years of our sample through the mid-1980s, we find few filings of derivative lawsuits, possibly because our sources of information are not as comprehensive as in later years. The number of filings increases from the mid-1980s until it peaks with a maximum of 42 in 1990, consistent with the easing of the liability insurance crisis in the late 1980s. The filings then begin to fall off in 1991 and decline to 13 in the last year of our sample.

[Insert Table 1]

Table 1 also provides information on the exchange listings of the firms against which shareholders bring derivative lawsuits. The largest number of lawsuits is brought against NYSE-listed firms, although the table shows that there are more firms listed on the NASDAQ in every year of our sample. This result is consistent with Jones (1980a, b) and Romano (1991) that larger firms are more frequently the targets of shareholder lawsuits, possibly because their greater capitalization makes them better targets for attorneys seeking attractive settlement terms.

Additional details about the sample are provided in Table 2. We observe in Panel A that among those firms with shareholder lawsuits, NYSE-listed firms have more lawsuits per firm than NASDAQ-listed (OTC) firms. But Panel B shows that multiple lawsuits are not a pervasive phenomenon. Indeed, over 86% of our sample of derivative lawsuits has only one derivative action per firm.

[Insert Table 2]

Panel C of Table 2 contains information on the nature of the charges brought against our sample firms. Given the reluctance courts have in challenging business decisions, one might initially

find it surprising that the most common category of charges is for breach of the duty of care (41.3% of the sample). Such a result, however, might be an artifact of the time period spanned by our sample. Most of our sample occurs at the high-water mark for duty of care suits, coming after the Delaware Supreme Court's 1985 decision in *Smith v. Van Gorkom* (488 A.2d 858, 1985). Many litigators interpreted the *Van Gorkom* decision as an indication that the Delaware Supreme Court was poised to expand director liability in duty of care suits, thus encouraging the filings of such cases. The next most common charge involves duty of loyalty lawsuits (26.5%) followed by suits charging the mishandling of information (18.1%).

Panel D provides a decomposition of the sample according to the industry classification of the defendant firms. More firms are drawn from heavy businesses with tangible assets (57 from manufacturing and 27 from transportation), than from businesses with unobservable assets (38 from finance/insurance and 30 from services). From one perspective, this is unexpected. Corporate governance problems (or agency problems) are more likely among firms with unobservable assets where it is more difficult to monitor the activities of managers. On the other hand, manufacturing firms tend to be larger and might make better targets for plaintiffs.

In Table 3, selected characteristics of the sample firms are compared with matched firms from their industry using accounting data from *Compustat* files. The sample firms are larger than competitor firms in terms of mean total assets, sales, and market value of equity. It should not be surprising that size differences emerge despite our matching procedure for identifying controls, since larger firms are often targets of lawsuits because they are perceived as having more resources to provide recovery. There is some evidence that sample firms underperform relative to control firms if one looks at the median differences in ROA, which is consistent with the filings of lawsuits. This lower profitability may in turn explain the somewhat lower levels of median dividends, free cash flows, and the recent sales growth of our sample firms.

[Insert Table 3]

Table 4 profiles the major elements of the firm's governance structure in the year of the derivative lawsuit filing. Specifically, we examine board size and composition, and the equity ownership held by insiders and external investors. We find that the mean (median) size of the board of directors is 10.45 (10), which is larger than that for control firms with the mean (median) size of 9.15 (8). The academic literature regarding corporate boards of directors suggests that smaller boards are more effective. Comparing the median number of internal directors to the median board size, we find that 30% of the directors are internal, which is the same as that for the control sample. Also, it is similar to what Yermack (1996) reports for a general sample (33%). In our sample, directors and officers own a mean (median) equity percentage of 16.9% (8.4%) while the corresponding values for control firms are 18.1% (9.9%). It is not obvious that the smaller equity ownership stakes held by officers and directors in our sample implies a poorer alignment of interests between shareholders and management. The smaller equity stakes could simply reflect their larger size, and the consequently higher costs associated with a lack of diversification for the managers of these firms (Demsetz and Lehn, 1985). Ownership by CEO, institutions, and block holders follow a similar pattern.

[Insert Table 4]

For descriptive purposes, in Table 4 and later, we also distinguish derivative lawsuits by the nature of alleged misconduct or type of situation which generates the lawsuit. Although they are potentially overlapping, we assign our observations into one of the following five categories: merger and acquisition, duty of loyalty, duty of care, informational duties, and miscellaneous/nonclassifiable. Shareholder derivative lawsuits surrounding a merger and acquisition might represent a tactical response in a takeover battle. Duty of loyalty allegations indicate that the plaintiff believes the firm's managers have not acted in good faith and have

furthered their own interests at the expense of the corporation. In contrast, duty of care allegations relate to the management's competence in running the corporation. Because courts are reluctant to second-guess the business decisions of managers, plaintiffs have a difficult challenge in winning duty of care lawsuits. According to Table 4, the median size of boards for firms with lawsuits alleging problems with duty of loyalty is 9, which is smaller than that for other sample firms. There is no difference in the percentage of internal directors. Directors and officers for firms with these lawsuits own a median 12.0% of the firm, which is higher than that for the full sample or control groups.

Table 5 presents a decomposition of the outcome according to the type of charges brought by plaintiff shareholders. Suits with a judgment against the plaintiff are those where such a judgment is actually pronounced as well as dismissals, procedural terminations, and withdrawals. There are 39 such lawsuits, comprising about 18% of the sample. In another 136 cases or 63% of the sample, the suits had a judgment against the defendant or a settlement, including the payment of attorney's fees. The remaining 19% of the sample covers settlements that are not disclosed in the firms' securities filings, bankruptcies, and cases where we are unable to determine the outcome. While as expected, management wins more duty of care cases (21 cases compared to the next highest number, 10, for duty of loyalty), it remains surprising that this is also the category in which they lost the most cases.

Most notably, shareholder plaintiffs did well compared to the outcomes reported for combined class and derivative action samples used by prior researchers. In 43% of the cases plaintiff shareholders received monetary or non-monetary relief. When cases are adjudged in plaintiffs' favor or settle (136 cases), the plaintiffs frequently (68% of the cases) realize tangible gains. Most importantly, there are 43 cases (20% of the total of 215 lawsuits, or 32% of the cases terminated in favor of them) where plaintiffs obtain non-monetary relief, potentially bringing about corporate governance changes.

[Insert Table 5]

In Table 6, we report abnormal stock returns at the time of suit filing. This approach is used by other researchers to assess the impact of derivative lawsuits (Fischel and Bradley, 1986). The portfolio mean abnormal return is obtained using the market model with daily returns based on the procedure described by Brown and Warner (1985). The sample size varies depending on whether we are able to identify the exact date in the *Wall Street Journal* or *Lexis-Nexis* as well as the availability of daily return data. For the overall sample, the stock price reaction is -1.9% (significant at the 1% level). This reaction is not unambiguously interpretable. The reaction depends on the anticipated economic impact of the lawsuit, and the extent to which the lawsuit is a surprise. Even if there are large agency problems, the stock price reaction might be small if these problems are well -known and the lawsuit is anticipated. Furthermore, even if the lawsuit is a complete surprise, we can not attribute the negative reaction to a revelation of agency problems. The negative reaction could also arise due to losses directly related to the lawsuit itself, such as lost time or settlement payments, and unrelated to agency problems.

[Insert Table 6]

Also note that the duty of care cases elicit no significant reaction, while the duty of loyalty cases have a 4% drop in share prices associated with them during the three days surrounding the suit filing. The divergence might reflect the uncertainty associated with duty-of-care challenges to managerial discretion and the deference courts provide to the business judgment rule. Finally, it should be noted that any observed stock price reactions are not independent of the extent of agency problems and the nature of anticipated changes in corporate governance.

V. Results From Testing Hypotheses Regarding Derivative Lawsuits

In this section, we present results from testing the Incidence of Derivative Lawsuits Hypothesis and the Corporate Governance Improvements Hypothesis proposed in section III.

A. The Incidence of Derivative Lawsuits Hypothesis

According to the ‘incidence of derivative lawsuits hypothesis’, we expect that firms with greater ex ante agency problems will be targets of shareholder derivative lawsuits. Table 7 presents the results from a set of logistic regressions for the probability of a firm being the target of derivative litigation. Other unreported specifications of the logistic regression, dropping some variables, do not qualitatively differ in their conclusions. The dependent variable assumes a value of one if the firm is sued, otherwise it is zero. The sample consists of the 174 sample firms plus the matched non-sued firms. The independent variables capture characteristics that make the firm an attractive target. We consider firm financial, ownership, and board characteristics. Table 7 contains their hypothesized signs. Strahan (1998) argues that residual agency problems are more likely to be observed in larger rather than smaller firms because the mechanisms designed to address these problems operate more effectively in smaller firms. Larger firms, however, might also be targets of lawsuits simply because they have more resources to satisfy potential recovery. This suggests that larger firms are more likely to be the targets of derivative litigation. We measure size as the log of the firm’s market value of equity. A higher market-to-book equity ratio represents a higher proportion of growth opportunities, and correspondingly a smaller fraction of assets in place. This makes managerial actions less observable and more difficult to monitor. We hypothesize that higher values of the market-to-book ratio are associated with a greater likelihood of shareholder litigation against the firm. Demsetz and Lehn (1985) contend that it more challenging to monitor managerial behavior in volatile business environments, suggesting that agency conflicts can arise under such circumstances. This implies that business risk exerts a positive influence on the likelihood of derivative lawsuits.

We measure risk as the variance of returns calculated over the 36 months preceding the suit filing date. Poor past performance might be evidence of managerial agency problems, so we predict that the likelihood of a derivative lawsuit is inversely related to the prior year's performance, where the prior year's performance is measured as the nominal stock return over the 250 days preceding the filing of the lawsuit. Higher share turnover reflects a more rapidly changing base of monitors, giving rise to greater opportunity for managerial self-dealing and consequently a higher likelihood of derivative lawsuits. It also allows managers to hide their trades. Jensen (1986) argues that free cash flow can increase opportunities for management misbehavior and over-investment, resulting in lower equity values.

[Insert Table 7]

Our final set of independent variables seeks to capture the possible incentive alignment/managerial monitoring resident within the ownership and board structure of the firm. We hypothesize that greater equity investment by block holders and institutional investors will provide additional monitoring of the firm's management and a subsequently reduced likelihood of shareholder litigation against the firm. Higher levels of insider equity ownership however might be associated with managerial entrenchment and an increase in agency conflict between managers and shareholders. Thus, whether high managerial ownership has a dominant alignment or entrenchment effect, and how it consequently affects the likelihood of a derivative lawsuit is an empirical issue. We also include two important board characteristics, size and measures of type of representation. Firms with excessively large boards or low external representation are expected to suffer poor corporate governance, and are predicted to be targets of derivative lawsuits.

We present our empirical findings from our logistic regression in Table 7. As hypothesized, we find that firm size, market-to-book ratio, return volatility, and free cash flow exert significantly positive impacts on the likelihood of litigation against the firm. Prior year's performance, as

predicted, is significantly negatively related to the likelihood of the filing of a derivative lawsuit. These findings are consistent with an agency view of derivative litigation as described in the Incidence of Derivatives Lawsuits Hypothesis. Though not significant at standard levels, all other variables also have coefficients with the correct predicted signs. Thus, a larger board size and a higher proportion of inside representation on the board increase the likelihood of a derivative action.

Relying only on statistically significant coefficients, however, it appears that shareholders pay more attention to the firm's financial proxies for agency conflict in their decisions to bring derivative lawsuits than equity ownership or board characteristics. It might be that shareholders view the ownership and board structures as mechanisms to control the agency problems reflected by the firm's financials and not reasons in themselves to take legal action.

Though Strahan (1998) studies class action lawsuits, he too hypothesizes that firms with greater ex ante agency problems will be targets of lawsuits, and uses several of the variables employed in our analysis. His results contain similarities to our findings. Strahan, too, finds that the likelihood of a lawsuit is higher for firms with larger size, greater volatility of returns, and higher trading volume. Moreover, like us, he also finds that a higher market-to-book ratio and prior performance negatively affect the probability of a lawsuit. Thus, Strahan likewise concludes that firms that suffering from agency conflict are more likely to face lawsuits.

To assess the economic importance of the independent variables in Table 7 which we determine to be statistically significant, we estimate the implied change in the probability that a firm will be sued in a derivative action for given changes in these variables. We follow Denis, Denis and Sarin (1997) and Mikkelson and Partch (1997) and assume that the variables change from their 25th percentile to their 75th percentile while all other independent variables remain constant at their mean values.

Using the mean coefficient of the log of market value across the four models of Table 7, we find that an increase in firm size from the 25th to the 75th percentile increases the probability of a derivative suit by 1.9%. We obtain comparable increases in the probability of a suit against the firm for the market-to-book ratio (1.7%), return volatility (2.1%) and free cash flow (1.7) variables. Improvement in the prior year's performance, however, reduces the probability of derivative litigation by 2.4%.^{4,5}

B. Corporate Governance Improvements Hypothesis

We undertake several separate analyses to test the Corporate Governance Improvements Hypothesis. First, we simply examine if there are corporate governance changes surrounding the filings of derivative lawsuits for our full sample. For our corporate governance variables, we focus on board characteristics. The literature on corporate governance emphasizes the importance of boards (Baysinger and Butler, 1985; Weisbach, 1988; Byrd and Hickman, 1992; Brickley, Coles, and Terry, 1994; Cotter, Shivdasani and Zenner, 1997). Board size and composition in particular are emphasized as aspects of better corporate governance (Kaplan and Reishus, 1990; Rosenstein and Wyatt, 1990; Yermack, 1996; MacAvoy and Millstein, 1999; Vafeas, 1999; Bhagat and Black, 2000; Wu, 2000). Greater outside representation on the board leads to more independence for board

⁴ These changes in probabilities can also be assessed in the context of the unconditional probability of a firm being sued in a derivative action. Over our sample period, 1982-1999 we identified only 215 qualifying suits, representing 174 different firms. Of these 174 firms, 144 of these firms were listed on the NYSE. Over our sample period, 1982-1999, the number of NYSE listings averaged 2,275. Hence the percentage of all NYSE firms sued was about 6% of the average annual number of listings.

⁵ Our method for estimating the logistic regression uses equal numbers of sued and non-sued firms. This is a common methodological approach since it requires a smaller sample than would be needed with a random sample. Our measure of the economic significance of the various logistic coefficients is then based on changes in the estimated probability of a suit as per Denis, Denis, and Sarin (1997) and Mikkelsen and Partch (1997). Palepu (1986), however, notes that this use of an equal number of event and non-event firms can bias the estimated probabilities of an event although it will not alter the relative rankings of the firms in terms of their event probabilities. But the potential for this bias is less critical to this analysis since we focus on the change in the probability of a suit as a firm moves from the 25th percentile to the 75th percentile in value for the variable of interest rather than the actual magnitude of the probability.

members, thus encouraging the board to hold management more accountable. Smaller boards are more effective and tend to respond less bureaucratically.

Higher board turnover is likely to be a favorable development in the corporate governance of a firm, if it follows a determination of agency conflict. While the literature offers relatively unambiguous interpretations of greater outside representation and smaller board size as favorable corporate governance features, the implications of higher turnover are not as clear. Instead of being a favorable development, it could also be argued that higher turnover among board members, for firms whose managers settle or lose lawsuits, is the result of voluntary departures by better board members who leave to protect their reputations. It is also possible that directors flee corporations that perform poorly in lawsuits. In other words, director turnover might not be evidence of improving corporate governance but a directorial assessment that the corporation is likely to lose shareholder derivative lawsuits in the future. Although we cannot rule out that competing hypothesis, it seems less plausible. To leave because a corporation is a poor litigator, a director would have to anticipate another lawsuit is likely. If directors leave firms because they anticipate lawsuits, it would seem just as likely that they would leave before the lawsuit is filed rather than later.

Yet another variable, without the importance attached to outside representation or board size, is whether the position of board chairman and CEO are held by the same individual. This “duality” of positions variable can also be used to infer the existence of potential agency problems. When both positions are held by the same individual, there is a greater concentration of power within management, along with some loss of oversight over the activities of the CEO.

We test the Corporate Governance Improvements Hypothesis with two separate empirical analyses. First, we compare the changes in board characteristics over the three years following the filing of the derivative lawsuits (year 0 to year +3) for our sample of sued firms. The benefit of this

analysis is that we can directly observe the changes that occur in their boards. The drawback is that these changes might simply reflect the general trend among other comparable firms. To control for any general trends in the boards of similar firms, we compare changes in the boards of our sample firms against changes for the control firms. Our findings are contained in Table 8. Though we consider industry membership and size, we ideally want control firms that have similar agency problems but yet are not sued. Thus, among all firms with similar agency problems, we want to examine the board changes when the “treatment” for some firms is a derivative suit.

In our second analysis, we adopt a different approach for the construction of our control firms. We split our sample of used firms into two subsamples. We now compare firms with suits that were terminated against management (settled or adjudicated) with a subsample of firms whose suits were terminated in favor of management. These findings are in Table 9. We interpret plaintiffs’ success as a validation of their claim of agency problems, whereas their failure implies that they filed frivolous cases. This interpretation is in the spirit of Niehaus and Roth (1999), who find that meritorious cases are more likely to result in CEO turnover for a sample of firms subject to securities class actions. Thus, we examine whether derivative suits produce corporate governance improvement only among firms with agency problems, in contrast to board improvements being a trend common to all firms with derivative actions.

In Panel A of Table 8 we compare various board characteristics before and after the filing of derivative lawsuits for our full sample. Board size is slightly larger in the pre-period, but the difference is statistically insignificant. Note that the mean proportion of the board consisting of outside directors is significantly higher after the filing. The mean proportion increases from 53% to 60%, with the change being statistically significant at the 1% level. Correspondingly, the mean percentage of inside directors drops from 28% to 24%, a change that is also significant at the 1% level. A smaller percentage of the firms in the post-period have CEOs who also hold the position of

board chairman. The percentage declines from 77% to 68%, but the difference is significant at only the 10% level. We find that the departure rate of board directors increases significantly. The mean departure rate rises from 3% in the pre-filing period (year 0) to 12% in the post-filing period (year +3), a change that is significant at the 1% level. Use of the median produces similar findings. Overall, these results are generally supportive of positive changes in corporate governance.

[Insert Table 8]

In Panel B of Table 8 we report changes in board characteristics for our control firms from year 0 to year +3. None of the characteristics (means or medians), except the board departure rates, show a significant change. Even so, it should be noted that the general trend is in the direction of improved boards. The board size is smaller, the outside representation higher, the percentage duality is lower, and the board departure rate higher in the three years following the filings of derivative lawsuits. Thus, it is important to determine if changes in board characteristics of our sample firms are significantly different from changes for control firms.

Finally, in Panel C of Table 8 we compare the board changes for our sample firms as reported in Panel A against the changes for control firms presented in Panel B. We report these differences relative to the year of filing of the lawsuit (year 0). In unreported findings, we also affirm our findings relative to the year prior to filing (year -1). According to Panel C, from year 0 to year +3, the drop in the mean board size for our sample firms is not statistically significant. The percentage of outside representation for our sample firms rises significantly more than that for the control firms. A significantly lower percentage of CEOs simultaneously hold the board chairman position for our sample firms compared to the control firms. Further, the departure rate is significantly higher for our sample firms. In short, the findings in Panel A are supported even after we consider the mean changes for our control firms. The same conclusions follow from a comparison of changes in the medians.

In Table 9, we compare differences in board characteristics in the three years following filings of derivative lawsuits between firms with suits terminated against and in favor of management. In Panel A of Table 9, we find that the mean board size of the subsample of firms with suits terminated against management declines from 11 to 10 between year 0 to year +3, with the difference being statistically significant at the 1% level. The mean percentage of outside representation increases from 54% to 60%, a difference that is statistically significant at the 5% level. Unlike Panel A of Table 8, the percentage of CEO's who also hold the board chairmanship does not increase significantly. The mean board departure rate increases from 7% to 11%, a change that is statistically significant at the 5% level.

[Insert Table 9]

In Panel B of Table 9, we find that board size, the percentage of outside representation, the duality of CEO and board chair positions, and the board departure rate do not change significantly from year 0 to year +3 for the subsample of firms with suits that terminate in favor of management.

In Panel C of Table 9, we compare changes in board characteristics between firms with derivative lawsuits that terminate against management versus changes for firms with outcomes that are favorable to management. Whereas the mean board size is largely unchanged at 12 for the firms with suits terminated in management's favor, it drops from 11 to 10 for the subset of firms with suits terminated against management. According to Panel C of Table 9, the relative change between the two subsamples is significantly different at the 1% level. The mean percentage outside representation increases by 6% for the firms with terminations against management, whereas the corresponding increase for the firms with favorable terminations is closer to 2%. The difference in increases is significant at the 1% level. While the mean board departure rate is virtually unchanged at 8% for the firms with favorable terminations, the corresponding rate for the firms with suit

termination against management increases from 7% to 11%, with the difference being statistically significant.

The findings of Tables 8 and 9 suggest that there is an improvement in those board characteristics associated with good corporate governance. We find that the mean outside board representation for firms with derivative lawsuits increases by 5 percentage points more than that for control firms in the three years following the suit filings. For firms with lawsuits that terminate against management, the percentage of outside representation increases by 4% more than that for firms with lawsuits that terminate in favor of management.

For firms with derivative lawsuits, the percentage of CEO's who also hold the position of board chairman drops by 6 percentage points more than that for control firms in the three years following the suit filings. For firms with lawsuits terminated against management, the percentage of firms with CEO/board chair duality drops by 3%, whereas this percentage *increases* by 1% for firms with lawsuits that terminate in favor of management, although the difference is not statistically significant.

The mean departure rate increases by 7 percentage points more for firms with derivative lawsuits compared to control firms over the three-year post filing period. For firms with lawsuits that terminate against management, the mean departure rate is 4 percentage points more than that for firms with lawsuits that terminate in favor of management.

The mean board size of firms with unfavorable lawsuit terminations is, on average, about 2.5 members smaller than that for firms with favorable terminations at the end of the three year post-filing period. The corresponding mean difference in the year of the filings of derivative lawsuits is approximately one. The change in mean board sizes between the two subsamples during the post-filing period is statistically significant.

VI. Conclusion

There are two competing views regarding the ability of derivative lawsuits to address agency problems. In one view, derivative lawsuits are frivolous in practice, and have no meaningful impact on the firm. They largely serve the purposes of plaintiffs' attorneys who are primarily interested in collecting fees. Indeed, there are few structural changes included in settlement agreements or judgments in these cases. Alternatively, derivative lawsuits highlight the agency problems of the firm, leading the firm to make appropriate changes in its corporate governance even if these changes are not mandated by the legal process.

This study, however, reports empirical evidence consistent with the view that derivative lawsuits ultimately lead to beneficial adjustments in corporate governance. In particular, we find that board characteristics improve in the years surrounding the filing of derivative lawsuits. The proportion of outside representation increases, as does the departure rate. There is also some evidence that board size decreases, and fewer CEO's continue to also hold the position of Chairman. Altogether, there is a clear pattern of improved corporate governance following derivative lawsuits.

We do note, however, that our assessment of these post-filing changes in corporate governance is done without a corresponding measurement of the costs to the firm of derivative litigation. But such costs are not readily available to empirical researchers. Attorney costs, for instance, are not reported while other costs, such as the opportunity cost of managers' time, is not easily estimated. But comparison of these costs with the long term benefits resulting from an improved corporate governance structure represents an attractive and useful topic for future study and will provide a more comprehensive evaluation of the value of derivative actions.

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TABLE 1
Suit Filing by Year and Exchange

Year of Filing	Total	NYSE	AMEX	NASDAQ	Delisted
1982	1	1(1,497)	0(805)	0(3,085)	0
1983	1	1(1,518)	0(798)	0(3,676)	0
1984	5	5(1,514)	0(777)	0(3,847)	0
1985	7	5(1,507)	1(771)	1(3,882)	0
1986	12	11(1,533)	0(772)	1(4,205)	0
1987	23	18(1,612)	3(903)	2(4,465)	0
1988	19	13(1,641)	4(927)	2(4,222)	0
1989	33	23(1,672)	4(894)	6(4,072)	0
1990	42	24(1,729)	5(887)	13(3,922)	1
1991	20	16(1,846)	1(889)	3(3,907)	0
1992	19	13(2,052)	2(823)	4(3,932)	0
1993	20	9(2,311)	6(862)	5(4,403)	0
1994	13	5(2,500)	3(816)	4(4,676)	0
Total filings					
	215	144	29	41	1

Suits are classified by year of their filing and by the exchange on which the firm is listed. The number of firms listed on the specific exchange for each sample year is contained in parentheses.

TABLE 2
Suit Descriptive Statistics Sorted by Various Classifications

Panel A. Distribution of Suits by Listing Exchange

Exchange	Number of suits	Number of firms	Suits per firm
NYSE	144	112	1.29
AMEX	29	22	1.32
NASDAQ	41	39	1.05
Delisted	1	1	1.00

Panel B. Frequency Distribution of Suits per Firm

Number of suits	Percent of total number of suits	Number of firms	Percent of total number of firms
1	69.77	150	86.21
2	12.09	13	7.47
3	9.77	7	4.02
4	3.72	2	1.15
5	4.65	2	1.15
Total	100.00	174	100.00

Panel C. Distribution by Type of Suit

Suit type	Number of suits	Number of firms	Suits per firm
Acquisition/merger	16	13	1.23
Duty of loyalty	57	46	1.24
Duty of care	89	71	1.25
Info & disclosure	38	32	1.19
Other	9	7	1.29
Not reported	6	5	1.20

Panel D. Distribution by Industry

SIC code	Industry	Number of suits	Number of firms	Suits per firm
0100-0999	agriculture	0	0	
1000-1499	mining	7	7	1.00
1500-1799	construction	2	1	2.00
2000-3999	manufacturing	75	57	1.32
4000-4999	transportation	38	27	1.41
5000-5199	wholesale	3	3	1.00
5200-5999	retail	9	8	1.13
6000-6799	finance & insurance	43	38	1.13
7000-8999	services	34	30	1.13
9100-9799	public administration	1	1	1.00
Missing	n. a.	3	2	1.50

TABLE 3
Comparative Firm Characteristics Between Sample and Matched Firms in Year of Lawsuit Filing

Variable	Sample Mean	Matched firms ' mean	t-statistic for difference	Sample median	Matched firms' median	Wilcoxon z-statistic
Sales	2755.5	1550.7	2.48*	645.2	403.4	1.763*
Total assets	7183.8	4317.0	2.88**	1011.0	364.1	1.954*
Market value of equity	3112.4	1564.7	1.62	1228.4	221.4	2.149*
Total liability/Total assets	0.639	0.571	1.22	0.637	0.575	1.590
Long-term debt/Total assets	0.225	0.220	0.28	0.230	0.209	-0.216
PPEG/Total assets	0.536	0.599	-1.41	0.455	0.491	-1.088
PPEN/Total assets	0.320	0.347	-0.98	0.247	0.276	-0.961
R&D/Sales	0.104	0.072	0.13	0.027	0.031	-0.437
Adv. Exp./Sales	0.037	0.022	0.45	0.024	0.008	-1.575
Cash/Total assets	0.089	0.119	-1.29	0.041	0.040	-0.677
Dividend pay-out ratio	1.683	0.674	0.5	0.000	0.190	-2.620**
Free cash flow/Total assets	-0.022	0.089	-2.11*	0.070	0.099	-0.715
Mean ROE prior 3 years	0.043	0.487	-0.85	0.107	0.116	-1.740*
Sales growth prior 3 years	-0.392	0.267	-2.46*	-0.304	0.143	-0.864
Market/Book	2.627	2.534	1.25	1.541	1.535	0.335

All data for 174 sample and control firms are obtained from Compustat. Dollar amounts are in millions.

TABLE 4
Descriptive Statistics for Board Composition and Equity Ownership Variables for the Year of Filing

Panel A. Board Composition

Variable	Merger and acquisition	Duty of loyalty	Duty of care	Informational duties	Miscellaneous	Nonclassifiable	Aggregate (Sample Firms)	Aggregate (Control Firms)
Number of directors	11.27 (11) [11]	9.38 (9) [42]	11.33 (12) [67]	9.84 (8) [25]	11.33 (10) [6]	7.25 (7) [4]	10.45 (10) 155	9.12 (8) 153
Number of new directors	1.27 (0) [11]	0.95 (0) [42]	0.79 (0) [66]	1.44 (1) [25]	1.50 (0.50) [6]	0.75 (0.50) [4]	1.0 (0) 154	0.39 (0) 153
Number of internal directors	3.09 (3) [11]	3.00 (3) [42]	2.48 (2) [66]	3.00 (3) [25]	3.17 (3) [6]	1.75 (1.5) [4]	2.76 (3) 154	2.73 (3) 153
Number of gray directors	1.36 (1) [11]	2.02 (1) [41]	2.05 (2) [66]	1.56 (1) [25]	5.33 (5.5) [6]	1.00 (1) [4]	2.01 (1) 153	0.01 (0) 153

Panel B. Percentage Equity Ownership by Investor Type

Investor Type	Merger and acquisition	Duty of loyalty	Duty of care	Informational duties	Miscellaneous	Nonclassifiable	Aggregate (Sample Firms)	Aggregate (Control firms)
Directors and officers	0.146 (0.054) [10]	0.207 (0.120) [40]	0.139 (0.067) [40]	0.168 (0.147) [21]	0.189 (0.164) [6]	0.099 (0.045) [3]	0.169 (0.084) 120	0.181 (0.099) 120
CEO	0.023 (0.009) [11]	0.082 (0.013) [41]	0.043 (0.001) [66]	0.046 (0.036) [6]	0.046 (0.036) [6]	0.006 (0.002) [3]	0.052 (0.006) 153	0.060 (0.004) 153
Institutions	0.145 (0.134) [11]	0.054 (0) [41]	0.037 (0) [67]	0.089 (0) [26]	0.089 (0) [6]	0.038 (0) [3]	0.060 (0.00) 154	0.136 (0.076) 153
Blockholders	0.094 (0) [11]	0.142 (0.055) [43]	0.112 (0) [67]	0.108 (0.052) [26]	0.080 (0.067) [6]	0.067 (0) [3]	0.116 (0.00) 156	0.178 (0.069) 153

All of the governance variables were hand-collected from individual proxies for the sample and control firms in the year of the derivative lawsuit filing. The means (medians) [number of observations] for each variable are presented in each cell.

TABLE 5
Distribution of Suit Resolution and the Nature of Damages Assessed

Suit type (no of suits)	Judgment against the plaintiff	<i>For cases with judgment against the defendant , ignoring attorney fees</i>				Mean (Median) amount of damage
		Judgment against the defendant	Suits with monetary relief only	Suits with non- monetary relief only	Suits with both types of relief	
Acquisition & merger (16)	4	11	4	1	1	357,333 (0)
Duty of Loyalty (57)	10	38	12	9	4	782,979 (0)
Duty of Care (89)	21	45	17	10	7	1,286,769 (0)
Information & Disclosure (38)	2	31	14	3	2	1,776,515 (0)
Other (9)	2	6	2	2	0	937,500 (0)
Not reported (6)	0	5	1	3	1	4,900,000 (0)
All Types (215)	39	136	50	28	15	1,123,555 (0)

Data concerning the resolution of the cases is obtained from the individual proxies collected for each sample firm.

TABLE 6
Abnormal Returns Around the Time of Suit Filing by Suit Type

Suit type	CAR (-1, +1)
Acquisition/Merger (16)	0.0002 (0.012/16)
Duty of loyalty (54)	-0.0415 (-3.493***/53)
Duty of care (79)	0.0089 (1.202/77)
Info. & Disclosure (36)	-0.0633 (-2.834***/35)
Other (8)	0.0092 (0.431/8)
Not reported (6)	-0.0013 (-0.079/5)
All types (199)	-0.0189 (-2.934***/194)

Market model parameters are estimated using 250 days worth of data preceding the examination period and then used to calculate abnormal returns (AR) around the filing date. Cumulative abnormal returns (CAR) are also provided. Because of missing returns the number of observations vary over the examination period. The corresponding t statistic and number of observations is contained in parentheses under each CAR. The number of cases is provided in parentheses under suit type. Statistical significance at the one, five and ten percent levels is indicated by ***, ** and * respectively.

TABLE 7

Logistic Regression Analysis of the Determinants that a Firm will be sued in a Derivative Action

Variable	Hypothesized Sign	Model 1	Model 2	Model 3	Model 4
Intercept		-0.678*	-0.831*	-0.867*	-0.852*
Log of the market value of equity	+	0.331**	0.552**	0.359**	0.414**
Market-to-book	+		0.507**	0.542*	0.602*
Return volatility	+	0.352**	0.276**	0.447**	0.397*
Prior year's performance	-	-0.447*		-0.343*	-0.299*
Share turnover	+	0.051	0.038	0.062	0.043
Free cash flow	+	0.273***	0.571**	0.395**	0.491**
Insider equity holdings	+/-	0.037		0.083	0.059
Institutional equity holdings	-	-0.125		-0.077	-0.055
Block holder equity holdings	-	-0.133		-0.167	-0.198
Board size	+				0.033
Percent of outsider directors	-				-0.041
Percent of insider directors	+				0.017
Percent of gray area directors	?				0.011
Pseudo R square		0.143	0.137	0.147	0.149

The dependent variable is one for the 174 firms with derivative suits and zero for the 174 control sample firms. Firm size is the log of the market value of equity. The market-to-book ratio is estimated as the book value of assets plus the market value of common equity less the book value of common equity divided by the book value of assets. Return volatility is calculated as the variance of daily returns over the 250 days preceding the filing of a lawsuit. The prior year's performance is the nominal return to equity calculated over the 250 days preceding the filing of the lawsuit. Share turnover is calculated for the 120 trading days immediately preceding the filing of the lawsuit. Insider, Institutional and Block holder equity holdings are obtained from Compact Disclosure and individual proxy statements. Board size is the number of directors on the board. Statistical significance at the one, five and ten percent levels is indicated by ***, ** and * respectively. All accounting data is obtained from *Compustat* and the ratios are calculated for the close of the fiscal year preceding the year of the suit filing.

TABLE 8
**Changes in Board Structure Surrounding the Filings of Derivative Litigation
Between Sample and Control Firms**

Panel A. Changes in Board Characteristics for Sample Firms

Board characteristic	Year 0	Year +3	t-statistic (Wilcoxon z)
Board size	10.450 (10.000)	9.961 (9.800)	-1.021 (-0.917)
Percent of outside directors	0.530 (0.552)	0.603 (0.622)	2.332** (2.191**)
Percent of inside directors	0.284 (0.274)	0.239 (0.215)	-2.731*** (-2.683***)
Percent of gray directors	0.189 (0.192)	0.172 (0.166)	-0.840 (-1.005)
Percent with Chair/CEO duality	0.772	0.677	(-1.750*)
Board departure rate	0.029 (0.032)	0.121 (0.119)	2.210** (2.283**)

Panel B. Changes in Board Characteristics for Control Firms

Board characteristic	Year 0	Year +3	t-statistic (Wilcoxon z)
Board size	9.196 (9.100)	8.792 (9.000)	-0.862 (-0.791)
Percent of outside directors	0.659 (0.648)	0.682 (0.687)	0.258 (0.837)
Percent of inside directors	0.238 (0.274)	0.234 (0.252)	-0.237 (-0.873)
Percent of gray directors	0.142 (0.150)	0.128 (0.125)	-0.453 (-0.367)
Percent with Chair/CEO duality	0.737	0.713	(-0.422)
Board departure rate	0.049 (0.055)	0.072 (0.071)	1.668* (1.932*)

TABLE 8 CONTUNED
**Changes in Board Structure Surrounding the Filings of Derivative Litigation
 Between Sample and Control Firms**

*Panel C. Differences in Mean (Median) Board Characteristics Between Year +3 and Year 0 for
 Sample and Control Firms*

Board characteristic	t-statistic (Wilcoxon z)
Board size	-0.903 (-1.077)
Percent of outside directors	2.112** (2.257**)
Percent of inside directors	-2.273** (-2.199**)
Percent of gray directors	-1.032 (-1.071)
Percent with Chair/CEO duality	(-2.055**)
Board departure rate	2.119** (2.235**)

Mean (median) values for board structure variables for both sample and control firms are provided in separate panels. Board size is the number of directors on the board. Outside, inside and gray area directors are defined as per Yermack (1996). Duality refers to boards where one individual holds both the CEO and chairman of the board positions. The board departure rate is calculated as the number of new board members in a given year standardized by board size. The t-test for the difference across years compares each board characteristic between year +3 and year 0. The t-test for the difference in the difference across years (panel C) compares the differences between years for the sample firm with those of the control firm. Statistical significance at the one, five and ten percent level is indicated by ***, **, * respectively.

TABLE 9
**Comparing Changes in Board Structure Surrounding the Filing of Derivative Litigation
 Between Cases with Outcomes For and Against Management**

Panel A. Suits Terminated Against Management

Board characteristic	Year 0	Year +3	t-statistic (Wilcoxon z)
Board size	11.400 (10.800)	9.970 (9.500)	-2.621*** (-2.752***)
Percent of outside directors	0.538 (0.611)	0.596 (0.662)	2.317** (2.249**)
Percent of inside directors	0.285 (0.244)	0.264 (0.234)	-1.574 (-1.335)
Percent of gray directors	0.188 (0.167)	0.154 (0.132)	-1.892* (-2.127**)
Percent with Chair/CEO duality	0.740	0.710	(-0.917)
Board departure rate	0.073 (0.059)	0.112 (0.090)	2.315** (1.881*)

Panel B. Suits Terminated in Favor of Management

Board characteristic	Year 0	Year +3	t-statistic (Wilcoxon z)
Board size	12.300 (12.900)	12.450 (13.000)	1.140 (1.227)
Percent of outside directors	0.542 (0.555)	0.559 (0.574)	1.432 (0.987)
Percent of inside directors	0.211 (0.197)	0.238 (0.203)	1.808* (1.419)
Percent of gray directors	0.229 (0.178)	0.202 (0.190)	1.043 (0.772)
Percent with Chair/CEO duality	0.72	0.73	(0.329)
Board departure rate	0.081 (0.063)	0.078 (0.060)	-1.047 (-0.892)

TABLE 9 CONTINUED
**Comparing Changes in Board Structure Surrounding the Filing of Derivative Litigation
Between Cases with Outcomes For and Against Management**

Panel C. Differences in Board Characteristics Between Year +3 and Year 0 for Suits Terminated Against Management vs. Those Terminated in Favor (Difference of Differences)

Board characteristic	t-statistic (Wilcoxon z)
Board size	-2.541*** (-2.129**)
Percent of outside directors	2.217** (2.193**)
Percent of inside directors	-1.049 (-1.211)
Percent of gray directors	-1.897* (-2.280**)
Percent with Chair/CEO duality	(-1.115)
Board departure rate	2.251** (2.565***)

This table compares the mean (median) value of various board characteristics at year 0 and year +3 relative to the filing of derivative litigation for two sub-samples of firms. The first sub-sample contains seventy suits terminated against management while the second sub-sample contains twenty-eight suits terminated in favor of management. Board size is the number of directors on the board. Outside, inside and gray area directors are defined according to Yermack (1996). Duality refers to boards where one individual simultaneously holds the CEO and chairman of the board positions. The board departure rate is calculated as the number of new board members in a given year standardized by board size. A Student's t statistic (Wilcoxon z) is calculated to test for the significance of differences in the mean (median) values. Panel C compares the differences in board characteristics between year 0 and year +3 between the two sub-samples based on whether management wins or loses the suit. Statistical significance at the one, five and ten percent level is indicated by ***, **, * respectively.