Netspar Network for Studies on Pensions, Aging and Retirement

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Discussion Paper 01/2010 - 007

January 21, 2010

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This version: 21 January 2010

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Abstract

Does shareholder litigation pay off for investors over long horizons and how much does the type of allegation matter? We study whether a disciplining effect occurs for distressed firms and their managers and examine two different groups of allegations. Allegations of violations of duty of loyalty effect individuals only, but duty of care pertains to the corporate entity. After litigation we observe a general transformation in firm characteristics and risk exposures, which is consistent with theory. Although generally negative, short- and long-term performance effects differ substantially between types of allegations. We observe performance reversals only in firms with individual directors accused of insider trading. Effects are similar for firms with triggering events that precede the initiation of a lawsuit. At the same time we fail to observe a simultaneous decrease in financial health in the form of their expected default frequency. Our results have important implications for regulator and institutional investor decision-making and monitoring strategies: whether to use litigation to exert control on managers, even in the presence of dual holdings of debt and equity.

* We thank Cornerstone Research and the Securities Class Action Clearinghouse from Stanford Law School for providing the data. We thank Jeroen Derwall, Kose John, Frank Moers and Anthony Saunders for helpful suggestions. Parts of this research were conducted and initiated when Robin Braun attended New York University's Stern School of Business as a visiting scholar. The authors acknowledge financial support from The Foundation for Strategic Environmental Research (MISTRA).

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1 Introduction

Corporations can obtain external financing via a contract between the firm as a legal entity and its prospective financiers. In the process of raising external capital the firm pledges its assets vis-à-vis control rights for the investors (Hart, 1995). If a firm violates the terms of the agreement in any form, then the claimholders can legally enforce their rights in court. Shareholders in the United States—as one major group of external financiers—have the right to resort to class-action lawsuits when they believe that their agents have violated the duty of loyalty or the duty of care (Shleifer and Vishny, 1997). Typically, regulators in the U.S. are fairly strict in the interpretation of managers' duty of loyalty. The question that we ask in this paper is what happens to financial claimholders if these duties are allegedly violated.

Recent developments in financial markets have accelerated the rate of class-action lawsuits. Stock market valuations, significantly above fundamental levels between 1998 and 2001, have resulted in the burst of the internet bubble and consequently a large number of dissident shareholders. Allegations during this time period focused on inflated stock prices, shareholder wealth-destroying mergers and acquisitions, false IPO prospectuses, and managerial insider trading. After 2001, the cases of Enron, Tyco, WorldCom, Global Crossing, and Adelphia resulted in a large number of governance-related lawsuits. In 2005, two of Adelphia's family members were sentenced to prison and a settlement fund of $2.5 billion was established to benefit the plaintiff class. More recent observations include the option-backdating scandals and excessive risk-taking in the subprime crisis. According to The Economist (19 December 2007), shareholders filed class-action lawsuits on an "annual pace of around 270 between August and October 2007." In 1995, the U.S. Congress enacted the Private Securities Litigation Reform Act (PSLRA) that enables (private) shareholders to allege any violation of 10(b)-5 of the 1934 Securities Exchange Act. This rule prohibits among other things any manipulative and deceptive practices by managers and corporations and prescribes managerial duties. According to Romano (1991), these can be subdivided into duty of care and duty of loyalty. The latter term describes fiduciaries' conflicts of interest and requires them to put the corporation's interest ahead of their own. Typically, this includes self-dealing and related party transactions. The focus of this paper is the alleged violation of the duty of care, which requires the execution of "reasonable skills, diligence and especially taking care in board actions." The allegation of self-interested managerial misconduct and the post-evaluation of poor business decisions both fall under the violation of duty of care (Loss and Seligman, 2004).

Becht, Bolton, and Röell (2003) classify the threat of shareholder litigation as a governance mechanism. If this is true, shareholders are able to exert control with the initiation of lawsuits. An unresolved issue so far is the actual credibility of the threat and its reputational and financial costs for managers. Given that equity-linked incentives constitute a major part of American directors' and officers' total compensation (Hall and Liebman, 1998), shareholder litigation also materially affects their overall pay package. According to Fich and Shivdasani (2007), there is also a significant amount of reputational risk at stake for managers of sued corporations. Can managers actually fear shareholder litigation due to materially longer term adverse stock price reactions?

In this paper, we analyze various types of allegations brought forward in a class-action lawsuit and their short- and long-term effects on shareholder value. In particular, this paper addresses the following questions. When are class-action lawsuit filings likely to occur and what are are the immediate stock price reactions to them? Can we discriminate between different types of allegations and do they differ in returns across event windows? How do sued firms perform over a longer term and what is the role of a triggering event before the filing of a lawsuit? Can shareholder litigation discipline managers ex post and should they fear the ex ante threat? We adopt the perspective of an investor in a firm, who has become disgruntled with the firm's stock price performance and/or who suspects illegal actions and faces the question of alleging violations of Rule10(b)-5 to file a lawsuit. Under what circumstances does it pay off for the investor and how much time has to elapse until performance reverses and the investor profits in the long term? Does any long term recovery occur at the expense of the firm's creditors or is litigation a pure disciplining device?

We document several results. Shareholder litigation occurs frequently in the United States. In many cases poor stock performance triggers litigation, which is why shareholders actively monitor managers and seek to claim damages. Shareholders sue corporations for a variety of reasons, which all differ in terms of short- and long-term shareholder wealth effects. This result is robust to alternative specifications and holds for a variety of event windows. Using a feasible investment strategy of calendar-time abnormal returns we show that a portfolio of all sued companies underperforms over long horizons of up to 48 months after litigation, after correcting for conventional risk factors. However, if shareholders sue only selected directors rather than the entire corporate entity, then we do not observe this underperformance. We explain this result as direct evidence of a disciplining effect on individual corporate decision-makers. Our result does not come at the expense of creditors in the form of a higher probabili-

ty of default. The financial literature frequently advocates our method to produce unbiased long-term performance results subsequent to any form of corporate events. To the best of our knowledge, we are the first ones to empirically establish credible long-horizon performance of distressed firms facing litigation using a feasible investment strategy, which closely resembles shareholders' short- and long-term horizons.

We contribute to the literature of corporate governance, shareholder litigation, and long-term performance in various ways. The fact that lawsuits occur in response to bad stock price performance supports the empirical predictions of Povel, Winton, and Singh (2007). Incentives for directors to manipulate and to defraud are highest in boom times because shareholders' degree of monitoring and vigilance is lowest. Our analysis shows that a class-action lawsuit filing against firms is a materially adverse event in the sense of short- and long-term performance effects. Unlike Karpoff, Lee, and Martin (2008a&b) and Fich and Shivdasani (2007), we do not only measure losses borne by shareholders of firms being de facto charged with an *SEC* or *AAER* investigation, respectively, but focus on all firms sued by their shareholders. This way we can document a pure filing effect irrespective of the allegations' legitimacy. Moreover, we discriminate between the type of allegation, which the corporation faces, and document significant differences. We propose a method to measure the long-term performance of sued companies and note that results are also highly sensitive to momentum.

Whether and how distressed firms fare over the long term in litigation has important policy implications with respect to the actual costs borne by shareholders in the market. If stock prices do not recover over medium to long horizons this implies that shareholders in the aggregate market lose out and only plaintiffs and lawyers gain. If share prices recover but bankruptcy risk increases, then we conclude that there is a wealth transfer from creditors to shareholders. A major conclusion that emerges from our results is that class-action lawsuits appear to be a powerful tool to discipline managers and it has a reasonable ability to exert influence on distressed firms without any wealth transfer involved. Practical contributions are to help and steer the decision-making process of institutional investors: even the presence of dual positions need not deter them from using litigation as a means of exerting control.

We organize this paper as follows. Section 2 gives an overview of our data sources and outlines our methods, which we explain further in section 3. In this section we also show our results of various types of long-term performance and a naïve version of the Merton-KMV distance to default measure. Section 4 discusses our findings from a corporate governance perspective and contrasts subsample results. Section 5 is the conclusion.

2 Data and Methodology

Our primary source of data is the securities class action clearinghouse maintained by Stanford Law School in collaboration with Cornerstone Research.[1] In existence since 1996, the database includes more than 2800 companies that list either on the *NYSE*, *AMEX,* or *NASDAQ*. The database also includes private and *OTC*-traded companies as well as foreign issuers (who also fall under U.S. securities law regulations). We hand-collect case by case information and identify seven main reasons for shareholders to go to court against the corporation. Table I lists these reasons below. In the Appendix, we provide a sample of firms in order to clarify our coding and grouping methods. These allegations are not mutually exclusive and can amount to a theoretical maximum of seven allegations at the same time. We deliberately decide to retain cases on insider trading and related party transactions. Allegations of this type fall under the violation of duty of loyalty and are less likely to affect the whole firm. Our source of data for daily and monthly stock returns is CRSP. Market benchmark return and SMB, HML, and Momentum factors are from the website of Kenneth French. For the analysis in Subsection 3.5, we collect accounting data from COMPUSTAT in order to compare pre- and post-litigation firm characteristics; most importantly expected probability of default according to the methods of Bharath and Shumway (2008).

For the purpose of isolating a true "filing effect", we also identify whether any triggering event has preceded the filing of the lawsuit. We classify triggering events as events where a material correction of management's earnings forecasts take place before the filing date of the class-action lawsuit. Alternative triggering events can be the initiation of a *SEC* investigation, self-disclosure of accounting problems, resignation of key executives, or severe problems in the auditing process. In our final sample of 650 companies during the period of 1996 to 2007, a triggering event preceded the filing in over 55% of the cases. In Subsection 3.4 we discriminate between firms with and those without triggering events.

-Insert Table I about here-

As can be seen in the table the annual number of class-action lawsuits peaks in 2002 after the bubble burst. This gives a first indication that class-action lawsuits are a response to decreasing stock markets. This is also in line with Povel, Singh, and Winton (2007) who state that managers' incentives to manipulate are largest in boom times because shareholders are less vigilant. Following 2002 and the enforcement of Sarbanes-Oxley, we also observe a sharp

[1] This database is available online via http://securities.stanford.edu

increase in lawsuits related to corporate governance. False and misleading statements, often coinciding with stock price manipulation are the prime allegations brought forward by shareholders in class-action lawsuits.

Panel B shows in which industries class-action lawsuits are most prevalent. The four most litigation-vulnerable sectors are retail (FF9), manufacturing (FF3), consumer durables (FF2), and energy (FF4). These tend to be mostly capital intensive and large industries. Since the business equipment (among others high-tech firms) sector is usually highly dependent on growth opportunities it surprisingly does not show up as an exposed sector in terms of litigation risk. A possible explanation is that high growth typically does not coincide with firms being large in terms of assets. Typically, large firms are sued for their deep pockets (DuCharme, Malatesta, and Sefcik, 2004). We stress that our sample does not discriminate between ex post meritorious or frivolous lawsuits, which tend to be lawyer-driven. Our objective is to find a pure filing effect of a lawsuit against companies and to find out if the filing has merits beyond the aimed settlement amount. Therefore an analysis of ex post successful lawsuits only, as in Fich and Shivdasani (2007), can bias our results downwards.

2.1 Testable Hypotheses

We test whether class-action lawsuits have long-term disciplining effects on the CEO and the firm. Shareholders use class-action lawsuits as a punishing device in response to underperformance and managerial malfeasance. We hypothesize that shareholder wealth effects (both over short and long horizons) differ between the types of allegation brought forward. If stock price performance does not recover from a short-term dip, then investors that sue a firm are better off to dispose of their shares and to take the settlement amount only instead of holding on to their shares. According to Fich and Shivdasani (2007), an out-of-court settlement is proposed in 91% of the cases. Out of these settlements, the amounts range between $3 and $40 million for the 25th and 75th percentile, respectively, whereas the average settlement amounts to $22 million. If performance recovers and outperforms the market after adjusting for risk over long-horizons, then the lawsuit has merits beyond the settlement amount that the plaintiffs originally aimed for. Long-term stock performance is highly sensitive to the type of allegations that the corporation faces. We discriminate between unlawful activities, which are likely to systematically affect the whole entity (violation of duty of care) versus allegations charging individuals (violations of duty of loyalty). We argue that individuals are more likely to be disciplined for their behavior than the whole firm as a legal entity. In the case of a whole firm, a lawsuit filing is a more disruptive and adverse event, which sustainably erodes inves-

tor confidence. For this group of firms, we hypothesize a significant long-term underperformance rather than for a group of firms, where individuals are charged for a violation of duty of loyalty. This reasoning results in the following hypothesis.

H1: Only firms, whose individual directors are charged with violation of duty of loyalty, experience a disciplining effect from lawsuits. This translates into long-term reversal.

Additionally, we test whether class-action lawsuits have similar negative stock price effects irrespective of whether the firm was already facing problems before the filing date – a triggering event such as voluntary self-disclosure. The filing of a lawsuit therefore resembles a material loss of investor confidence, which manifests itself as an inferior stock price performance. In this case, we hypothesize that it is the actual filing of the lawsuit that causes long-term performance effects rather than self-disclosure before the filing.

H2: Long-term stock price performance will not differ between firms where adverse events trigger the filing of a lawsuit and firms, where such pre-lawsuit events are absent.

For our last hypothesis, we compare findings from the long-term performance of the firm's equity to the possible expected costs, and to the firm's outstanding debt. We represent this comparison with firms' expected frequency of default. If any possible recovery of the share price subsequent to litigation comes at the expense of a significant increase in this variable, then we conclude that there is a wealth transfer from creditors to shareholders. We state that class-action lawsuits can only work as governance mechanisms and disciplining devices if such a wealth transfer is absent. In this case, performance reversal is a result of either management turnover or a change in behavior.

H3: Performance reversals originate in a wealth transfer from creditors to shareholders.

3 Long-Term Wealth Effects in Class-Action Lawsuits

We adopt several methods in order to evaluate shareholder wealth effects from class-action lawsuit filings. Our general approach is the use of event studies, but for different purposes. We evaluate short-term announcement effects of class-action lawsuit filings with daily returns in the classic style of Brown and Warner (1980). For longer horizons up to 36 months we use monthly data. We also propose the implementation of calendar time portfolio returns with a Fama-French risk correction according to Kothari and Warner (2007) and others. We further suggest the importance of augmenting the risk correction with a momentum factor according

to Carhart (1997). Subsection 3.5 examines a possible wealth transfer from creditors to shareholders in the form of a higher probability of default.

3.1 Short-Term Announcement Effect

The cumulative abnormal returns best depict the immediate stock price reaction of a class-action lawsuit filing. Using various types of methods, we document a unanimous decline in stock price on the filing of a class-action lawsuit. More importantly, we already see a significant dip in stock prices before the actual filing, which points at either rumors hitting the market or repercussions from triggering events.

-Insert Figure 1 about here-

Besides the sharp stock price drop, we also fail to observe a significant recovery within two months following the event (up to 40 trading days). This finding already hints at the importance of analyzing long-term shareholder wealth effects. Short-term wealth effects can be documented as being quite substantial. Even though we see a recovery of 200-300bp from shortly after the filing until day 40, the cumulative abnormal returns over the whole event window are constantly negative. This robustness in negative performance stems from the almost monotonous decrease in stock price before the filing date. We could attribute the sharp decline in stock prices before the event day purely to triggering events. But, in Figure 2, we split the sample into firms where a triggering event has preceded the filing of the lawsuit versus those firms where it has not, and compare the shapes of the graphs.

-Insert Figure 2 about here-

In the graph, it becomes clearly visible that firms where a triggering event has preceded the filing are not the only cases with a pre-event day decline in performance. Though somewhat weaker in magnitude, firms' share price performance declines correspondingly before the event if a lawsuit comes as a surprise to the market. This case implies that we are not purely examining firms that have already suffered from adverse events before the lawsuit. Our findings are robust to all types of specifications in event study methods. We obtain qualitatively similar results using equally-weighted benchmarks. An attractive property of event studies that uses the Fama-French two-step procedure is that we can use the estimated coefficients from the estimation period of daily return data. We use these coefficients for the computations of the expected returns during the event window in order to further characterize sued companies. We do so to distinguish between firms by their exposure to conventional risk factors.

-Insert Table II about here-

We further break down the sample by the types of allegation that each firm faces in court. Firms being accused of accounting fraud (Panel C) have by far the lowest HML coefficient, which we interpret as these being extremely high growth firms before the filing. This stellar growth might be fueled by allegedly wrong accounting data. Similarly, firms facing insider trading (Panel E) allegations have a strong exposure to large companies (negative average SMB coefficient of -0.98). This observation can be due to the fact that directors and officers in large firms have stronger incentives (Core, Holthausen, and Larcker, 1999). That is, if directors and officers can capture more upside potential from inside information, they are also more likely to use it. Overall (Panel A), one can conclude that sued firms are growth firms, which tend to be large. The latter is consistent with the literature on litigation, which states that shareholders target companies with deep pockets. In Subsection 3.4 we investigate whether these coefficients experience a transformation and whether stock characteristics change subsequent to the litigation.

As a next step to distinguish between allegation types we look at the same subsamples but during five separate event windows. Table III uses five different event windows from (-1; +1) to (-10; +10). Since average abnormal returns are likely to be affected by extreme values (upward or downward), we also report median values in parentheses to be more conservative.

-Insert Table III about here-

In Panel A, we can observe that "illegal business practices" show the most negative abnormal returns in all settings. Allegations, which are governance- or compensation-related (similar for "insider trading") also result in a nontrivial negative announcement return. We explain these findings by shareholders losing confidence in the firm they invest in as soon as corporate governance failures or a manager taking advantage of private knowledge is disclosed to the investing public. In Panel B, we highlight that for several event windows the stock price reaction to an increasingly severe lawsuit (approximated by the number of allegations brought forward) becomes more negative. We conclude that a more negative stock price reaction with more allegations brought forward can yield harsher personal consequences for the CEO and for the firm. If we focus on the first three rows (up to three allegations), the picture of decreasing cumulative returns is consistent among all event windows.

In order to determine which allegations drive the return during our event periods, we conduct a cross-sectional regression of our event window cumulative abnormal returns on a number of

control variables and dummies of the types of allegations with "stock price manipulations" as the base level. Results are reported in the table below.

-Insert Table IV about here-

In a multivariate setting, we still observe that "illegal business practices" results in significantly lower CAR than for the base case, especially for very short run event windows. For "insider trading" however, the pattern is reversed. Coefficients on control variables (not reported but available upon request) like firm size (log of total assets) and growth opportunities (log of market-to-book ratio) are in line with the event study literature. The latter as a control variable is consistently negative pointing at a short-term correction to fundamental values. Firm size has a mitigating effect on abnormal returns because larger firms are more likely to be diversified and have a larger shareholder base. After controlling for other factors, allegations of this type do not result in significantly lower CARs than in the base case. Still, for longer periods, they bear more negative announcement returns.

Allegations are not mutually exclusive. Hence, overlap between the allegation types might blur our conclusions. For that purpose we also focus on the group of firms (167 in total) that only face one single allegation and distinguish between those. Thus, we are able to isolate the allegation types from each other so that we can discriminate more easily. For those 20 firms being charged with illegal business practices only, CARs during event windows *[-5; +5]* and *[-10; +10]* turn out to be quite significant with -16 and -13%, respectively. Insider trading is inconclusive because it almost constantly coincides with an allegation of either stock price manipulation and/or false and misleading statements. Therefore the sample size is consequently very low, which does not allow for statistically reliable inferences. We conclude significant differences in terms of shareholder wealth effects between the allegations brought forward, which gives first indications on our test of *H1*.

3.2 Long Horizon Results

In Subsection 3.1, we were not able to observe a clear pattern of short-term (two months) recovery of the stock price for firms being sued. To gain more insights into this result, we conduct the same analysis using monthly data and an event window of up to 36 months. We graphically depict the evolvement of monthly cumulative abnormal returns in Figure 3 below using several methods.

-Insert Figure 3 about here-

The development from the event month zero until month three approximately confirms the image from Figure 1, namely an indication of a slight recovery of the stock price, which sharply reverses thereafter. After month three we see a gradual decline down to a minimum of -23% CAR over less than three years. For the entire sample of 650 sued firms (irrespective of allegation type) this is quite puzzling. On average, shareholder litigation does not seem to pay off in terms of stock price recovery. If we take the statistical validity in this case for granted, we can infer that shareholders aim for the settlement amount and dispose of any equity share in the company that they sued in the first place. However, we acknowledge potential statistical biases for this type of analysis. Still this preliminary result can serve as a crude indication of long-term shareholder wealth effects.

3.3 Abnormal Returns in Calendar Time

Long horizon event studies are not unproblematic with respect to statistical validity since potential misspecification of daily expected returns accumulates over long horizons to sizable estimation errors. Moreover cross-correlation becomes greater over long horizons (Kothari and Warner, 2007). The buy-and-hold abnormal return (*BHAR*) approach by Daniel, Grinblatt, Titman, and Wermers (1997) therefore uses matching firms/portfolios to calculate abnormal return for each firm and holding period *t*. Here, risk-adjustment takes place via characteristic-based measures. The difficulty in using this approach is that it is not a feasible investment approach because the total number of event firms is not known in advance (Eckbo, Masulis, and Norli, 2000). So, if we want to compute long-term shareholder wealth effects from the time of the filing date and how these shareholders perform on a risk-adjusted basis compared to the market and conventional risk factors, we need to proceed differently.

Instead, we suggest the implementation of a calendar time portfolio approach (Fama, 1998), which works the following way. Suppose a group of firms experience some common corporate event. In the sample period, firms are facing events that might be spread over time (T = months). Further assume that we want to compute price performance over period T following the occurrence. To do so, in each calendar month over the entire sample period, we construct a portfolio containing securities that experience an event during the previous time T. Due to the nature of the construction, the number of firms in the portfolio is not constant: firms exit and new firms enter each month. In this way, we account for all the cross-correlations of event firm abnormal returns in the portfolio variance. We regress the resulting time series of monthly returns on the Fama-French factors plus a momentum factor (Carhart, 1997):

$$R_{pt} - R_{ft} = a_p + b_p * (R_{mt} - R_{ft}) + s_p * \text{SMB}_t + h_p * \text{HML}_t + u_p * \text{UMD}_t + e_{pt.} \qquad (1)$$

Where R_{pt} is either the equal or value-weighted return for calendar month t for portfolio p, which has experienced an event during the prior time T, R_{ft} is the risk-free rate, and R_{mt} is the return on the CRSP value-weighted market portfolio. The SMB_t is the differential return between a portfolio of small stocks vs. big stocks, HML_t is the return differential between value and growth stocks (high vs. low book-to-market), and UMD_t is the difference in returns between prior year's winners and losers. The critical variable in equation (1) is a_p, which is the average monthly abnormal return on our portfolio of event firms over the T post event period. The b_p, s_p, h_p and u_p are the sensitivities to market, small firm risk, the value-premium, and momentum, respectively. Prominent applications of this approach are Mitchell and Stafford (2000) and Brav and Gompers (1997). We adopt seven different holding periods that start from zero to six months and go up to zero to 48 months. This setup reflects that performance does not include the announcement return of the class-action lawsuit filing. The first return of a company being included is always between the end of the filing month and the end of the subsequent month. The results are shown in Table V below.

-Insert Table V about here-

It is important to note that our results are highly sensitive to the incorporation of Momentum.[2] As can be seen in the table, u_p is significant and negative on Momentum in all of the regressions, which seems straightforward. Our portfolio is strongly tilted towards prior losers, which, in the light of sued companies' negative performance history, is logical. For Panel A, we note that underperformance diminishes over time after 18 months but still persists. For holding periods of six months, we observe a strongly negative monthly alpha, which translates into an annualized alpha of the investment strategy of almost -20%. For longer periods, underperformance becomes less negative. Concerning SMB and HML coefficients, we observe a remarkable pattern. The coefficients from the pre-event window estimation are still both negative, which hints at sued firms being large firms with low book-to-market ratios (growth firms). After the event however, we note that these turn positive for our portfolio of sued firms. A intermediate conclusion emerging from this observation is that subsequent to their litigation charges, sued companies now behave like smaller and high book-to-market firms (an interpretation could be that these distressed firms are "fallen angels" in the context of

[2] Calendar time portfolio regressions using only Fama-French's three-factor model (or CAPM only) are available from the authors upon request.

Rauh and Sufi, 2009). Hence, not only do we observe a significant effect on stock prices, there is also a change in firm risk with respect to exposures to market factors.

In Panels B-E of Table V, we break down our sample into four allegations: accounting fraud, illegal business practices, insider trading, and governance problems. In the case of accounting fraud allegations, firms' negative abnormal returns persist significantly for up to 30 months (and stays negative afterwards, though not significant any more). We do not observe this result for firms in Panels C and D. On the contrary, alpha reverses as long as the stocks are held longer than 24 months for firms facing charges of illegal business practices. Though not statistically significant, the monthly risk-adjusted alpha of a strategy investing in firms sued for illegal business practices is mildly positive. For firms and directors charged with insider trading, abnormal returns look even more prosperous. Initially (a zero to six months holding period), the monthly alpha is negative but not significant. Shortly afterwards, the strategy starts generating positive and significant monthly alphas in excess of up to 1.2%. A further striking feature is this group's exposure to HML. Over short holding periods, the coefficient is still positive (being exposed to value stocks) and it switches signs after 18 months (being exposed to growth stocks with low book-to-market ratio). For comparison, allegations on governance problems are also more likely to have a systematically negative effect on performance. Here, alpha over a maximum period of one year is significantly negative. We conclude that for these groups of firms the filing of a class-action lawsuit has a disciplining effect in terms of stock market performance. This conclusion lends strong support to our Hypothesis 1.

3.4 The Role of Triggering Events before the Filing Date

Does it make a difference if an event prior to the actual filing of the lawsuit triggers shareholder litigation? In other words, if the investing public is already aware that the firm is in a "problematic" situation before the filing of the lawsuit, then does the filing of the lawsuit still make a difference for these types of firms? And if yes, then what returns can be expected on these types of firms? We therefore investigate whether any disciplining effect stems from the actual litigation or if shareholders already were monitoring these firms beforehand. Recall from Section 2 that we were not able to spot differences in short-term pre-event performance prior to the lawsuit between the aforementioned two groups. In order to investigate this "true filing effect", we split our sample into those firms, which have experienced these triggering events prior to the filing versus those firms where the shareholder litigation database and the respective court documents do not document such an event. We continue to rely on the calen-

dar time portfolio approach and also check for difference in average portfolio alphas by using the following formula:

$$\frac{\bar{\alpha}_{p1}-\bar{\alpha}_{p2}}{\sqrt{\frac{\sigma_{p1}^2}{\sqrt{n_{p1}}}+\frac{\sigma_{p2}^2}{\sqrt{n_{p2}}}}}, \tag{2}$$

where p_1 and p_2 resemble the average alphas of the individual portfolios (triggering event yes or no). The n_1 and n_2 are the respective sample sizes of the two portfolios. Note that these are two mutually exclusive sample groups that only share the common feature of being sued by their shareholders. The results are in Table VI below.

-Insert Table VI about here-

Although initial short- and medium-term holding period alphas are more negative for firms with triggering events before the lawsuit, there is not a statistically significant difference in their alphas from firms without a triggering event in the past. Hence, we fail to reject the hypothesis of similar long-term returns for firms whose self-disclosure of accounting problems or SEC investigations have triggered the filing rather than shareholders' dissidence. According to the analysis, it is not fundamental events before the filing that make investors lose faith in the company and directors. Even though both groups of firms start off at different levels after 40 trading days, this difference does not manifest itself in differences in expected long-term returns between the groups. It seems to be the official filing of a lawsuit by shareholders themselves that erodes confidence. With this finding, we fail to reject Hypothesis 2 and conclude a "true filing effect".

3.5 The Role of Other Stakeholder Groups as External Financiers

Closely related to the aforementioned economic effects and to employees as stakeholders there is an open question with respect to another important group of external financiers: corporate creditors. The question of how shareholders fare in the long-term in a class-action lawsuit also leads to the debate of the consequences for the sued entity's cost of debt. Are both shareholders and creditors equally hurt or compensated in class-action lawsuits or is either of the groups compensating for the gains or losses of its financing counterpart? The value of outstanding bonds is among others predominantly influenced by the corporation's value in bankruptcy state. Therefore, which types of allegations and class-action lawsuits are likely to put the firm closer to this state, and how this state relates to shareholder returns is an unresolved issue.

Both issuer and issue credit ratings, as well as bond returns and yield spreads, are likely to capture only the effects on holders of traded debt securities. Not every corporation in our sample is expected to actually have publicly traded debt, which is why we focus on a broader measure of financial health and solvency based on the expected probability of default. Bharath and Shumway (2008) have derived a "naïve" version of the KMV-Merton model that is parsimonious in its computation and shows more than a fair predictive power compared to hazard models and the actual KMV model of expected distance to default.[3] This model requires fairly parsimonious ingredients for its computation. We estimate the volatility of firm value σ_V (naïve σ_V) with the following formula:

$$\sigma_V = \frac{E}{E+F}\sigma_E + \frac{F}{E+F}(0.05 + 0.25 * \sigma_E). \quad (3)$$

In line with Bharath and Shumway's approach, we use the annualized standard deviation of daily stock returns as σ_E and use market capitalization (number of shares outstanding times share price) as *E*. The *F*, the face value of debt, is debt in current liabilities (COMPUSTAT item 34) plus one-half of long term debt (COMPUSTAT item 9). The resulting volatility of firm value is our addition to the naïve distance to default (naïve *DD*) measure, which is computed the following way:

$$\frac{ln[(E+F)/F] + (r_{it-1} - 0.5\ naive\ \sigma_V^2)T}{naive\ \sigma_V\sqrt{T}}, \quad (4)$$

where the associated probability of default equals:

$$\pi_{\text{naive}} = N(\text{- naïve } DD). \quad (5)$$

Here, *N(·)* equals the cumulative standard normal distribution function. In order to capture the effect of a shareholder initiated class-action lawsuit filing on a possible increase of the expected probability of default (under which creditors as financial claimholders suffer), we split our sample into two distinct time periods. Our pre-lawsuit period spans from 270 trading days until 21 days before the filing. This is motivated by the fact that we want to reasonably isolate increases in volatility in stock prices from rumors or possibly triggering events. Our post lawsuit estimation period starts at 21 trading days and goes up to 270 after the lawsuit. Here we would like to isolate repercussions from the lawsuit filing, possibly even from the media. For robustness we also include the lawsuit period up to 20 days after the filing. We use daily data in order to compute volatilities and cumulative returns prior and after the lawsuit event. Fur-

[3] Note that the actual KMV-Merton model involves a far more complex iterative estimation procedure compared to the simplified version of Bharath and Shumway (2008).

ther, we require balance sheet information of the firms for the amounts of outstanding debt and equity. Data on financial stability and default probabilities is further supplemented with ratios of cash to assets, net worth to assets, leverage, Tobin's Q, EBIT to Assets, and book-to-market. Since the estimation procedure requires full availability of stock price and company characteristics, our sample size reduces from 650 to 556. The statistics portraying financial variables before and after the lawsuit filing can be found in Table VII below.

-Insert Table VII about here-

Several key figures from the table are worth addressing. Most importantly the probability of default of 12.09% before the lawsuit filing is already considerably higher than the unconditional 8.95% as reported in Bharath and Shumway (2008). Their sample pertains to an average of monthly data for all U.S. firms between 1980 and 2003 for which there is complete data. Moreover, the probability of default does not increase after the lawsuit filing. This finding means that any potential recovery and/or long-term disciplining effect does not come at the expense of creditor groups in the form of a higher default probability. We therefore conclude a disciplining effect, which in our setting rejects Hypothesis 3.

Other important variables are a significant decrease in Tobin's Q combined with an increase in the firms' book-to-market ratios in the year after the lawsuit. This lower market valuation might hint at the fact that these firms are "shunned" by investors. We further observe a sharp decrease in profitability (as measured by EBIT/Assets) and net worth. This non-negligible reduction lends further credibility to the notion that our sample of firms that are facing litigation is significantly distressed. Cash and leverage ratios do not point at any evidence of serious restructuring activities subsequent to the litigation. Note that the sample size of firms with complete information has decreased by 98 firms from 556 to 458. Our results might be an artifact of a potential selection bias in the number of firms in the sample since we are comparing them only to firms that have complete post-litigation data. Still, if we investigate the expected default probability before the lawsuit initiation of only those companies that lack sufficient post-lawsuit data, then their expected default probability is statistically indistinguishable from our original sample of all sued firms (12.09% vs. 12.34%). However, if we expand the estimation period for *naïve DD* and include the 41 trading days prior and subsequent to the lawsuit filing the expected probability of default jumps from 12.09 to 16.96%. This value is more than twice as high as the value for the COMPUSTAT universe between 1980 and 2003 and resembles a significant risk to the financial health of the firm.

In Panel C, we also distinguish between class-action groups and time periods. By this classification we observe that results are fairly sensitive to the extension of the sample period by 41 trading days until the start of the post-lawsuit period. We further note that in the post-lawsuit filing period, the measure of $\pi_{\text{naïve}}$ is invariant in comparison to the distinction of allegation types. If the company is facing allegations for the violation of duty of loyalty (i.e. insider trading allegations), then we observe the lowest expected default probability both prior and after the lawsuit filing compared to violations of duty of care. The former group also bears the highest pre-lawsuit annualized volatility, which is in line with managers increasing firm risk. Since their compensation is likely to include option packages, an increase in volatility (the options' Vega) is in managers' best interest. Only for this allegation do we observe the strongest decline in σ_E. When we contrast firms with and without triggering events, we conclude that the naïve KMV-Merton model seems to have some predictive power for the occurrence of financial distress. Firms without a triggering event have an almost 50% higher probability of default over firms where a triggering event has taken place. With respect to the sharp decrease of $\pi_{\text{naïve}}$ in firms facing accounting fraud, a possible explanation might be closer monitoring and more conservative management subsequent to litigation.

4 Possible Explanations and Practical Implications

How can we reconcile our results with shareholders' motivations to sue companies and possible long-term disciplining effects? According to Coffee (2005), class-action lawsuits occur more often in the U.S. due to the differences in ownership structure and shareholder base. Consequently, minority shareholders and the managerial labor market are the ultimate disciplinary mechanism for corporate control. The latter is not the central topic of this paper and shareholder proxy contests occur very rarely and with limited success (Mulherin and Poulsen, 1998). According to Peng and Röell (2008a), litigation is the central punishment device available for shareholders, and distinguishes the U.S. capital market from other markets. The question then becomes: who benefits from this punishment and what are its effects? Are there any long term merits in terms of disciplining and learning for the shareholder and the firm or do claims only center around the settlement amount and potential damages? Who gains and who suffers if shareholder litigation puts firms into potential distress? With respect to illegal insider trading claims, our analysis provides clear evidence of a disciplining effect. If selected individuals rather than the whole firm are sued, then over the long-term the effect lessens and even reverses into positive abnormal returns. A potential explanation might be that the firm is closer to financial distress in the form of possible bankruptcy. Our analysis in Subsection 3.5

rejects this explanation because we find that the probability of default actually decreases after the filing of a lawsuit. This observation actually benefits both groups of financial claimholders and a wealth transfer is absent.

Concerning insider trading due to stock price manipulation, several issues are worth addressing. We acknowledge that the communication of company information to investors is essential to signal a healthy condition to the market. When this communication is taken to deceptive extremes, managers violate their duty of loyalty. The possibility for this process to hold requires the assumption that stock prices do not fully reflect leeway for manipulation (Peng and Röell, 2008b). However, investors tend to be uncertain about the manager's true ability to move the stock price effectively. This uncertainty does not hold if accounting fraud as a firm-wide systematic malpractice is alleged. Illegal business practices and accounting fraud are de facto systematically adverse events that affect the entire corporation, which seems to erode investor confidence on a more permanent basis. With respect to the latter, the naïve probability of default is highest, which indicates a more adverse systematic effect on the corporate entity. Though not the central topic of this paper, it might be interesting to investigate long-term performance differentials between firms being sued for insider trading before and after Sarbanes-Oxley (SOX). Since SOX penalizes managerial insider trading to a higher extent, investors might interpret the violation of duty of loyalty to be particularly grave if heightened personal liability have not prevented managers from self-dealing.

In this paper, we have viewed the pre- and post-lawsuit filing periods as times of "distress", which have triggered shareholders' dissidence. The question whether corporations that face shareholder litigation are truly under distress is worth addressing. Conventionally, the academic literature distinguishes financial from economic distress.[4] Our paper focuses on self-inflicted financial distress, which does not pertain to an increase in liabilities that erodes solvency levels. Our measure of expected probability of default in shareholder litigation cases is more likely to be determined by (our approximation of) the volatility of asset value and its past cumulative returns rather than an increase in leverage beyond debt capacity. An observation, which is in line with the observation of prior literature on financial distress, is the sharp decrease in operating performance subsequent to litigation (cf. Table VII). This decrease hints at serious indirect costs of litigation for the firm, which are close to the values of Andrade and Kaplan (1998). The discussion about costs also brings us back to the initially raised question

[4] See Senbet and Seward (1995) for a survey of the literature. Almeida and Philippon (2007) have derived a model of (risk-adjusted) costs of financial distress

of management-borne costs of shareholder litigation. Since in our case of shareholder litigation, top management is truly responsible for the inception of financial distress, an efficient managerial labor market should replace the incumbents. Ultimately the question whether financial distress is a self-inflicted product of individuals (as in our cases of litigation), or a result of systematic economic shocks, or industry factors determines the future viability of the enterprise. Our long-term performance differential between firms being sued for insider trading versus firms sued for firm-wide malpractices can be explained in the following way. Insider trading can be more easily pinned down to individuals, whereas accounting fraud and/or illegal business practices is more likely to be a product of many. In the case of insider trading, the observed action of the lawsuit or reputational costs discipline existing managers, or a more efficient and ethical management replaces the incumbent managers. In the latter case, new managers are aware of the prior lawsuit, which their predecessors faced, and this information set deters them from any self-dealing actions.

We further document shareholder wealth effects for firms that face accounting fraud allegations. In a recent study, Kedia and Philippon (2009) demonstrate that subsequent to the disclosure of fraud (implicitly the filing of the lawsuit in our case, and eventually the final verdict) firms typically shed labor and capital to become more productive. This results from the high growth period (also shown by our strongly negative HML loading in Table II) in which wrong accounting data encompasses high levels of investment and the hiring of additional employees. In general, by comparing Tables II and VI, we encounter the same pattern as predicted by Kedia and Philippon's model. Firms in our sample experience a transformation from a negative to a positive SMB coefficient. Besides, most of our sample firms (exception illegal insider trading) develop into fallen angels. The HML coefficient turns from strongly negative into a positive coefficient. Still, at least in our analysis, the true long-term economic effects of accounting fraud and higher productivity do not materialize into higher expected returns.

In case the corporation has already been facing problems before the filing date in terms of self-disclosure or legal investigation by third parties, it suffers additionally from the filing of the lawsuit by its shareholders. This is documented by the lack of significantly different alphas between this group and a group without a pre-filing triggering event and the fairly isomorphic patterns before the actual lawsuit filing. Even though these two groups can be fundamentally different, they still share the common feature that both groups are being sued by their shareholders. Therefore, we conclude that the lawsuit per se and not any pre-filing events drives the long-term post event performance.

We suggest several main directions for further research. What seems important is to further evaluate the performance until the filing of the lawsuit. As we have seen in Figure 1, the market is substantially contaminated with rumors, which result in a stock price drop before the filing, and then gets further aggravated by the eventual filing. Still, we also observe a similar pattern for event firms in which a triggering event is absent. Alternative analyses could also shift the investment date of the calendar time portfolios further in time. However, this shift has the drawback of not reflecting the investor's perception at the time the investor decides to file the lawsuit and to possibly bear additional costs (unless the entire stake is sold). An open question remains on the role of the out-of-court settlements or, alternatively, the final verdict or dismissal dates. It will be interesting to relate immediate stock price reactions on these dates to the affected firms in our sample. Due to the resolution of uncertainty subsequent to these dates, we interpret this to be generally good news for the market. Nevertheless, we expect differences between allegation types and the potential severity in terms of the upcoming lawsuit. As a final point the relation between the violation of duty of loyalty, management turnover, and disciplining effects remains unexplored. Is long-term performance reversal a product of a replacement of incumbents or is there a serious deterrence effect for the insiders who stay in charge?

Moreover, open questions remain whether initiated lawsuits are costly for the shareholders and whether they are the only punishing device to resort to. By construction our research is U.S.-centered in the sense that class-action lawsuits are a frequently occurring and truly American phenomenon. Although recently regulated by the *PSLRA*, there is still an ongoing debate on whether the regulation has made the merits matter more or less in these lawsuits. Although, Johnson, Nelson, and Pritchard (2007) state that the merits matter more after the introduction of *PSLRA*, Choi (2007) concludes the opposite. Our sample starts after the introduction of the *PSLRA* so that we do not have the opportunity to distinguish between periods. In our research, we deliberately ignored whether the initiation of a lawsuit of ex post has been meritorious or not.

We also document a few limitations. Event study methodology until so far is unfortunately still only a crude way to measure true security price performance subsequent to corporate events. Especially in volatile pre-event estimation windows, betas are likely to be misestimated and expected returns misspecified. A significant fraction of our firms facing class-action lawsuits come from the period between 2001 and 2003. This rather turbulent market environment is likely to produce misstated betas, which only depend on past returns. More

sophisticated approaches by, for example, Cosemans, Frehen, Schotman, and Bauer (2009), could sharpen the precision of the beta estimation by weighing between conditioning economic variables and past returns.

Despite the appealing simplicity of using calendar time portfolios in our analysis, the asset pricing literature is so far not unanimous with respect to an accepted model of risk-adjusted performance (Ritter and Welch, 2002). Therefore, it is likely that any research on long-term post-event performance is sensitive to the methods employed. We do not take a stance on which asset pricing model produces the most precise results but motivate our approach from economic experience. The role of liquidity and investor recognition subsequent to materially adverse corporate events might play a role and is subject to further research.

5 Conclusion

In this paper, we provide the first credible evidence of the costs and gains for shareholders and creditors from litigation against distressed firms subsequent to the violation of duty of care and/or of loyalty. The question of performance subsequent to the filing of a class-action lawsuit ultimately determines whether shareholders hold on to their shares and bet on a recovery of the stock price. The alternative is to sell off the equity stake in the firm and either to take an out-of-court settlement, or wait for a final verdict. Our analysis reveals that a recovery of the stock price highly depends on the type of allegation brought forward, the time horizon, and the estimation technique of long-term performance. Whether a stock price recovery kicks in and how potential shareholder losses materialize ultimately has important policy implications for securities market regulators. We do not only address shareholders' role in our analysis but also focus on the firm's expected probability of default in order to capture potential effects on creditors as the other major group of external suppliers of capital. Answering this question has important implications for institutional investors as lead plaintiffs that might have dual positions in stocks and bonds in the firms they take to court. Our analysis shows that investors with dual holdings should not be deterred from resorting to lawsuits.

For allegations involving the corporate entity as a whole, we conclude that the event is highly disruptive. In the short run, the filing of a class-action lawsuit is a materially adverse corporate event where long-term economic and financial effects depend on the nature of the allegations. Still, it remains to be seen how the role of class-action lawsuits as a governance mechanisms will evolve in the future and whether shareholders will continue to resort to this disruptive mechanism.

Appendix: Sample of Original Allegation Types

Keywords for our coding into seven allegation types are underlined and marked in italics.

Insider Trading Allegations (violation of "duty of loyalty")

Ascend Communications Inc. (CUSIP: 043491). Filing date: 2 December 1997

"[…] The original Complaint charges defendants with violating federal securities and state laws, including Section 10(b) of the Securities Exchange Act of 1934 and Section 11 of the Securities Act of 1933, by engaging in an *illegal scheme and deceptive course* of conduct designed to inflate Ascend's stock price through positive statements concerning Ascend's business, earnings and its growth prospects, despite the fact that, at the time the statements were made, defendants knew, or recklessly disregarded, but failed to disclose to investors, that sales of Ascend's advanced modem products would all but cease because of, among other things, serious software and firmware problems. The defendants' scheme allowed *Ascend's officers and directors to sell their Ascend shares at enormous gains, exceeding $40 million in proceeds*."

Taken from: http://securities.stanford.edu/1011/ASND97/

Accounting Violations/Illegal Business Practices (violation of "duty of care")

Symantec Corporation (CUSIP: 871503). Filing date: 7 January 1997

"[…] The original complaint alleges that during the Class Period, defendants engaged in a fraudulent scheme and course of business that operated as a *fraud or deceit* on all persons who purchased or otherwise acquired Symantec stock. As set forth hereafter, these false and misleading statements included statements about (1) Symantec's new Windows 95-related utility software products known as Norton Navigator, Norton AntiVirus and Norton Utilities; (2) Symantec's Enterprise products; (3) Symantec's sales in Europe; and (4) other aspects of Symantec's business. Furthermore, Symantec's financial statements for its first and second quarters of fiscal 1996 (ended June 30 and September 29, 1995) were *false and misleading in violation of Generally Accepted Accounting Principles*."

Taken from: http://securities.stanford.edu/1013/SYMC97/

Illegal Business Practices/Governance problems (violation of "duty of care")

Duke Energy Co. (CUSIP: 26441C). Filing date: 23 May 2002.

"[…] The original complaint alleges that Duke failed to disclose that it was engaging in electricity trades involving simultaneous purchases and sales of power at the same price, overstated Duke's revenues in its public SEC filings and elsewhere by including in such revenues sums received in connection with such simultaneous purchases and sales of power, and failed to disclose that Duke did not have in place *sufficient management controls* to prevent Duke's traders from engaging in simultaneous purchases and sales of power at the same price. The complaint further alleges that *Deloitte & Touche violated the common law by certifying Duke's financial statements and by allowing its unqualified opinion to be incorporated by reference into Duke's filings with the SEC despite the fact that such financial statements and filings were materially misleading in that they materially overstated Duke's revenues by counting as revenue sums received in connection with simultaneous purchases and sales of power at the same price*. After the foregoing became known to the public, the complaint alleges, Duke stock tumbled to as low as $32.89 on May 21, 2002, down from a class period high of $47.74."

Taken from: http://securities.stanford.edu/1024/DUK02-01/

Bibliography

Almeida, H., and Philippon, T. (2007). The Risk-Adjusted Costs of Financial Distress. *The Journal of Finance, 62* (6). 2557-2587.

Andrade, G., and Kaplan, S.N. (1998). How Costly is Financial (Not Economic) Distress? Evidence from Highly Levered Transactions that Became Distressed. *The Journal of Finance, 53* (5). 1443-1493.

Becht, M., Bolton, P., and Röell, A. (2003). Corporate Governance and Control. In: Constantinides, G., Harris, A., and Stulz, R. (eds.). *Handbook of The Economics of Finance – Volume 1A: Corporate Finance*. (Amsterdam: North-Holland Publishers).

Bharath, S.T., and Shumway, T. (2008). Forecasting Default with the Merton Distance to Default Model. *Review of Financial Studies, 21* (3). 1339-1369.

Brav, A., Géczy. C., and Gompers, P.A. (2000). Is the Abnormal Return Following Equity Issuances Anomalous? *Journal of Financial Economics, 56*. 209-249.

Brav A., and Gompers, P.A. (1997). Myth or Reality? The Long-Run Underperformance of Initial Public Offerings: Evidence from Venture and Nonventure Capital-Backed Companies. *The Journal of Finance, 52* (5). 1791-1821.

Brown, S.J., and Warner, J.B. (1980). Measuring Security Price Performance. *Journal of Financial Economics, 8*. 205-258.

Carhart, M. (1997). On the Persistence of Mutual Fund Performance. *The Journal of Finance, 52* (1). 57-82.

Choi, S. J. (2007). Do the Merits Matter Less After the Private Securities Litigation Reform Act? *The Journal of Law, Economics & Organization, 23* (3). 598-626.

Coffee, J.C. (2005). A Theory of Corporate Scandals: Why the USA and Europe Differ. *Oxford Review of Economic Policy, 21* (2). 198-211.

Core, J.E., Holthausen, R.W., and Larcker, E.F. (1999). Corporate Governance, Chief Executive Officer Compensation and Firm Performance. *Journal of Financial Economics, 51*. 371-406.

Cosemans, M., Frehen, R., Schotman, P.C., and Bauer, R. (2009). Efficient Estimation of Firm-Specific Betas and its Benefits for Asset Pricing Tests and Portfolio Choice. *Working Paper available online: http://ssrn.com/abstract=1342326*

Daniel, K., Grinblatt, M., Titman, S., & Wermers, R. (1997). Measuring Mutual Fund Performance with Characteristic-Based Benchmarks. *The Journal of Finance, 52* (3). 1035-1059.

DuCharme, L.L., Malatesta, P.H., and Sefcik, S.E. (2004). Earnings Management, Stock Issues, and Shareholder Lawsuits. *Journal of Financial Economics, 71*. 27-49.

Eckbo, E.B., Masulis, R.W., and Norli, Ø. (2000). Seasoned Public Offerings: Resolution of the "New Issues Puzzle". *Journal of Financial Economics, 56*. 251-291.

Fama, E. (1998). Market Efficiency, Long-Term Returns, and Behavioral Finance. *Journal of Financial Economics*, *49*. 283-306.

Fich, E.M., and Shivdasani, A. (2007). Financial fraud, director reputation, and shareholder wealth. *Journal of Financial Economics, 86.* 306-336.

Hall, B.J., and Liebman, J.B. (1998). Are CEOs Really Paid Like Bureaucrats? *Quarterly Journal of Economics*, 113 (3). 653-691.

Hart, O. (1995). *Firms, Contracts, and Financial Structure*. (London: Oxford University Press)

Johnson, M.F., Nelson, K.K., and Pritchard, A.C. (2007). Do the Merits Matter More? The Impact of the Private Securities Litigation Reform Act. *The Journal of Law, Economics & Organization, 23* (3). 627-652.

Karpoff, J.M., Lee, D.S., and Martin, G.S. (2008a). The Consequences to Managers for Financial Misrepresentation. *Journal of Financial Economics, 88.* 193-215.

Karpoff, J.M., Lee, D.S., and Martin, G.S. (2008b). The Cost to Firms for Cooking the Books. *Journal of Financial and Quantitative Analysis*, 43 (3). 581-612.

Kedia, S., and Philippon, T. (2009). The Economics of Fraudulent Accounting. *The Review of Financial Studies, 22* (6). 2169-2199.

Kothari, S.P, and Warner, J.B. (2007). Econometrics of Event Studies. In Eckbo, B. E. (ed.). *Handbook of Corporate Finance. Volume 1: Empirical Corporate Finance*. (Amsterdam: North-Holland Publishers).

Loss, L., and Seligman, J. (2004). *Fundamentals of Securities Regulation (5th ed.)*. Aspen Publishers.

Mitchell, M.L., and Stafford, E. (2000). Managerial Decisions and Long-Term Stock Price Performance. *Journal of Business, 73* (3). 287-330.

Mulherin, H.J., and Poulsen, A.B. (1998). Proxy Contests and Corporate Change: Implications for Shareholder Wealth", *Journal of Financial Economics, 47* (3). 279−313.

Peng, L. and Röell, A. (2008a). Executive Pay and Shareholder Litigation. *Review of Finance*, *12* (1). 141-184.

Peng, L. and Röell, A. (2008b). Manipulation and Equity-Based Compensation. *American Economic Review Papers & Proceedings, 98* (2). 285-290.

Povel, P., Singh, R., Winton, A. (2007). Booms, Busts and Fraud. *Review of Financial Studies, 20* (4). 1219-1254.

Rauh, J.D., and Sufi, A. (2009). Capital Structure and Debt Structure. *Working paper available at SSRN: http://ssrn.com/abstract=1097577*

Ritter, J.R., and Welch, I. (2002). A Review of IPO Activity, Pricing, and Allocations. *The Journal of Finance, 57* (4). 1795-1830.

Romano, R. (1991). The Shareholder Suit: Litigation Without Foundation?. *Journal of Law, Economics and Organization 7*. 55−87.

Senbet, L.W., and Seward, J.K. (1995). Financial Distress, Bankruptcy and Reorganization. In: Jarrow, R.A., Maksimovic, V., and Ziemba, W.T. (eds.). *Handbook in Operations Research and Management Science – Volume 9: Finance*. (Amsterdam: North-Holland Publishers).

Shleifer, A. and Vishny, R. W. (1997). A Survey on Corporate Governance. *The Journal of Finance, 52*. 737-783.

The Economist. *"The crime in subprime"*. Print edition. 19 December 2007.

Table I: Sample Description and Allegation Types per Industry

Panel A of this table shows the sample size of our analysis. The different types of allegation stem from the case by case information on the website of Stanford Law School (http://securities.stanford.edu) and Cornerstone Research. In this table, inclusion criteria are the availability of common sample data for firm characteristics on the concerned companies. Allegations are coded according to the information listed in the "original complaint allegations" section on the aforementioned website. Panel B breaks down class-action lawsuits by year and by industry type into the 12 Fama-French (FF) industries as listed on Kenneth French's website (http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/Data_Library). The FF1 and FF2 are consumer non-durables (Food, Tobacco, Textiles, Apparel, Leather, Toys) and consumer durables (Cars, TV's, Furniture, Household Appliances), respectively. The FF3 is manufacturing (Machinery, Trucks, Planes, Office Furniture, Paper, and Commercial Printing) and FF4 is Energy (Oil, Gas, and Coal Extraction and Products). The FF5 is chemicals (Chemicals and Allied Products) and FF6 is business equipment (Computers, Software, and Electronic Equipment). The FF7 is telecoms (Telephone and Television Transmission) and FF8 is business utilities. The FF9 is shops (Wholesale, Retail, and Some Services) and FF10 is health (Healthcare, Medical Equipment, and Drugs). The FF11 is money (financial institutions) and FF12 is all the others.

Panel A: Types of Allegations Brought Forward

Year	Annual # of class-action lawsuits	Stock price manipulation	Accounting fraud / errors in financial state-ments	Illegal busi-ness practic-es	Insider trading of directors & officers	False / misleading state-ments/ failure to disclose	SEO-/IPO-/ Acquisition-related	Governance-/ compensation related
1996	25	5	6	3	4	18	3	1
1997	37	21	4	19	12	28	4	6
1998	36	20	6	10	9	23	8	5
1999	66	36	8	19	14	47	13	8
2000	46	32	4	13	7	35	10	6
2001	54	32	8	10	21	44	15	8
2002	92	49	8	34	13	42	12	15
2003	76	36	18	26	6	35	3	11
2004	67	25	17	24	7	40	9	14
2005	70	35	9	31	14	40	6	24
2006	33	19	1	18	11	12	3	14
2007	48	21	6	13	9	27	4	12
Total	**650**	**331**	**95**	**220**	**127**	**391**	**90**	**124**

Table I continued

Panel B: Class-Action Lawsuits per Year and Industry Type													
	FF1	*FF2*	*FF3*	*FF4*	*FF5*	*FF6*	*FF7*	*FF8*	*FF9*	*FF10*	*FF11*	*FF12*	*TOTAL*
ALL	4.15%	13.38%	20.46%	10.77%	1.85%	4.77%	0.92%	1.38%	22.77%	4.31%	4.92%	10.31%	*100.00%*
	27	87	133	70	12	31	6	9	148	28	32	67	*650*
1996	0.00%	12.00%	20.00%	16.00%	0.00%	4.00%	0.00%	0.00%	24.00%	0.00%	0.00%	24.00%	*100.00%*
	0	3	5	4	0	1	0	0	6	0	0	6	*25*
1997	2.70%	5.41%	10.81%	16.22%	2.70%	5.41%	0.00%	2.70%	35.14%	13.51%	2.70%	2.70%	*100.00%*
	1	2	4	6	1	2	0	1	13	5	1	1	*37*
1998	5.56%	27.78%	16.67%	5.56%	0.00%	5.56%	0.00%	0.00%	25.00%	0.00%	2.78%	11.11%	*100.00%*
	2	10	6	2	0	2	0	0	9	0	1	4	*36*
1999	3.03%	9.09%	18.18%	7.58%	0.00%	13.64%	1.52%	1.52%	27.27%	3.03%	0.00%	15.15%	*100.00%*
	2	6	12	5	0	9	1	1	18	2	0	10	*66*
2000	8.70%	8.70%	15.22%	10.87%	4.35%	2.17%	0.00%	4.35%	28.26%	6.52%	6.52%	4.35%	*100.00%*
	4	4	7	5	2	1	0	2	13	3	3	2	*46*
2001	7.41%	9.26%	7.41%	0.00%	0.00%	3.70%	0.00%	0.00%	44.44%	9.26%	5.56%	12.96%	*100.00%*
	4	5	4	0	0	2	0	0	24	5	3	7	*54*
2002	0.00%	11.83%	19.35%	10.75%	0.00%	4.30%	3.23%	0.00%	15.05%	9.68%	16.13%	9.68%	*100.00%*
	0	11	18	10	0	4	3	0	14	9	15	9	*93*
2003	2.63%	17.11%	25.00%	13.16%	0.00%	5.26%	0.00%	2.63%	18.42%	2.63%	5.26%	7.89%	*100.00%*
	2	13	19	10	0	4	0	2	14	2	4	6	*76*
2004	1.49%	8.96%	38.81%	16.42%	0.00%	2.99%	1.49%	1.49%	13.43%	1.49%	4.48%	8.96%	*100.00%*
	1	6	26	11	0	2	1	1	9	1	3	6	*67*
2005	10.00%	18.57%	20.00%	11.43%	8.57%	2.86%	1.43%	1.43%	15.71%	1.43%	1.43%	7.14%	*100.00%*
	7	13	14	8	6	2	1	1	11	1	1	5	*70*
2006	9.09%	18.18%	12.12%	6.06%	6.06%	3.03%	0.00%	3.03%	24.24%	0.00%	0.00%	18.18%	*100.00%*
	3	6	4	2	2	1	0	1	8	0	0	6	*33*
2007	2.13%	17.02%	29.79%	14.89%	2.13%	2.13%	0.00%	0.00%	19.15%	0.00%	2.13%	10.64%	*100.00%*
	1	8	14	7	1	1	0	0	9	0	1	5	*47*
Total	*27*	*87*	*133*	*70*	*12*	*31*	*6*	*9*	*148*	*28*	*32*	*67*	*650*

Figure 1: Short Term Performance and Announcement Effect

We graphically depict the performance of cumulative abnormal returns during the event period of our firms in the class-action lawsuit sample. Our sample size is 650. Our estimation window ranged from maximum 255 (minimum 60) trading days before the event period. Our event date is day zero (lawsuit filing day), where we draw a vertical line for convenience. Fama-French Momentum (Fama-French 4 Value-Weighted) abnormal returns have been estimated using Kenneth French's data library, whereas the beta was estimated versus the value weighted market benchmark of the CRSP universe. The "Comparison period" subtracts the firms' average returns from the estimation window in order to derive abnormal returns. The "Market adjusted returns" are derived from subtracting the contemporaneous equally weighted market return in the CRSP universe of stocks.

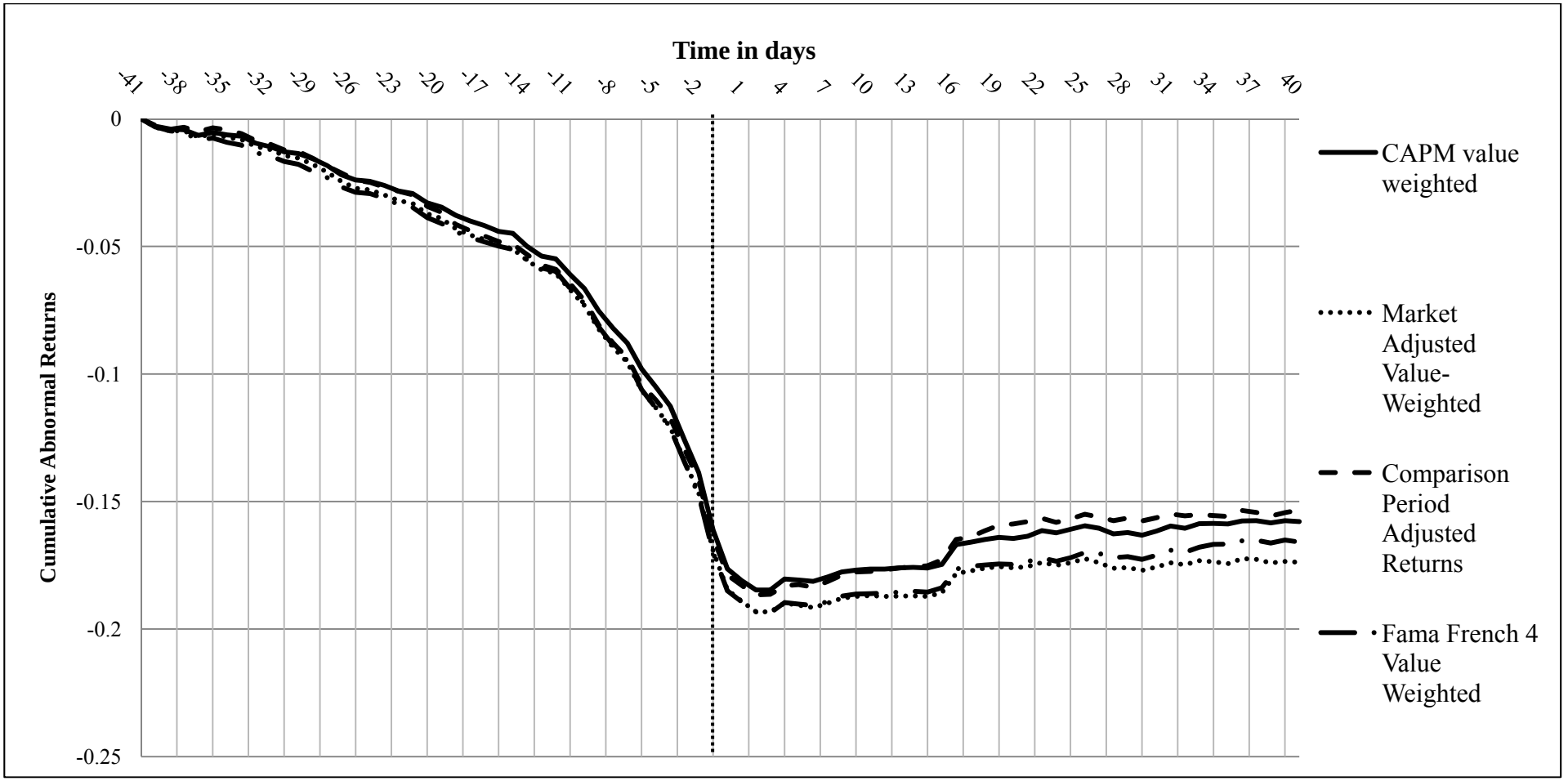

Figure 2: The Role of Triggering Events

The graph below depicts the same Fama-French 4-Factor event study as in Figure 1 with the exception that the sample is split into firms, in which a triggering event (in the form of self-disclosure, SEC investigations, etc) has preceded the actual filing of the lawsuit, and into firms where such a triggering event is absent. The dashed vertical line represents event day zero (the day of the lawsuit filing).

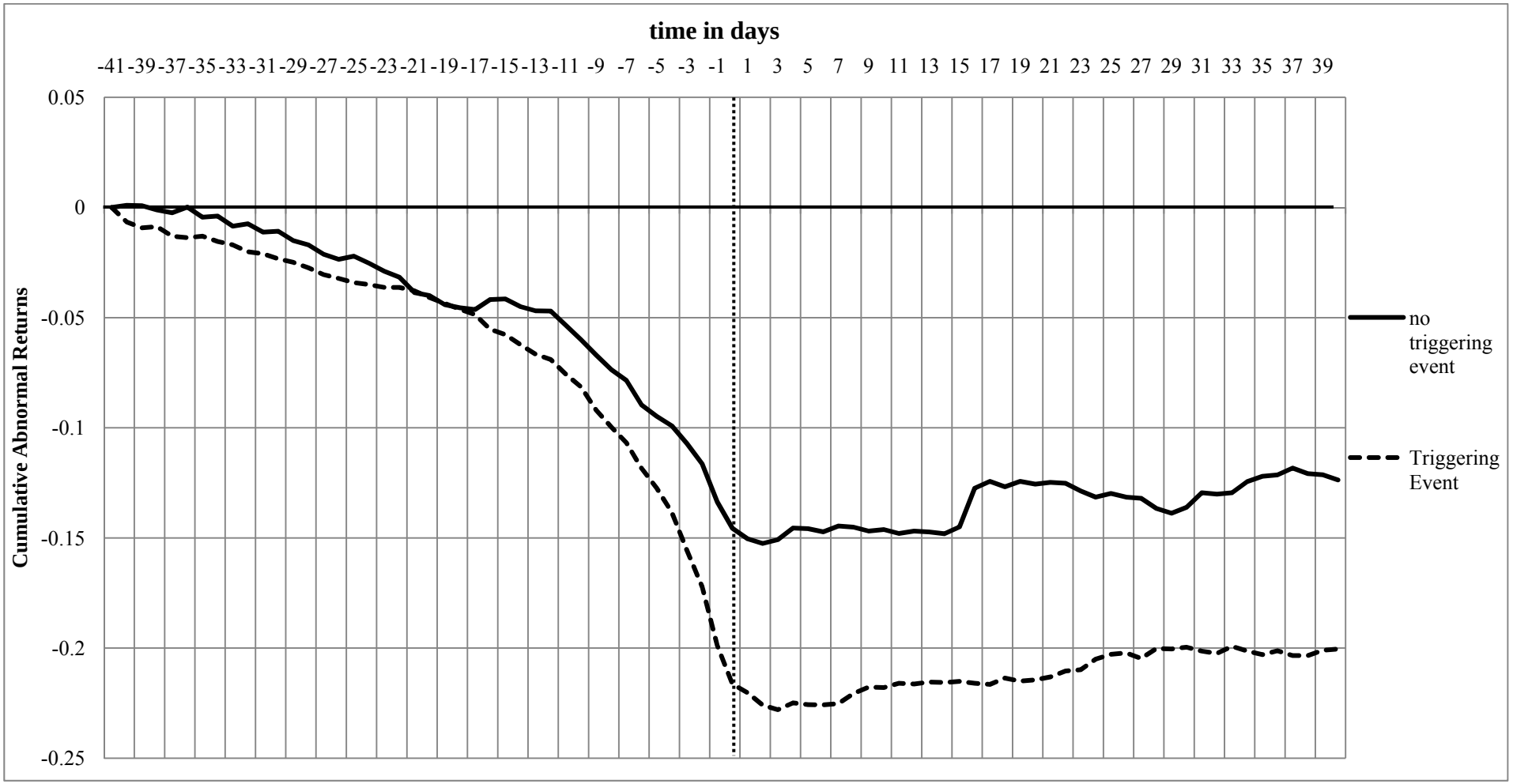

Table II: Exposure to Risk Factors during Estimation Period

In the table below, we depict the statistics of the exposures to the Fama-French risk factors and Momentum. The market benchmark for beta is the equally weighted CRSP universe of stocks. For details on the construction of the variables, please refer to Kenneth French's website: http://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html.

	Mean	**Median**	**Std. Dev.**	**Max.**	**Min.**	**N**
Panel A: Entire Class-Action Lawsuit Sample						
BETA	1.307	1.290	0.601	4.100	-1.060	649
SMB	-0.562	-0.440	1.100	2.990	-5.210	649
HML	-0.433	-0.510	0.675	1.920	-1.980	649
UMD	-0.032	0.030	0.696	2.280	-3.420	649
Panel B: Allegations of Stock Price Manipulation						
BETA	1.267	1.260	0.596	3.110	-1.060	327
SMB	-0.625	-0.460	1.159	2.050	-5.210	327
HML	-0.351	-0.460	0.676	1.920	-1.980	327
UMD	-0.043	0.020	0.750	2.280	-3.120	327
Panel C: Allegations of Accounting Fraud						
BETA	1.486	1.435	0.566	2.900	-0.180	92
SMB	-0.457	-0.445	1.007	1.970	-4.830	92
HML	-0.705	-0.790	0.615	1.060	-1.960	92
UMD	0.071	0.130	0.449	1.270	-1.140	92
Panel D: Allegations of Illegal Business Practices						
BETA	1.342	1.360	0.547	3.140	-0.410	217
SMB	-0.516	-0.330	1.103	2.050	-4.630	217
HML	-0.286	-0.390	0.678	1.920	-1.710	217
UMD	-0.065	-0.060	0.643	1.540	-2.360	217
Panel E: Allegations of Insider Trading						
BETA	1.208	1.235	0.670	2.970	-1.060	128
SMB	-0.980	-0.665	1.272	1.290	-5.210	128
HML	-0.412	-0.510	0.630	0.910	-1.980	128
UMD	-0.086	-0.005	0.744	1.780	-3.120	128
Panel F: Allegations of False and Misleading Statements						
BETA	1.250	1.210	0.576	4.100	-0.660	393
SMB	-0.569	-0.480	1.102	2.060	-4.830	393
HML	-0.447	-0.530	0.649	1.720	-1.980	393
UMD	-0.014	0.040	0.679	2.280	-2.860	393
Panel G: Allegations, which are IPO/SEO/Acquisition related						
BETA	1.275	1.240	0.566	2.710	-0.040	92
SMB	-0.355	-0.265	0.953	2.050	-4.340	92
HML	-0.414	-0.545	0.648	1.540	-1.710	92
UMD	0.009	0.040	0.635	2.180	-3.120	92
Panel H: Allegations, which are Governance related						
BETA	1.451	1.390	0.548	3.140	0.330	127
SMB	-0.398	-0.450	1.009	1.970	-4.340	127
HML	-0.325	-0.440	0.732	1.540	-1.840	127
UMD	-0.071	-0.090	0.669	2.180	-2.150	127

Table III: Cumulative Average Abnormal Returns

Panel A in the table below investigates the same abnormal return windows for the seven types of allegations, which have already been defined in Table I. Note that these types of allegations are not mutually exclusive. For the event study, we require an estimation period window of at least 60 trading days and a maximum of 255 for the estimation of R_m-R_f, *HML*, *SMB*, and *Momentum* coefficients. Day zero is defined as the day of the class-action lawsuit filing. In Panel B, we distinguish between the numbers of allegations that have been filed in the lawsuit. Median values are reported in parentheses. We report significance levels for a test (t-stat for mean and z-stat for median) for abnormal returns different from zero at 10, 5, and 1% level with *, **, and ***, respectively.

Panel A: Abnormal Return per Allegation Type

Type of Allegation brought forward	*(-1,+1)*	*(-1,0)*	*(0,+1)*	*(-5,+5)*	*(-10,+10)*	N
Average of all allegations	*-4.33%* *(-1.07%)*	*-3.86%* *(-0.89%)*	*-2.03%* *(-0.63%)*	*-8.52%* *(-4.22%)*	*-11.57%* *(-5.74%)*	*648*
Stock price manipulation	-5.17% (-1.49%)	-4.65% (-1.17%)	-2.53% (-0.85%)	-8.80% (-4.52%)	-13.46% (-7.71%)	327
Accounting Fraud	-2.99% (-0.43%)	-2.43% (-0.58%)	-1.11% (0.11%)	-5.69% (-3.44%)	-6.44% (-3.80%)	92
Illegal Business Practices	-6.87% (-2.41%)	-5.95% (-1.89%)	-3.56% (-1.30%)	-12.64% (-6.12%)	-14.17% (-7.29%)	217
Insider Trading	-4.91% (-1.42%)	-4.39% (-1.46%)	-2.23% (-0.32%)	-9.44% (-4.20%)	-14.22% (-5.26%)	127
False/misleading statements	-3.86% (-0.67%)	-3.86% (-0.83%)	-1.71% (-0.56%)	-8.79% (-4.00%)	-12.96% (-6.92%)	392
SEO/IPO/ Acquisition-related	-2.78% (-0.31%)	-2.90% (-0.87%)	-1.26% (-0.59%)	-2.64% (-1.30%)	-3.94% (-2.14%)	92
Governance Problems	-4.58% (-1.00%)	-3.73% (-0.82%)	-1.55% (-0.45%)	-9.42% (-3.30%)	-10.65% (-4.43%)	128

Panel B: Average Abnormal Returns per Total Number of Allegations Brought Forward

Total # of Allegations	*(-1,+1)*	*(-1,0)*	*(0,+1)*	*(-5,+5)*	*(-10,+10)*	N
1	-2.92%*** (-0.32%)	-2.37%*** (-0.27%)	-1.73%*** (-0.42%)	-7.35%*** (-3.56%)***	-9.42%*** (-4.75%)***	167
2	-4.47%*** (-1.34%)***	-3.97%*** (-1.19%)***	-1.95%*** (-0.79%)***	-8.61%*** (-4.63%)***	-11.76%*** (-6.54%)***	268
3	-5.83%*** (-1.74%)***	-5.28%*** (-1.49%)***	-2.54%*** (-0.45%)**	-9.52%*** (-4.23%)***	-13.74%*** (-6.79%)***	169
4	-3.20% (-0.95%)	-2.77% (-0.50%)	-2.22% (-0.92%)	-9.28%* (-3.66%)*	-11.42%* (-3.91%)	34
5	-5.38% (0.70%)	-9.19% (-0.12%)	-1.68% (-0.19%)	-10.43% (-3.77%)	-9.82% (-5.25%)	5

Table IV: Cross-Sectional Regressions and Single Allegations

In Panel A below, we report coefficients from cross-sectional regressions of the abnormal returns from the six different event windows. We control for *return on assets (ROA), growth opportunities (Log MB), size (Log TA), change in sales over the prior calendar year, change in stock price over the calendar fiscal year*, whether the firm is a *dividend paying firm*, and for *industry*- (Fama-French 12) and *year effects*. The *t*-statistics are reported in parentheses and significance is indicated with *, **, and *** for the 10, 5, and 1% level, respectively. In Panel B, we restrict our sample to those firms only facing one allegation to isolate the effects. We report significance levels for tests of mean and median (in parentheses) being different from zero with the same annotation.

Panel A: Cross-sectional Regression of Cumulative Abnormal Return over Different Event Windows on Control Variables

type of allegation	*(-1,+1)*	*(-1,0)*	*(0,+1)*	*(-5,+5)*	*(-10,+10)*	*N*
Base: Stock price manipulation						
Accounting	0.0042	0.0012	0.0093	0.0109	(0.0222	512
Fraud	(0.2189)	(0.0679)	(0.7112)	(0.3352)	(0.5972)	
Illegal Business	-0.0296**	-0.0328***	-0.0132	-0.0593***	-0.0300	512
Practices	(-2.2757)	(-2.7609)	(-1.4916)	(-2.6914)	(-1.1885)	
Insider	0.0175	0.0107	0.0175*	-0.0056	-0.0304	512
Trading	(1.2037)	(0.8062)	(1.7680)	(-0.2256)	(-1.0778)	
False/misleading	-0.0001	-0.0154	0.0077	-0.0297	-0.0516**	512
statements	(-0.0077)	(-1.2380)	(0.8285)	(-1.2861)	(-1.9556)	
SEO/IPO/	-0.0013	-0.0091	-0.0020	0.0443	0.0759**	512
Acquisition rel.	(-0.0782)	(-0.5954)	(-0.1771)	(1.5628)	(2.3395)	
Governance	-0.0025	-0.0077	0.0119	-0.0199	-0.0119	512
Problems	(-0.1657)	(-0.5521)	(1.1458)	(-0.7649)	(-0.3994)	

Panel B: Average CARs of the Subsample of Firms with only one Allegation (N = 167)

type of allegation	*(-1,+1)*	*(-1,0)*	*(0,+1)*	*(-5,+5)*	*(-10,+10)*	*N*
Stock price	-3.43%	-0.83%	-4.88%**	-10.21%**	-12.93%**	13
manipulation	(-3.51%)**	(-1.17%)	(-2.86%)**	(-6.68%)*	(-8.48%)*	
Accounting	0.28%	0.42%	0.50%	-2.60%	-2.93%	28
Fraud	(0.30%)	(0.04%)	(0.48%)	(-4.24%)*	(-2.12%)*	
Illegal Business	-8.14%**	-6.76%*	-3.54%	-15.91%**	-13.06%**	20
Practices	(-2.08%)	(-0.84%)	(-0.52%)	(-5.77%)**	(-5.99%)	
Insider	-2.27%	-1.05%	-3.56%	7.34%	-13.38%	1
Trading	(-2.27%)	(-1.05%)	(-3.56%)	(7.34%)	(-13.38%)	
False/misleading	-2.42%**	-2.53%**	-1.32%	-6.76%***	-10.20%***	96
statements	(0.23%)	(0.02%)	(-0.29%)	(-1.74%)	(-4.37%)**	
SEO/IPO/	NA	NA	NA	NA	NA	0
Acquisition rel.	NA	NA	NA	NA	NA	
Governance	-6.32%	-1.97%	-4.62%	-6.70%	-7.45%	8
Problems	(-2.55%)	(-0.94%)	(-2.27%)	(-6.09%)	(-8.25%)	

Figure 3: Long Term Performance – Monthly Cumulative Abnormal Returns

Below, we show long term monthly cumulative abnormal returns of firms that experienced a class-action lawsuit between 1996 and 2007. We use the same event window of [0; +36] months and distinguish between four estimation methods: Fama-French 4 Factor Abnormal Returns use the CRSP Value-weighted (equal-weighted) market return, SMB, HML, and Momentum premia as a benchmark during the estimation window. The estimation period stops six months before the event. The market model (CAPM) estimation suppresses the use of SMB, HML, and Momentum.

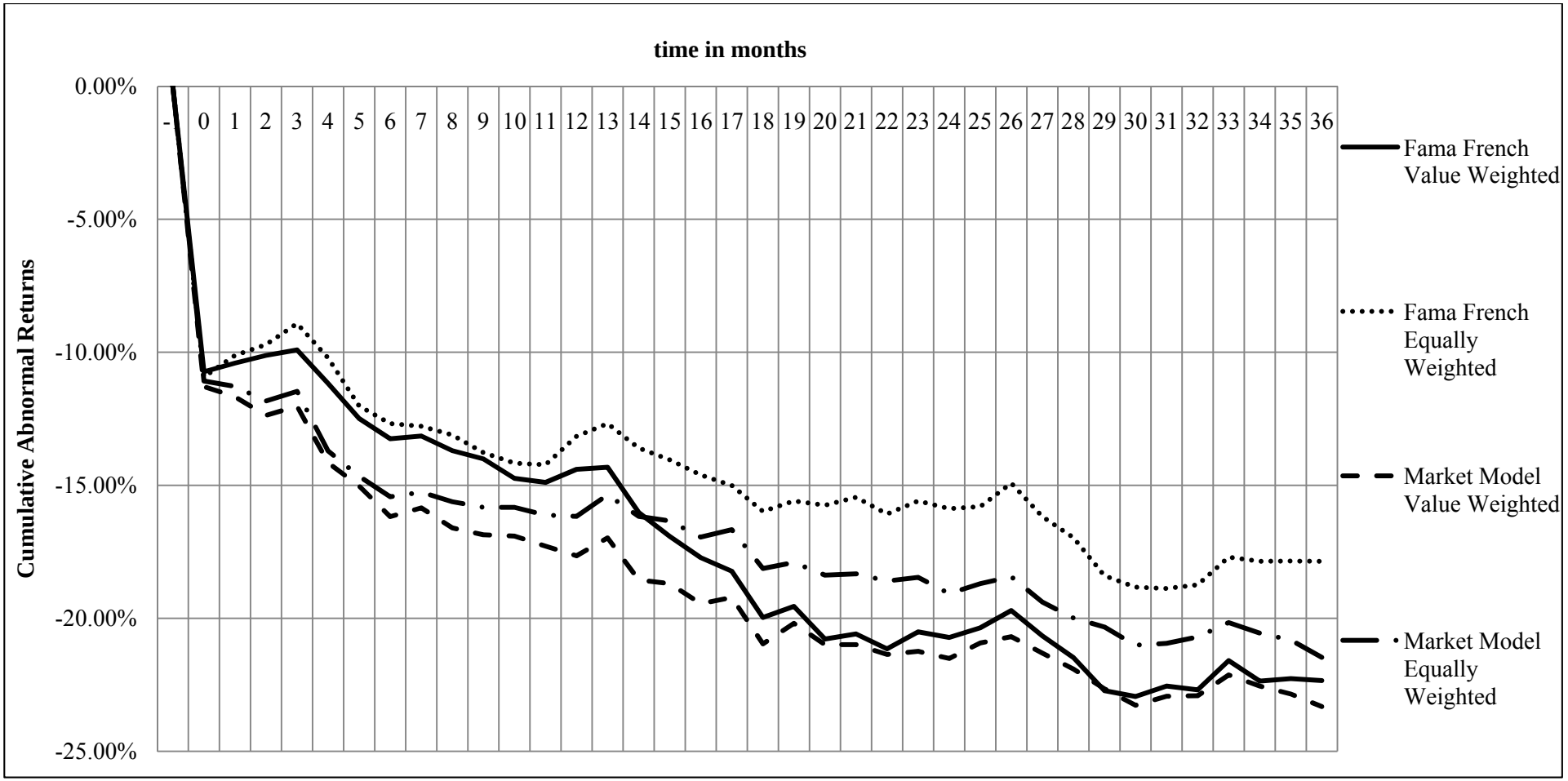

Table V: Long Term Performance in Calendar Time

In the table below, we perform Fama-French calendar time portfolio return regressions as advocated by Fama (1998). Panel A uses 132 observations from January 1996 until December 2006. Panel A restricts our sample to the all the companies sued during the time period. Panel B involves firms with lawsuits related to "accounting fraud". In Panel C, the sample is the firms being sued for illegal business practices. Panel D involves firms facing allegations of insider trading. Panel E includes firms with governance problems. Characterizations are illustrated in our Appendix. Our return windows are depicted in row 1 of the table. Alpha represents the intercept of a regression of abnormal returns of a strategy that invests in litigation firms versus the market benchmark, size-, book-to-market and Momentum factors. The dependent variable is the equally weighted monthly percentage return on a portfolio of firms facing litigation during the prior 6, 12, 18, 24, 30, 36, or 48 months.

$$R_{pt} - R_{ft} = a_p + b_p * (R_{mt} - R_{ft}) + s_p * \mathrm{SMB}_t + h_p * \mathrm{HML}_t + u_p * \mathrm{UMD}_t + e_{pt}$$

Where R_{pt} is the return on our portfolio of sued companies, R_{ft} is the risk free rate, R_{mt} is the return on the market. The *SMB* and *HML* capture the size, book to market. The *a* is the intercept of the regression and the abnormal return of the trading strategy. The $, *, **, and *** represent significance at the 10, 5, 1, and 0.1% level, respectively. The *t*-statistics (below the coefficients) have been adjusted for heteroskedasticity using the White correction.

Panel A: all Lawsuits (n=648)	*[0; 6 months]*	*[0; 12]*	*[0; 18]*	*[0; 24]*	*[0; 30]*	*[0;36]*	*[0;48]*
Alpha	-0.017	-0.006	-0.007	-0.001	-0.002	-0.002	-0.002
	-4.46***	-1.71*	-2.02*	-0.330	-0.720	-0.650	-0.600
Beta	1.305	1.256	1.213	1.058	1.089	1.117	1.133
	13.10***	15.30***	16.92***	9.91***	14.10***	17.64***	19.62***
SMB	0.617	0.558	0.554	0.489	0.578	0.597	0.598
	5.00***	5.09***	5.91***	4.37***	7.15***	7.93***	8.13***
HML	0.353	0.341	0.396	0.140	0.208	0.241	0.241
	2.07*	2.16*	3.28***	0.850	1.83*	2.39**	2.42**
UMD	-0.569	-0.516	-0.463	-0.427	-0.414	-0.401	-0.393
	-5.63***	-5.55***	-5.97***	-5.34***	-5.53***	-5.14***	-4.79***
Adjusted R-squared	0.730	0.725	0.750	0.728	0.782	0.795	0.804

Panel B: Accounting Fraud (n=92)	*[0; 6 months]*	*[0; 12]*	*[0; 18]*	*[0; 24]*	*[0; 30]*	*[0;36]*	*[0;48]*
Parameters							
Alpha	-0.023	-0.013	-0.013	-0.010	-0.008	-0.002	-0.003
	-2.88**	-2.06*	-2.29*	-2.18*	-1.88*	-0.470	-1.050
Beta	1.761	1.644	1.641	1.508	1.303	1.141	1.193
	8.34***	10.44***	11.78***	11.70***	12.43***	9.04***	10.50***
SMB	0.639	0.607	0.604	0.621	0.642	0.664	0.616
	2.89**	3.92***	4.57***	4.98***	5.63***	6.23***	7.70***
HML	0.310	0.615	0.772	0.714	0.517	0.545	0.532
	0.920	2.97**	4.06***	4.48***	3.61***	3.84***	3.82***
UMD	-0.712	-0.719	-0.591	-0.527	-0.436	-0.402	-0.396
	-4.08***	-4.79***	-4.07***	-5.30***	-5.04***	-4.36***	-6.80***
Adjusted R-squared	0.555	0.683	0.678	0.653	0.703	0.640	0.770

Table V continued

Panel C: Illegal Business Practices (n=218)	*[0; 6 months]*	*[0; 12]*	*[0; 18]*	*[0; 24]*	*[0; 30]*	*[0;36]*	*[0;48]*
Parameters							
Alpha	-0.015	-0.007	-0.007	0.001	0.001	0.002	0.002
	-2.33**	-1.240	-1.45$	0.270	0.250	0.580	0.590
Beta	1.372	1.333	1.274	1.176	1.184	1.167	1.186
	7.39***	8.18***	11.03***	6.82***	13.23***	12.69***	14.47***
SMB	0.616	0.756	0.681	0.498	0.673	0.681	0.691
	2.79**	4.10***	4.57***	2.63**	5.13***	5.58***	5.74***
HML	0.633	0.606	0.578	0.183	0.310	0.290	0.246
	2.12*	2.50**	3.38***	0.690	2.17*	2.17*	1.86*
UMD	-0.482	-0.528	-0.482	-0.444	-0.447	-0.456	-0.447
	-4.17***	-4.87***	-5.18***	-4.78***	-5.10***	-5.02***	-4.55***
Adjusted R-squared	0.464	0.562	0.621	0.616	0.722	0.736	0.760

Panel D: Insider Trading (n=128)	*[0; 6 months]*	*[0; 12]*	*[0; 18]*	*[0; 24]*	*[0; 30]*	*[0;36]*	*[0;48]*
Parameters							
Alpha	-0.009	0.011	0.006	0.012	0.009	0.010	0.009
	-1.050	1.33$	0.940	2.15*	1.94*	2.10*	1.93*
Beta	1.488	1.065	1.115	0.850	0.939	0.997	1.033
	6.57***	5.54***	7.95***	5.59***	7.51***	8.85***	10.53***
SMB	1.007	0.628	0.549	0.468	0.535	0.539	0.596
	3.93***	2.74**	3.32***	2.88**	4.19***	4.39***	5.06***
HML	0.821	-0.127	0.015	-0.359	-0.192	-0.129	-0.071
	1.99*	-0.340	0.060	-1.36$	-0.970	-0.700	-0.420
UMD	-0.754	-0.798	-0.649	-0.607	-0.561	-0.535	-0.466
	-3.26***	-3.04**	-3.82***	-4.38***	-5.12***	-4.77***	-4.71***
Adjusted R-squared	0.453	0.460	0.525	0.546	0.598	0.611	0.621

Panel E: Governance Problems (n=107)	*[0; 6 months]*	*[0; 12]*	*[0; 18]*	*[0; 24]*	*[0; 30]*	*[0;36]*	*[0;48]*
Parameters							
Alpha	-0.042	-0.022	-0.011	-0.003	-0.002	-0.003	-0.004
	-3.04**	-2.40**	-1.90*	-0.470	-0.280	-0.510	-0.810
Beta	1.661	1.533	1.326	1.161	1.192	1.185	1.269
	4.85***	6.79***	8.95***	6.33***	9.37***	9.30***	13.34***

Table V continued

SMB	0.679	0.706	0.737	0.487	0.635	0.623	0.585
	1.53$	2.91**	3.75***	2.23*	3.50***	4.16***	4.21***
HML	0.530	0.757	0.733	0.430	0.504	0.556	0.575
	1.060	2.39**	2.95**	1.35$	2.30*	2.65**	3.13**
UMD	-0.264	-0.131	-0.351	-0.235	-0.321	-0.269	-0.327
	-0.920	-0.570	-2.82**	-2.00*	-3.22***	-3.21***	-4.41***
Adjusted R-squared	0.243	0.371	0.453	0.388	0.517	0.525	0.592

Table VI: Long Term Performance in Calendar Time – Triggering Events

We conduct the same calendar time portfolio regression as in Table V but distinguish between class-actions that were preceded by "triggering events" (Panel A) or not (Panel B). Below we test for the significance of the differences in the estimated average alpha coefficients in the portfolio depending on their holding period.

Panel A: Trig. Event (n=359)	*[0; 6 months]*	*[0; 12]*	*[0; 18]*	*[0; 24]*	*[0; 30]*	*[0;36]*	*[0;48]*
Parameters							
Alpha	-0.019	-0.007	-0.008	0.000	-0.002	-0.002	-0.002
	-2.88**	-1.35$	-1.73*	-0.050	-0.390	-0.550	-0.500
Beta	1.294	1.180	1.098	0.920	0.983	1.035	1.031
	7.54***	9.00***	10.37***	7.06***	10.15***	11.64***	11.69***
SMB	0.650	0.720	0.699	0.634	0.694	0.734	0.759
	3.68***	4.94***	5.59***	4.44***	5.75***	6.59***	7.17***
HML	0.164	0.208	0.234	-0.102	0.057	0.125	0.110
	0.650	0.940	1.38$	-0.480	0.390	0.970	0.840
UMD	-0.425	-0.493	-0.488	-0.463	-0.448	-0.446	-0.416
	-3.81***	-4.23***	-5.76***	-4.41***	-4.65***	-4.55***	-4.21***
Adjusted R-squared	0.447	0.530	0.564	0.559	0.597	0.620	0.623

Panel B: No Trig. Event (n=290)	*[0; 6 months]*	*[0; 12]*	*[0; 18]*	*[0; 24]*	*[0; 30]*	*[0;36]*	*[0;48]*
Parameters							
Alpha	-0.012	-0.002	-0.004	-0.002	-0.002	-0.001	-0.001
	-2.07*	-0.360	-1.040	-0.530	-0.630	-0.200	-0.290
Beta	1.305	1.197	1.270	1.199	1.141	1.109	1.148
	8.21***	11.88***	13.28***	12.27***	12.30***	12.20***	15.63***
SMB	0.600	0.435	0.469	0.417	0.472	0.482	0.497
	3.50***	3.64***	4.69***	4.28***	5.99***	6.31***	6.63***
HML	0.447	0.361	0.494	0.345	0.267	0.247	0.267
	1.93*	2.25*	3.99***	2.90**	2.25*	2.12*	2.51**
UMD	-0.744	-0.587	-0.478	-0.427	-0.415	-0.391	-0.397
	-4.86***	-7.14***	-5.37***	-5.95***	-6.02***	-5.45***	-5.05***
Adjusted R-squared	0.615	0.671	0.687	0.721	0.743	0.746	0.774

Test for differences in Alphas	*[0; 6 months]*	*[0; 12]*	*[0; 18]*	*[0; 24]*	*[0; 30]*	*[0;36]*	*[0;48]*
Difference Triggering Event vs. No Triggering	-0.007	-0.005	-0.004	0.002	0.000	-0.001	-0.001
t-stat	-0.502	-0.255	-0.078	0.479	0.000	-0.150	-0.166

Table VII: Changes in Solvency Ratios and Default Probabilities Pre and Post Lawsuit Filing

In the table below, we compare financial and accounting variables between periods of pre-lawsuit initiation to post-lawsuit filing. We use daily data for volatility and cumulative returns as well as for our inputs to the probability of default. Our pre-lawsuit period starts 270 trading days before the filing and ends 21 days before the filing. Our post-lawsuit period starts 21 days after the filing and ends 249 days later for a total post-lawsuit period of 270 days. We accumulate daily log returns in order to arrive at pre- and post-event period cumulative returns. Volatility is the annualized value of the standard deviation of daily stock returns, whereas we multiply daily standard deviation with the square root of the number of available trading day returns. We use annual COMPUSTAT data for cash to assets (COMPUSTAT item #1/COMPUSTAT item #6), net worth to assets ([item #6 – item #181] / item #6), leverage ([item #9 + item #34] / item #6), Tobin's Q ([item #6 + item #25 * item #199 – item #60 – item #74] / item #6), EBIT/Assets ([item #18 + item #16 + item #15] / item #6), and book-to-market (item #60/[item #25 * item #199]). Our measure of *F, E* follows the procedure from Bharath and Shumway.

*Naïve sigma (σ_E)*and *probability of default* are computed as $\sigma_V = \frac{E}{E+F}\sigma_E + \frac{F}{E+F}(0.05 + 0.25 * \sigma_E)$, Naïve DD = $\frac{ln[(E+F)/F]+(r_{it-1}-0.5\ naive\ \sigma_V^2)T}{naive\ \sigma_V\sqrt{T}}$ and $\pi_{\text{naive}} = N$(- naïve DD),

respectively. For both time periods our estimation horizon *T* is one year (i.e. *T = 1*). The face value of debt (F) is debt in current liabilities (item #34) plus one half long-term debt (item #9). The market value of equity *E* is the number of shares outstanding (item #25) times the share price (item #199).

We winsorize all of our variables (except for the probability of default and naïve sigma) at the 1st and 99th percentile. In Panel B, we test for statistical significance in mean values between pre- and post-lawsuit periods. We report these in the "average" column and denote 10, 5, and 1% significance with *, **, and ***, respectively. If any of these variables in Panel B indicates significant then this difference is with the pre-lawsuit period in Panel A. Panel C distinguishes between the types of allegations that the firms face and whether a triggering event has preceded the lawsuit filing. Row 2 of Panel C spans a longer time period of 290 days. We use three types of variables, which all encompass different time windows. Variable I uses -270 to -21 trading days, II uses -270 to +21, while III is the post litigation period of +21 to 270 trading days.

Panel A: Pre-Lawsuit				*Quantiles*			
Variable	**Average**	**Median**	**Std. dev.**	**Min**	**Max**	**25%**	**75%**
Annualized Volatility (σ_E)	54.90%	46.91%	28.76%	11.71%	162.32%	32.51%	72.59%
Cumulative Returns	-35.08%	-24.19%	66.49%	-262.50%	93.89%	-70.40%	7.61%
Face Value Debt (F)	$15,702.53	$486.43	$59,789.03	$0.00	$377,748.75	$52.75	$2,980.75
MV of Equity (E)	$18,883.36	$4,228.13	$40,711.68	$132.16	$250,313.86	$1,279.86	$15,947.06
Naïve Sigma	48.66%	41.88%	27.86%	10.44%	162.29%	26.40%	65.93%
Probability of Default	12.09%	0.00%	26.50%	0.00%	100.00%	0.00%	2.87%
Cash to Assets	16.00%	8.58%	17.87%	0.06%	72.98%	2.44%	23.78%
Net Worth to Assets	41.62%	41.17%	24.69%	-7.10%	94.00%	21.35%	60.55%
Leverage	24.41%	22.99%	19.32%	0.00%	84.21%	6.78%	37.06%
Tobin's Q	2.5044	1.6769	2.2227	0.4613	19.7191	1.1471	2.9281
EBIT/Assets	7.29%	6.93%	11.01%	-33.77%	35.66%	2.60%	12.95%
Book-to-Market	0.4368	0.3668	0.3420	-0.0681	1.8852	0.1967	0.5852

Table VII continued

Panel B: Post-Lawsuit

Annualized Volatility (σ_E)	53.63%	46.35%	32.66%	7.38%	179.09%	30.21%	71.02%
Cumulative Returns	-2.01%***	1.03%	62.42%	-172.44%	188.39%	-34.80%	32.14%
Face Value Debt (F)	$21,246.48***	$564.69	$81,117.53	$0.00	$463,598.00	$65.96	$3,234.51
MV of Equity (E)	$17,694.45***	$3,395.01	$39,110.14	$15.79	$241,690.27	$855.23	$14,105.82
Naïve Sigma	46.32%***	40.46%	26.25%	10.29%	179.09%	27.43%	60.54%
Probability of Default	10.90%	0.00%	25.32%	0.00%	100.00%	0.00%	1.61%
Cash to Assets	16.60%***	10.68%	16.60%	0.11%	71.74%	3.83%	24.84%
Net Worth to Assets	37.08%***	38.01%	27.23%	-58.58%	89.84%	16.65%	56.30%
Leverage	25.79%*	23.37%	22.03%	0.00%	110.34%	7.09%	36.08%
Tobin's Q	1.8474***	1.3810	1.2384	0.7744	7.2656	1.0563	2.1356
EBIT/Assets	2.78%***	4.83%	16.36%	-77.07%	32.37%	0.39%	9.62%
Book-to-Market	0.4624	0.4724	0.8440	-5.4385	2.7363	0.2525	0.6943

Panel C: Expected Default Probabilities (π_{naive}) and volatilities per Class-Action Group and Time Window	**All Firms**	**Accounting Fraud**	**Illegal Business Practices**	**Insider Trading Allegations**	**No Triggering Event before Lawsuit Filing**	**Triggering Event before Lawsuit Filing**	**N**
π_{naive} I [– day 270; – day 21]	12.09%	16.82%	9.01%	9.18%	14.46%	9.76%	556
π_{naive} II [–270; +20]	16.96%	20.80%	15.37%	14.32%	19.11%	15.32%	553
π_{naive} III [+21; +270]	10.90%	12.36%	10.42%	10.15%	13.08%	8.93%	458
Annualized σ_E I [– 270; –21]	54.90%	51.35%	54.98%	64.29%	56.25%	53.82%	649
Annualized σ_E II [– 270; +20]	64.18%	56.71%	64.61%	73.46%	64.59%	63.85%	646
Annualized σ_E III [+21; +270]	53.63%	51.40%	56.19%	58.72%	56.80%	51.07%	646
Difference π_{naive} I – π_{naive} III	1.19%	4.46%	-1.41%	-0.98%	1.38%	0.83%	
Difference π_{naive} II – π_{naive} III	6.06%***	8.45%	4.95%***	4.17%***	6.04%***	6.39%***	
Difference σ_E I – σ_E III	1.27%	-0.04%	-1.21%	5.57%	-0.55%	2.74%	
Difference σ_E II – σ_E III	10.55%***	5.32%*	8.42%*	14.74%	7.79%	12.78%***	