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Do Investors Price Accruals Quality for Firms Charged with Poor Reporting Quality?

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ABSTRACT

Using a sample of firms that were sued under Rule 10b-5 of the Securities and Exchange Act of 1934, I examine the relationship between accrual quality and market reaction for these sued firms at the revelation date (the date the bad news about firms' true financial performance was first revealed to the public), the announcement date (the date the filing of the lawsuits was announced to the public) and the subsequent five periods following these dates. Empirical results using abnormal total accruals as proxy for accrual quality suggest that investors: 1) react more positively to firms with higher total abnormal accruals (poorer accrual quality) around the revelation date and the subsequent one month; 2) react more negatively to firms with poorer accrual quality at the date of litigation announcement; results do not suggest a relation between accrual quality and the post-litigation drift. Investors' behavior examined in this study is consistent with the well-established cognitive bias in behavioral finance theory.

Keywords: *Class-action lawsuit, Accrual quality, Market Reaction*
JEL classification: M4

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1. INTRODUCTION

The primary purpose of this paper is to examine whether investors price the implications of accrual quality for a sample of firms sued under Rule 10b-5 of the Securities and Exchange Act of 1934 for the provision of misleading financial information. The research question is examined on two dates: revelation date when the firms had to reveal its true (poor) financial performance to the public and the announcement date when the filing of a lawsuit is announced to the public. I also examine whether investors fail to fully appreciate the implications of accrual quality for lawsuit outcomes, leading to post-revelation and post-litigation announcement drift.

Empirical results using abnormal total accruals as proxy for accrual quality suggest that investors: 1) react more positively to firms with higher total abnormal accruals (poorer accrual quality) around the revelation date and the subsequent one month; 2) react more negatively to firms with poorer accrual quality at the date of litigation announcement; results do not suggest a relation between accrual quality and the post-litigation drift.

This paper contributes to accounting research by investigating investors' response and behavior towards the market's financial news, their ability and efficiency in processing the implication of accrual quality for a unique sample--firms that have provided misleading information to the public and were later sued by investors for damages resulting from the disclosure of the firms' true financial performance. Further, this study extends market efficiency research by examining whether the drift associated with litigation announcements is in part the result of investors' failing to fully appreciate the implications of accrual quality for lawsuit outcomes.

The paper is organized as follows: In section II, I develop the hypotheses after a review of the literature. In section III, I discuss the research design, which includes the sample selection, variables and descriptive statistics. Section IV presents the main results, and Section V discusses some robustness checks, and the last section concludes.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Market Reaction to Litigation

Shareholders in the US are entitled to file a class-action lawsuit against a firm if they believe their agents have violated the duty of loyalty or duty of care (Shleifer and Vishny 1997). Under the Section 10b-5 of the Securities and Exchange Act of 1934, investors may sue a firm to recover damages if they are harmed (usually manifested in a drastic stock price decline) by the firm's false or misleading information or the firm's failure to disclose materially relevant information to them. A company's false or misleading information would inflate the stock price and the subsequent disclosure of the firm's true situation would cause the stock price to decline sharply, resulting in investors' losses and ultimately a class action lawsuit against the company. From 1996 to 2010, more than 2,000 issuers were named as defendants in lawsuits. The potential legal liability that the firm faces can be substantial. The average class action settlement between 1991 and 1999 was about $8 million (Griffin et al. 2000). Damages can be critical to a firm's financial health and to its long-term survival.

More recently, especially in the wake of Enron, new laws and regulations were enacted to fight against accounting fraud. Sarbanes-Oxley, for example, implemented reforms for corporate environment: created PCAOB to oversee the activities of the auditing profession, required certification of financial statements, established testing and certification of internal controls over financial reporting and enhanced corporate governance and audit committees. Sarbanes Section 304

even provides companies with the right to claw back bonus money during a period when the company's financial statements were misstated. However, the new measures and laws did not stop the firms from providing misleading information and causing financial damage to investors. Based on Stanford Law School research, Securities Class Action Filings rose to 189 filings in 2015, the highest level since 2008.

The litigation process usually involves several important dates. The beginning and ending dates of the class action period cover the period over which damages are claimed to have occurred. The revelation date is when the announcement of bad news regarding the firms' financial condition is first revealed to the public. This is followed by the lawsuit filing (i.e., announcement) date and the court's decision date. These are described in the timeline provided in Figure 1. Prior research examines the market reaction on several of these dates and shows that investors generally react negatively to the bad news and subsequent lawsuit announcement.

Using the NASDAQ composite market return as a benchmark to measure the daily excess return, Griffin et al. (2000) examine the stock price reaction at the time of the litigation announcement and a subsequent extended period. They find a significant negative price reaction at the litigation announcement and a negative post-announcement drift that persists for about three weeks. They also document that the price responses are more pronounced in smaller firms and firms with less analyst coverage. In a companion paper, Griffin et al (2004) collect approximately 3,000 federal class action securities fraud lawsuits from 1990 to 2002 and show that investors respond at the beginning of the class period, the revelation date and the litigation announcement date, indicating that the market treats these three events as closely related. For a sample of 89 lawsuit firms, Ferris and Pritchard (2001) study the revelation, filing, and decision dates of the lawsuit and find a large negative reaction to the first event, a smaller but significant reaction to the second event, and an insignificant reaction to the resolution of the motion to dismiss. They also find that certain firm-level characteristics, namely a firm's beta, skewness of returns, free cash flow, debt ratio, market-to-book ratio, equity holdings by institutional investors, and percentage of independent directors, explain stock return variability around these events.

More recent studies include Bauer and Braun (2010) and Gande and Lewis (2009). Bauer and Braun (2010) examine the long-term performance of the class-action lawsuit firms. They find that the lawsuit firms are generally negatively impacted both in the short term and over a longer horizon, with a recovery of stock price highly dependent on whether the litigation is related to class-action, stock price manipulation, accounting fraud, errors in financial statements, illegal business practices, insider trading, false or misleading statements, SEOs, initial public offerings (IPOs), or acquisitions. Gande and Lewis (2009) find negative stock price reactions to securities class action lawsuits for a sample of 377 lawsuit firms from 1996- 2003.

To summarize, researchers have examined both the long-term and short-term performance effects of litigation on corporations. Examination of the market reactions covers different periods/dates of the event and firm-level characteristics that may explain the variability of the market reaction. However, none of these previous studies examines the role that accrual quality plays in explaining the variability of the market reaction to this corporate event.

2.2. Market Reaction to Accrual Quality

Prior research indicates that poor quality earnings and financial information send negative signals to the market, and investors discount the information they obtain about the firm and adjust downward their expectation about the firm's future performance to the extent they are aware that the information provided is of poor quality. Using a sample of 230 SEOs in 1987-1990, Rangon (1998) finds that

signed abnormal accruals, as a proxy for accrual quality, are negatively related to stock returns in the year following a seasoned equity offering (SEO). Similarly, Teoh, Welch, and Wong (1998a) report that discretionary accruals in the year before SEOs are negatively related to abnormal stock returns over the four-year post-offering period. Teoh et al. (1998b) and DuCharme, Malatesta and Sefcik (2001) document similar findings for IPO firms. These findings suggest that the level of abnormal accruals during or before these corporate events significantly impact investors' perceptions and expectations of future performance.

Compared with the above papers by Rangan (1998), Teoh, Welch and Wong (1998a, 1998b) and Ducharme et al (2001), my paper investigates similar question for a different sample, specifically a group of firms that were sued for issuing misleading information to the public. This sample is unique for two reasons: First, it has two distinct but related event dates: the revelation date and the announcement date, and thus providing a unique perspective to examine investors' reaction to market news and to examine if investors have the ability to process new information and to understand the implication of accrual quality in a timely manner; second, the sample firms under study were sued for having provided misleading information or statements to the public, and hence, it is reasonable to assume that investors were somewhat aware of the poor reporting quality of these firms at revelation and around the announcement date. Whether investors still price accrual quality when reporting quality of the firms is already in doubt is an interesting question not yet studied in any previous research.

2.3. Accrual Quality and the Litigation Announcement

When plaintiff's attorneys decide to file a lawsuit against a firm, this signals to the market that a potential financial liability is likely to occur in the foreseeable future. The potential settlement amounts are assessed by the plaintiffs' attorneys through an evaluation of the magnitude of damages due to the drastic decline of the stock prices following the corrective disclosure. Research in accrual quality and litigation suggests that poorer accrual quality resulting from earnings management is associated with higher litigation cost.

Using a sample of 781 firms sued in class action securities litigation from 1988 to 2000, Lu (2003) finds that earnings management in the form of income-increasing accruals is associated with allegations of manipulation over the same period in subsequent private securities litigation and is also an important indicator of the magnitude of the settlement at the conclusion of the cases. Grimm (2009) also finds higher settlement amounts for firms with larger abnormal accruals even after controlling for return performance and hard evidence events such as restatements and SEC investigations. Similarly, DuCharme et al. (2004) show that the abnormal accruals of lawsuit firms are positively related to the settlement amounts for a group of SEO and IPO firms. These results indicate that accrual quality, an indication of the degree of earnings management, is an important factor affecting firm value and thus value relevant in the litigation context. Chalmers, Naiker and Navissi (2011) examine the accrual (earnings) quality of firms sued under Rule 10b-5 securities fraud class action lawsuits relative to the accrual (earnings) quality of a matched control sample of firms prior to and following the Private Securities Litigation Reform Act (PSLRA). Results indicate that sued firms overstate earnings resulting in significantly lower earnings (accrual) quality in both the Pre- and Post-PSLRA periods, consistent with Grimm's conclusion that accounting-based securities class action lawsuits are generally merit-based.

In summary, investors react negatively to shareholder lawsuits, lawsuits are associated with firms that have lower accrual quality (i.e., larger abnormal accruals), and lower accrual quality has been linked to costlier lawsuit outcomes. Together, these findings suggest that investors should condition

their reaction to lawsuits based on their perception of accrual quality as reflected in abnormal accruals at the filing of the lawsuit. If investors incorporate this accrual quality information into their firm valuation process at the announcement of the filing, I expect that there should be a more negative price reaction for the accounting-based lawsuit firms with lower accrual quality (i.e. larger abnormal accruals) at the lawsuit announcement date. Therefore, my first hypothesis is stated as follows (alternative form):

> *H1: For firms subject to a lawsuit, those with lower accrual quality (i.e., more income increasing abnormal accruals) will experience a more negative stock price reaction at the announcement of the lawsuit.*

Alternatively, I may not find an association between past accrual quality and the stock price reaction at the announcement of the lawsuits. In part, H1 assumes a relation between past accrual quality and the extent to which investors revise expectations based on the announcement of a lawsuit. Since the lawsuit under Rule 10b-5 is usually related to misrepresentation of firms' financial information or failure to disclose materially important information, investors may revise their assessment of accrual quality. In other words, investors may not price past accrual quality at the announcement of the litigation if it no longer is related to current accrual quality.

Also working against H1 is the potential for investors to place too much weight on earnings quality in assessing the risk of a lawsuit prior to the lawsuit announcement. This could lead to greater surprise factor for firms with higher earnings quality at the announcement of the lawsuit, suggesting a more negative market reaction for firms with higher rather than lower earnings quality. Whether this surprise factor exists and is sufficiently strong to counteract the market reaction to the implications of earnings quality for lawsuit outcomes at the announcement date is an empirical question. A third factor working against H1 is evidence of downward price drift following the litigation announcement. Drift suggests that investors underreact, which may also reduce the likelihood of observing a relation between accrual quality and the market reaction at the announcement date. Whether this underreaction is related to accrual quality and whether underreaction to accrual quality decreases the ability to observe an announcement day effect is an empirical question.

2.4. Post-litigation Drift

Research in litigation suggests that there is post-litigation announcement drift, i.e. significant negative stock returns in the weeks or months following the litigation announcement (Griffin et al 2000; Bauer and Braun 2010). Sloan (1996) and Xie (2001) have linked abnormal accruals to future stock returns. Regarding signed abnormal accruals, prior research suggests a relation between larger income-increasing abnormal accruals and higher litigation costs. Therefore, one explanation for the post-litigation drift may be that investors underreact to the information in signed abnormal accruals at the litigation announcement date.

Regarding unsigned abnormal accruals, previous research has shown that investors react to news more slowly in the presence of greater uncertainty. Using a number of proxies for information uncertainty, Zhang (2006) reports that greater information uncertainty leads to relatively lower (higher) future returns following bad (good) news compared to stock returns of firms with less information uncertainty. Using measures based on unsigned abnormal accruals to proxy for information uncertainty, Francis et al. (2007) empirically test the effect of the uncertainty parameter on the predictability of prices and find that post-earnings announcement drift is more pronounced for

firms with high information uncertainty (i.e. low accrual quality). These results suggest that the market reaction at the announcement date is incomplete in the presence of high information uncertainty as captured in the absolute magnitude of abnormal accruals. Hence, the second hypothesis is as follows (in alternative form):

H2: Lawsuit firms with lower accrual quality experience more downward drift in stock prices following the announcement of the litigation.

2.5 Market Reaction at the Revelation of Bad News

As discussed earlier, the revelation date refers to the time when the company can no longer withhold poor financial performance from the public. The adverse news results in a negative market reaction, causing damages to investors and potentially leading to a lawsuit. Earlier research suggests that the negative market reaction at the revelation of the bad news can be stronger and post-announcement drift can last longer than that around the announcement of the litigation (Ferris and Pritchard 2001). The market reaction at the revelation of bad news is used by plaintiffs' attorneys to support the filing of a lawsuit and to estimate damages. Hence, it is reasonable to expect that investors revise their assessments of both the likelihood of a subsequent lawsuit and the potential costs of litigation at the revelation date.

Class action lawsuits hurt the firm's reputation, distract management's attention and impact firm's financials (Fields 1990). High settlements may even affect the firms' future viability. Prior research indicates that firms with lower accrual quality have a higher litigation risk because poor accrual quality can distort the appearance of a firm's financial situation and conflicts with shareholders' interest, contributing to the occurrence of a lawsuit. If litigation imposes (substantial) costs that reduce firm value (Zingales 2007; Palmrose, Richardson and Scholz 2004; Ferris and Pritchard) and if, based on a rational expectations model, investors anticipate the value-destroying litigation (Caskey 2010), then investors may price the implications of accrual quality for litigation risk and outcomes at the revelation date, resulting in a more negative price reaction to the release of the bad news for lower accrual quality firms. Given that litigation is not certain at the revelation date, the effect may not be as strong as at the litigation announcement date, however, it may, to some degree, preempt the subsequent pricing of accrual quality at the litigation announcement date. As a result, I also investigate the market reaction to bad news at the revelation date as it relates to accrual quality reflected in signed abnormal accruals:

H3: For firms that announce bad news who become subject to a lawsuit, those with lower accrual quality (i.e., more income increasing abnormal accruals) will experience a more negative stock price reaction when the bad news was first revealed to the public.

Complementary to this, I investigate whether lower accrual quality as reflected in signed and unsigned abnormal accruals as indicators of future litigation risk and costs and greater uncertainty, respectively, is related to post-revelation drift, hence, the following hypothesis (alternative form):

H4: Lawsuit firms with lower accrual quality experience more downward drift in stock prices following the revelation of bad news.

3. DATA AND RESEARCH DESIGN

3.1. Data and Sample Selection

The "shareholder lawsuit" sample is hand collected from the Stanford Law School Securities Class Action Clearinghouse (SCAC) database (http://securities.stanford.edu) and is comprised of firms that were targets of rule 10(b)-5 litigation from the year 1996 to the year 2010. The database, updated each business day, covers all securities class actions filed in Federal Court after the Private Securities Litigation Reform Act of 1995 came into effect. It contains filings from the Public Access to Court Electronic Records (PACER) database and also collects information from documents filed with the U.S. Securities and Exchange Commission (SEC), press releases and news articles, and academic sources. Another widely-used accounting-related fraud database--SEC's Accounting and Auditing Enforcement Release (AAER)--mostly contains civil lawsuit actions brought by the Commission in the federal court against individuals, private as well as public companies for possible violations of the federal securities laws. Since the focus of this paper is class-action lawsuits, SCAC database from Stanford Law School Website is appropriate and sufficient for the purpose of this study.

From this data source, I collect the following information: firm name, ticker, the date the complaint was filed, class action beginning of the period, class action ending of the period, type of litigation and litigation status (settled, dismissed or open). For most cases, plaintiffs claim damages that resulted from stock purchases at inflated share prices due to either management's misrepresentation or failure to disclose. I retain firms where the suit was filed in federal court against a corporation, the suit claimed wealth damage and alleged fraud involving the price of the defendant's common stock, and the case alleged misrepresentation of financial information and omissions regarding the true financial condition of the company.

Firms also must have sufficient data to calculate the accrual quality measures and market measures discussed in section 3.3. As in prior research, financial institutions (SIC codes 6000 to 6999) and utility firms (SIC codes 4900 to 4999) are also excluded because these firms are in regulated industries where calculating discretionary accruals is problematic (Becker et al. 1998).

3.2. Litigation Related Dates and Time Periods

As briefly described earlier and illustrated in Figure 1 (See Appendix A), there are various dates around the litigation event that have been examined by prior research. My primary interest is in the litigation announcement date as well as the post-litigation period following the announcement of the lawsuit. However, I also analyze the revelation-date market reaction, when corrective disclosures reveal poor financial performance, and the post-revelation drift period. In this paper, the revelation date, based on the most recent disclosure, is defined as the end of the class action period as in Griffin et al (2004).

The mean and the median number of days between different dates are also presented in Appendix A.

3.3. Accrual Quality Measure

To proxy for abnormal accruals, I use the signed residuals from the modified Jones (1991) model. These abnormal accruals reflect that portion of total accruals that are likely to be managed by management. Following prior research, I take the view that income-increasing (decreasing) abnormal accruals are indicative of lower (higher) accrual quality.

Following Dechow et al (1995), the modified Jones model is first estimated cross-sectionally in the year prior to the lawsuit being filed using all firms in the same two-digit SIC code as the lawsuit firms but excluding the lawsuit firm:

$$TA_{it} = \beta_0 + \beta_1 * (\Delta REV_{it} - \Delta REC_{it}) + \beta_2 * PPE_{it} + \varepsilon \quad (1)$$

where:

TA = total accruals = EBXI-CFO (cash flow statement approach);
ΔREV = revenues in year t less revenues in year t-1;
ΔREC = receivables in year t less receivables in year t-1;
PPE = gross property, plant, and equipment in year t;
EBXI = Earnings before extraordinary items;
CFO = Cash flow from operations;
i = firm subscript; and
t = a year subscript, referring to the year prior to the year of litigation announcement.

All variables are scaled by lagged total assets. The industry-specific parameters ($\beta_0, \beta_1, \beta_2$) estimated from the above regression are then used to calculate the predictable or normal component of total accruals by summing the products of the parameters and the lawsuit firm variables from the same time period. Abnormal accruals (*AbnTA*) are the difference between the lawsuit firm's total accruals and their normal accruals, as represented by the following equation:

$$AbnTA_{it} = TA_{it} - (\hat{\alpha} + \hat{\beta}_1[\Delta REV_{it} - \Delta REC_{it}] + \hat{\beta}_2 PPE_{it}) \quad (2)$$

The underlying assumption of this two-step procedure is that the normal accruals of the lawsuit firm are the expected accruals level of the firm and can be considered typical in the industry (Teoh et al. 1998a). Hence, the normal accruals of all firms in the same two-digit SIC code can be used to benchmark the expected accruals of the lawsuit firms.

Similarly, I also estimate abnormal accruals using the model first developed by Dechow and Dichev (2002) (referred to as "DD") and later augmented by Francis et al (2005), where working capital accruals (total current accruals) are regressed on prior period, current period, and future period cash flow from operations as well as the Jones model variables. Results from this measure and from the absolute value of abnormal accruals are all included in the sensitivity test.

3.4 Model Specification for Testing Hypotheses

To test H1, whether firms with lower accrual quality experience a more negative price reaction around the filing announcement, I employ the following regression model:

$$CAR = \alpha + \beta_1 * AbnTA + \beta_2 * SIZE + \beta_3 * BETA + \beta_4 * SKEW + \beta_5 * FCF + \beta_6 * MTB + \beta_7 * INST + \beta_8 * PID + \beta_9 * NumAnalyst + \varepsilon \quad (3)$$

where *CAR* is the cumulative abnormal return with CAR1 representing days (0, 1) relative to the litigation announcement date and where abnormal returns are measured as the firm's return less the value-weighted market index return. AbnTA is firms' abnormal total accruals, one of the two proxies for low accrual quality (Test results using abnormal current accruals are discussed in the additional analysis and discussion section of the paper). Thus, if lawsuit firms with lower accrual quality experience a more negative price reaction at the lawsuit announcement date (H1), then I expect β_1 to be negative.

Prior research suggests a number of factors that are associated with the market reaction to the filing announcement of the litigation (Ferris Pritchard 2001). These factors can be classified into three groups that represent firms' characteristics in three metrics: (1) litigation risk. The underlying reasoning is that firms with higher probability of being sued (higher litigation risk) are more likely to generate a more significant negative market reaction relative to firms with lower litigation risk. These variables include firm size (SIZE), beta (BETA) and skewness (SKEW) of returns. (2) Corporate governance. Firms with better corporate governance are generally associated with lower litigation risk, and hence are less likely to be associated with a negative market reaction. These variables include free cash flow (FCF) and the market-to-book (MTB) ratio. Free cash flow captures the agency conflicts in that it represents excess cash flow held by the company but that could be available for distribution among all the securities holders. Increases in free cash flow may reflect substantial cuts in capital spending, which may be due to the slowing down of sales growth. Free cash flow is expected to be negatively correlated with announcement returns. Higher market-to-book ratios suggest higher potential for growth. Growth opportunities may reduce managers' incentives to manage income higher. Thus, market-to-book is expected to be positively associated with market reactions. (3) Information asymmetry. Firms with higher information asymmetry are more likely to withhold bad news from the public and withhold longer than firms with lower information asymmetry, and thus are more likely to produce (negative) market surprises with the revelation of bad news and the announcement of the litigation. These variables include the percent of institutional equity holdings (INST), the percent of independent directors (PID) and analyst following (NumAnalyst). Percent of equity holdings by institutional investors is calculated as the percent of shares outstanding held by institutional investors. Firms with a higher percentage of institutional investors are more likely to have a more transparent information environment because these firms are more likely to disclose information due to the pressure from the institutional investors, who have more power than individual investors. Moreover, securities analysts are more likely to follow companies held by a high percentage of institutional investors, reducing the information asymmetry between the investors and management. A more timely and accurate information flow reduces the market reaction at an announcement. Therefore, institutional equity holdings are expected to be positively related to market returns at the announcement of litigation. Ferris and Pritchard (2001) find a positive relation between institutional equity holding and market reaction at the revelation of bad news and the announcement of litigation. Firms with less analyst coverage are more likely to be associated with slower information flow (Hong et al 2000) and hence higher information asymmetry. Therefore, I expect a positive association between analyst following and the market reaction.

Hypothesis 2 predicts that lower accrual quality firms are associated with more downward drift at the announcement of the litigation. To test this hypothesis, I first verify that there is a downward drift following the announcement of the litigation by examining the monthly stock returns over the six months following the announcement date. Then I test H2 using a version of equation (4) with CAR being defined as cumulative abnormal returns following the litigation announcement date for five time periods, CAR30 = [2, 30], CAR60 = [2, 60], CAR90 = [2, 90], CAR120 = [2, 120], and CAR180 = [2, 180]. If lawsuit firms with lower accrual quality experience more negative price drift following the lawsuit announcement (H2), then I expect β_1 to be negative.

The test of H3 is very similar to the test of H1, and the tests of H4 is very similar to the tests of H2, with the exception that these tests will be conducted using CARs at and following the revelation of bad news (i.e., CAR1, CAR30, CAR60, CAR90, CAR120, and CAR180). For the stock price drift tests, I shorten the longest CAR horizon to be up to two days prior to the litigation announcement.

4. EMPIRICAL RESULTS

For the firms that were sued between 1996 and 2010, 545 firms at the date the bad news about the firms' financial performance was revealed to the public (referred to as "revelation date") and 590 firms at the date the lawsuits were filed (referred to as "announcement date") satisfy the data requirements to calculate the accruals measure and other variables (excluding the variable of independent directors). Only 163 firms satisfy the data requirements when the percent of independent director variable (PID) is included. Since a large number of lawsuit firms are lost when the PID variable are included, results are presented with the requirement that firms have PID will be disclosed in additional (sensitivity) test.

4.1. Descriptive Statistics

Table 1: Descriptive Statistics

Panel A: Descriptive statistics of independent variables one year prior to the revelation year & one year prior to the litigation announcement year.

	At revelation date:				At announcement date:			
Variable	Mean	Median	Lower Quartile	Upper Quartile	Mean	Median	Lower Quartile	Upper Quartile
EBXI	0.010	0.054	-0.007	0.102	-0.019	0.027	-0.097	0.098
CFO	0.057	0.079	0.005	0.153	0.064	0.080	-0.008	0.158
TA	-0.060	-0.054	-0.121	0.003	-0.070	-0.056	-0.120	-0.003
TCA	0.130	0.028	-0.025	0.148	0.108	0.023	-0.028	0.121
NormTA	-0.155	-0.154	-0.234	-0.076	-0.158	-0.160	-0.238	-0.085
AbnTA	0.096	0.103	0.006	0.199	0.089	0.098	0.007	0.197
SIZE	6.388	5.977	4.872	7.856	6.419	5.968	4.945	7.845
FCF	0.076	0.099	0.016	0.169	0.061	0.090	0.001	0.155
MTB	3.713	2.454	1.469	4.545	3.537	2.360	1.398	4.214
SKEW	0.038	0.182	-0.479	0.624	-0.720	-0.319	-1.649	0.343
BETA	1.288	1.208	0.797	1.677	1.267	1.143	0.807	1.618
NumAnalyst	9.054	7.000	3.000	13.000	9.137	7.000	3.000	13.000
INST	0.593	0.636	0.345	0.822	0.593	0.632	0.343	0.828
PID	0.577	0.615	0.333	0.778	0.570	0.600	0.333	0.750

This panel A of table 1 provides the mean, median, the lower quartile and upper quartile of all the independent variables and dependent variables of the lawsuit firms. *AbnTA* is abnormal total accruals and is the difference between the lawsuit firms' total accruals and the normal accruals. For specific calculation of normal accruals, refer to section 3.3: accrual quality measure. *SIZE* is measured as the log of total assets at the end of the year preceding the year of the lawsuit filing. *Free cash flow (FCF)* is measured as the operating income before depreciation minus taxes, interest expenses, preferred dividends and ordinary dividends and then normalized by total assets of the prior year. *MTB:* Market-to-Book ratio is calculated as the market value of equity divided by the book value of equity. *BETA* is the slope coefficient from the market model using the value-weighted CRSP market return estimated over days (-250, -10) relative to the date of the revelation date and the announcement date. SKEW is the SKEWness of the firms returns measured over the same period

as firms' BETA. *NumAnalyst* is calculated as the natural log of the number of analysts following the firm in the year of the revelation (litigation). *INST* is calculated as the percent of shares outstanding held by institutional investors in the year of revelation (litigation). *PID* is calculated as the percent of independent directors on the boards in the year of revelation (litigation).

In Panel A of Table 1, mean *AbnTA* is both positive one year prior to the revelation year (0.096) and one year prior to the announcement year (0.089). The mean beta of these firms is around 1.3, suggesting that the stock performance of these firms are generally a little more volatile than the market. Mean market-to-book ratio is greater than 3.5, suggesting that these firms may be overvalued and are likely to be growth firms. Also, about 59% of the shares of these lawsuit firms were held by institutional investors one year prior to the year of the revelation (and one year prior to the year of the litigation announcement) and about 57% of the directors on the boards one year prior to the year of revelation and the litigation announcement year were independent directors. On average, 9 analysts were following these lawsuit firms during the two periods.

Table 1-continued

Panel B: Descriptive statistics of dependent variables at revelation date

At revelation date:					At announcement date:			
Variable	Mean	Median	Lower Quartile	Upper Quartile	Mean	Median	Lower Quartile	Upper Quartile
car1	-0.22	-0.20	-0.33	-0.08	-0.02	-0.01	-0.04	0.02
car30	-0.24	-0.21	-0.36	-0.10	-0.03	-0.03	-0.13	0.07
car60	-0.26	-0.25	-0.40	-0.07	-0.02	-0.01	-0.15	0.11
car90	-0.27	-0.25	-0.47	-0.05	-0.02	-0.01	-0.20	0.14
car120	-0.23	-0.17	-0.46	-0.03	-0.01	0.00	-0.20	0.17
car180	-0.19	-0.16	-0.41	0.01	0.01	-0.01	-0.22	0.23

This panel B of table 1 provides the cumulative abnormal returns sequentially around the revelation date and the announcement date, and during five subsequent accumulation periods after these dates. CAR1 = [0,1], CAR30 = [2, 30], CAR60 = [2, 60], CAR90 = [2, 90], CAR120 = [2, 120], and CAR180 = [2, 180] relative to the revelation date and the litigation announcement date respectively.

Panel B of table 1 provides the cumulative abnormal returns sequentially around the revelation date and the announcement date. From the panel, we can see that mean returns are persistently negative, except for the period CAR (0,180) following the litigation announcement date. Figure 2 (in Appendix A) presents a graphic representation of these cumulative abnormal returns around these two event dates and the subsequent periods. From this figure, we can see that when the bad news is first released to the public, the market responds negatively to it. Following this reaction, there is generally a downward drift over the next few months and then prices gradually went up. The mean cumulative abnormal return around the announcement date is negative and there is a much smaller downward drift for the first month (0,30) following the litigation, generally consistent with prior research that the downward drift following the litigation lasts for about three weeks (Griffin et al. (2000)).

4.2. Correlation Analysis

Table 2 (see next page) provides the correlation matrix for the variables used in the study. Most correlations are consistent with expectations, particularly those relating net income (EBXI), accruals (TA), cash flows (CFO), and abnormal total accruals (*AbnTA*). For example, EBXI is positively correlated with TA, CFO, and *AbnTA*. Further, CFO is negatively related to TA. Also of interest, net income is greater for larger firms (SIZE), firms with higher free cash flows (FCF), and firms with greater market-to-book ratios (MTB). Further, larger firms have more analysts following (NumAnalyst) and a higher proportion of institutional holdings (INST). These correlations are generally consistent with prior studies examining similar variables.

Table 2: Correlation matrix for independent variables used in the study

	EBXI	CFO	TA	CA	NormTA	*AbnTA*	SIZE	FCF	MTB	SKEW	BETA	NumAnalyst	INST
EBXI		**0.81**	**0.38**	0.07	**0.09**	**0.27**	**0.24**	**0.67**	**0.11**	**-0.18**	**-0.16**	**0.18**	**0.17**
CFO	**0.73**		**-0.13**	**-0.11**	-0.02	**-0.09**	**0.28**	**0.67**	0.08	**-0.14**	**-0.12**	**0.28**	**0.23**
TA	**0.28**	**-0.29**		**0.20**	**0.20**	**0.73**	-0.02	**0.14**	0.06	**-0.10**	**-0.11**	**-0.09**	-0.03
CA	**0.17**	**-0.14**	**0.35**		**0.22**	0.04	**-0.22**	-0.01	0.00	0.03	**0.25**	**-0.16**	**-0.20**
NormTA	0.04	**-0.09**	**0.18**	**0.22**		**-0.50**	**-0.08**	0.06	-0.04	-0.02	**0.08**	**-0.12**	**-0.10**
AbnTA	**0.21**	**-0.13**	**0.61**	**0.12**	**-0.56**		0.03	**0.09**	**0.08**	-0.07	**-0.14**	-0.01	0.05
SIZE	**0.12**	**0.24**	-0.03	**-0.15**	**-0.08**	0.02		**0.12**	-0.04	**-0.11**	**-0.21**	**0.68**	**0.29**
FCF	**0.63**	**0.58**	0.06	0.04	0.05	0.05	**0.10**		**0.16**	-0.07	**-0.11**	**0.12**	**0.16**
MTB	**0.29**	**0.20**	0.05	0.05	-0.04	**0.09**	**-0.08**	**0.30**		**0.10**	-0.04	**0.12**	-0.01
SKEW	**-0.12**	**-0.10**	**-0.10**	-0.04	-0.03	-0.06	**-0.15**	-0.07	**0.11**		**0.11**	-0.01	-0.07
BETA	**-0.15**	**-0.16**	**-0.09**	**0.18**	0.06	**-0.09**	**-0.20**	**-0.16**	-0.01	**0.11**		-0.06	**-0.13**
NumAnalyst	**0.18**	**0.30**	**-0.11**	**-0.09**	**-0.16**	0.02	**0.70**	**0.14**	**0.10**	-0.06	-0.07		**0.36**
INST	**0.13**	**0.22**	-0.05	**-0.13**	**-0.12**	0.05	**0.36**	**0.18**	-0.03	**-0.08**	**-0.12**	**0.47**	

This table presents the Pearson correlation and the Spearman correlation of the independent variables of this study. The upper right corner is the Pearson correlation, and the lower left corner provides the Spearman correlation. The correlation is based on the variables of the 545 lawsuit firms at the date when the revelation of the bad news was revealed to the public. The bold values in the table indicate significant correlations at 5% level.

4.3. Results from Multivariate Regression

Table 3: Multivariate Analysis of the Association between Accrual quality and Market Reaction at the Announcement dates (n= 590)

$$CAR = \alpha + \beta_1 * AbnTA + \beta_2 * SIZE + \beta_3 * BETA + \beta_4 * SKEW + \beta_5 * FCF + \beta_6 * MTB + \beta_7 * INST + \beta_8 * PID + \beta_9 * NumAnalyst + \varepsilon$$

	CAR1	*CAR30*	*CAR60*	*CAR90*	*CAR120*	*CAR180*
Intercept	-0.045	-0.2	-0.203	-0.242	-0.321	-0.309
	(0.01)	(<0.01)	(<0.01)	0.00	(<0.01)	(<0.01)
AbnTA	**-0.033***	-0.032	-0.027	-0.032	-0.002	-0.021
	(0.07)	(0.44)	(0.62)	(0.63)	(0.98)	(0.82)
SIZE	0.004	**0.02*****	**0.013****	**0.02*****	**0.021****	**0.021***
	(0.12)	(<0.01)	(0.06)	(0.02)	(0.03)	(0.07)
FCF	-0.027	0.02	0.005	-0.056	-0.068	-0.03
	(0.15)	(0.64)	(0.93)	(0.41)	(0.37)	(0.75)
MTB	0.001	**0.004***	0.002	0.003	0.004	-0.002
	(0.46)	(0.09)	(0.50)	(0.31)	(0.30)	(0.69)
SKEW	**-0.006*****	-0.001	0.001	-0.005	-0.013	-0.008
	(0.01)	(0.83)	(0.87)	(0.57)	(0.16)	(0.47)
BETA	-0.008	0.013	**0.029***	**0.035***	**0.07*****	**0.077*****
	(0.13)	(0.28)	(0.07)	(0.08)	(<0.01)	(<0.01)
NumAnalyst	0.000	-0.002	0.000	-0.001	-0.001	-0.001
	(0.55)	(0.11)	(0.89)	(0.60)	(0.69)	(0.72)
INST	**0.022***	**0.046***	**0.097*****	**0.093****	**0.123****	**0.162*****
	(0.07)	(0.10)	(0.01)	(0.04)	(0.02)	(0.01)
Adj. R	0.03	0.03	0.02	0.02	0.03	0.02

This table provides the regression results for H1~H2 using abnormal total accruals as proxy for accrual quality.Test results for H1 (whether firms with lower accrual quality experience a more negative price reaction around the announcement date). Results for H2 (lower accrual quality firms are associated with more downward drift following the announcement of the litigation) are laid under CAR30 to CAR180. All the variables are described in the appendix B. *P-values* are in parenthesis. ***, **, and * indicates significance at 1%, 5%, and 10% level respectively.

Table 3 presents multivariate regression results for H1 and H2. At the announcement date, the coefficient for *AbnTA* (-0.033) is significantly negative, supporting H1 (first column) that poorer accrual quality firms are associated with lower market returns. Moreover, firms with higher institutional equity holdings are associated with more positive market reaction at CAR1 and the

following five periods, consistent with the argument that sophisticated investors are able to process the information regarding the implication of the litigation more quickly than individual investors. No evidence suggests that *AbnTA* is associated with post-announcement drift (remaining columns) in a multivariate context, thus H2 is not supported. Firm size and beta are significantly positive beginning with CAR30 (for firm size) and CAR60 (for beta) and extending to CAR180. Skewness is negatively related to cumulative abnormal returns at the announcement date, consistent with the expectation that higher risk firms are associated with more negative market reaction.

Table 4: Multivariate analysis of the association between accrual quality and market reaction at the revelation date (n= 545)

$$CAR = \alpha + \beta_1 * AbnTA + \beta_2 * SIZE + \beta_3 * BETA + \beta_4 * SKEW + \beta_5 * FCF + \beta_6 * MTB + \beta_7 * INST + \beta_8 * PID + \beta_9 * NumAnalyst + \varepsilon$$

	CAR1	*CAR30*	*CAR60*	*CAR90*	*CAR120*	*CAR180*
Intercept	-0.329	-0.403	-0.415	-0.38	-0.417	-0.446
	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)	(<0.01)
AbnTA	**0.075****	**0.072***	0.035	0.006	0.001	-0.028
	(0.02)	(0.07)	(0.43)	(0.90)	(0.99)	(0.58)
SIZE	**0.023*****	**0.025*****	**0.022*****	**0.017****	**0.021*****	**0.029*****
	(<0.01)	(<0.01)	(<0.01)	(0.02)	(0.01)	(<0.01)
FCF	0.022	**0.081***	**0.117****	**0.104***	**0.154*****	**0.140****
	(0.58)	(0.08)	(0.02)	(0.06)	(0.01)	(0.02)
MTB	-0.001	0.002	0.001	0.001	0.001	0.001
	(0.70)	(0.40)	(0.68)	(0.84)	(0.85)	(0.69)
SKEW	0.004	-0.008	-0.01	**-0.018****	**-0.018****	**-0.014***
	(0.48)	(0.23)	(0.17)	(0.02)	(0.03)	(0.10)
BETA	-0.018	-0.005	-0.003	-0.02	-0.013	0.005
	(0.11)	(0.71)	(0.83)	(0.20)	(0.44)	(0.79)
NumAnalyst	**0.002***	0.002	**0.004****	**0.004****	**0.004****	0.003
	(0.09)	(0.21)	(0.05)	(0.04)	(0.05)	(0.20)
INST	**-0.061****	**-0.051***	-0.03	-0.007	-0.002	-0.045
	(0.02)	(0.10)	(0.38)	(0.84)	(0.96)	(0.26)
Adj. R	0.11	0.10	0.09	0.08	0.10	0.08

This table provides the regression results for H3~H4 using abnormal total accruals for accrual quality. Test results for H3 (whether firms with lower accrual quality experience a more negative price reaction around the revelation date). Results for H4 (lower accrual quality firms are associated with more downward drift following the revelation of the bad news about the company's true financial condition) are under *CAR30* to *CAR180*.

Table 4 provides multivariate regression results for H3 (whether firms with lower accrual quality experience a more negative price reaction around the revelation date) and H4 (whether lower accrual quality firms experience more downward drift following the revelation of the bad news. Results in table 4 show that coefficients for abnormal total accruals (*AbnTA*) are significantly positive around the revelation date and the following one month (CAR30), then become insignificant for a longer drift window. The results are against H3 and do not support H4. These results, on the other hand, may also suggest that investors may not be able to incorporate the prior year accrual quality (in the form of abnormal total accruals) correctly in the stock prices at the revelation date and the following one month period and were still viewing higher abnormal total accruals in a positive light around the time of revelation of bad news and only when the firms were sued later did the investors begin to better understand the implication of abnormal accruals.

Results in Table 4 can be explained by contemporary behavior finance theories. Modern behavioral finance theory suggests that investors, instead of making perfectly rational investment decisions, are humans and are prone to make mistakes as a result of limited cognitive abilities (bias). One of the biases is the conservatism bias identified by Edward (1968), which suggests that investors are slow to update their priors and tend to underweight new information, which contributes to investors' underreaction to news. Research also suggests that "noise" –distorted mixing information flows or confusion –contributes to human biases. Erev, Wallsten, and Budescu (1994) showed that some specific "noise" (distortions) can cause two seemingly unrelated biases in human judgment: conservatism and overconfidence. From what was discussed earlier in descriptive statistics in this paper, the sample firms are likely to be growth firms. In the investment community, many growth companies are known to have high accruals. If normal accruals are assumed to be fixed, then the high-accrual growth firms are also expected to be associated with high abnormal total accruals (a factor for "confusion"). If investors are only imperfect information processors and only seek a certain degree of "fitness" in the environment (Hilbert 2012), then they may simply view the high growth firms more positively than the low growth firms without further consideration of the properties of abnormal accruals, as a result, it is possible that at the revelation date, investors might consider the potential higher growth firms with higher abnormal accruals more likely to survive the bad situation and hence still view these firms in a more positive light rather than quickly incorporate the implication of the abnormal total accruals into the price of these stocks.

Another interesting result is that the coefficient for institutional holdings is significantly negative (-0.054) at the revelation date. Thus, firms with more sophisticated investors experience greater negative returns at the revelation date, perhaps due to these investors better processing the implications of the litigation announcement for firm value at the time of the announcement. Still another, coefficients for the number of analysts following are significantly positive around the revelation of bad news and also for period CAR(0,60) further to CAR (0,180), suggesting that around the revelation of bad news, investors relied on analysts for direction and guidance, an interesting comparison of indifference from investors towards analysts following at around the litigation announcement date and the following periods.

Results for other independent variables in Table 4 suggest that firm size is positively related to cumulative abnormal returns over the days [0, 1] and the following drift period , implying that smaller firms experience a more negative reaction from investors at the revelation of the bad news. This is consistent with prior studies suggesting greater information asymmetry and a generally stronger market reaction to news associated with small firms. Coefficients for free cash flow are significantly positive for the five periods following revelation, suggesting that firms with more free cash flows are perceived more positively by the investors during this period of time.

5. ADDITIONAL ANALYSIS AND DISCUSSION

I conducted some additional tests by including the percent of independent directors (*PID*) as a control variable in the regressions. When this variable is included in the regressions, the sample sizes are reduced drastically to only 163 lawsuit firms that satisfy the data requirement for the announcement and revelation dates.

Results from the additional tests support H1, that is, firms with poorer accrual quality (in the form of *AbnTA*) are associated with more negative market reaction at the litigation announcement date. *AbnCA*, the other accrual quality proxy using the model first developed by DD (2002) and later augmented by Francis et al (2005), is used in both the test including the *PID* and the test excluding PID and results do not support H1. Neither of the two accruals measures supports H2, H3 or H4.

I also tried to use different windows to measure the cumulative abnormal returns. Results using these different windows do not change significantly. Other sensitivity analyses included using quarterly data and the unsigned accruals measure to test the hypotheses. Results are also similar to what is reported here.

6. SUMMARY AND CONCLUSIONS

The main contribution of the paper is to test whether accrual quality is priced by the market at the revelation date (the time when the bad news about the firms' financial performance was first released to the public), at the announcement date (the time when these firms were finally sued) and the respective subsequent five different periods for firms sued under rule 10b-5 of the Securities and Exchange Act of 1034. These two different dates provide a unique angle to study investors' perception and market reaction of accrual quality.

Empirical results in this study show that in general the revelation dates and the announcement dates are two related but distinct events for the firms and are characterized by different features. Regressions using abnormal total accruals as proxy for accrual quality support the hypotheses that investors price accrual quality at the announcement date and that they react more negatively to firms with lower accrual quality. The negative relation between accrual quality and the market reaction does not continue in the period following the litigation. Results at the revelation date suggest that the market took a more positive view towards firms with higher abnormal accruals, probably implying that market was not fully aware of the implications of the accrual quality for these lawsuit firms or that investors are slow to change their opinions regarding the growth firms with higher abnormal accruals.

Different from Ferris and Pritchard (2001)'s findings that institutional equity holding is positively related to market reaction at both the revelation of bad news and announcement of litigation, I find that institutional equity holdings are positively related to cumulative abnormal returns at the announcement date and the following period, but are negatively related to the abnormal returns at the revelation date and the following one month, suggesting that institutional investors may be able to better process the implications of the litigation for firm value at the litigation announcement time, but they may be no better than average investors at an earlier time (at the time when bad news was first revealed). However, the negative relation between the institutional holdings and the market return at the revelation date and the later positive relation around the litigation announcement date may also suggest institutional investors react faster than the average investors to this corporate event. Future research may examine the effect of institutional holdings on the relation between market reaction and abnormal accruals.

APPENDIX A
TABLES AND FIGURES

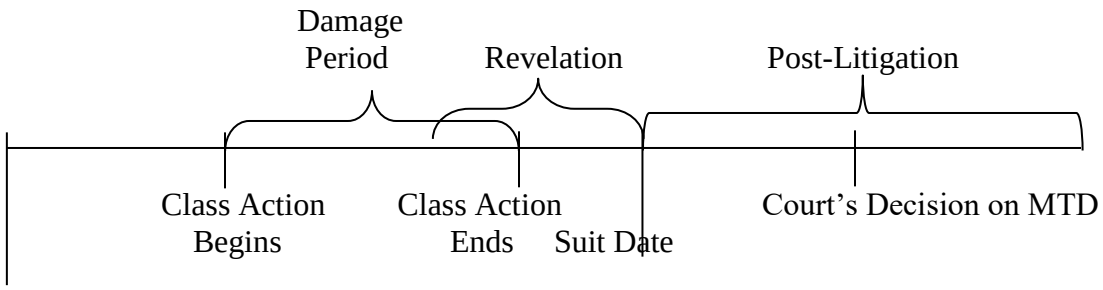

Figure 1: Litigation Related Dates and Periods

Fig.1 Litigation timeline. In this study, the three litigation dates separate the litigation event into several litigation-related periods. The three dates identify when the class action begins and ends and the lawsuit announcement date. The litigation-related periods defined by these dates are the damage period (the period covered by the class action), the post-litigation period (the period following the lawsuit announcement and the court's decision on motion to dismiss (MTD) will be made during this period), and the revelation period (the period between the damage and post-litigation period). The revelation date is defined as the end of the class action period (last day of the class action period) as in prior studies. For example: If a firm's class action begins on April 10, 2004 and ends on March 20, 2005, then this period represents the damage period, and March 20, 2005 will be the revelation date when the bad news about the firm's true financial information is revealed to the public.

Note: Average Days between different dates

	Mean	Median	Lower Quartile	Upper Quartile
Days of the Class Action Period	440	258	139	495
Days between the Revelation dates and the announcement dates	110	28	6	136

Days of the class action period: the number of days between the class action period beginning dates and the class action period ending dates; Days between the revelation dates and the announcement dates: the number of days between the date the revelation of the bad news was revealed to the public and the date the filing of the lawsuit was announced.

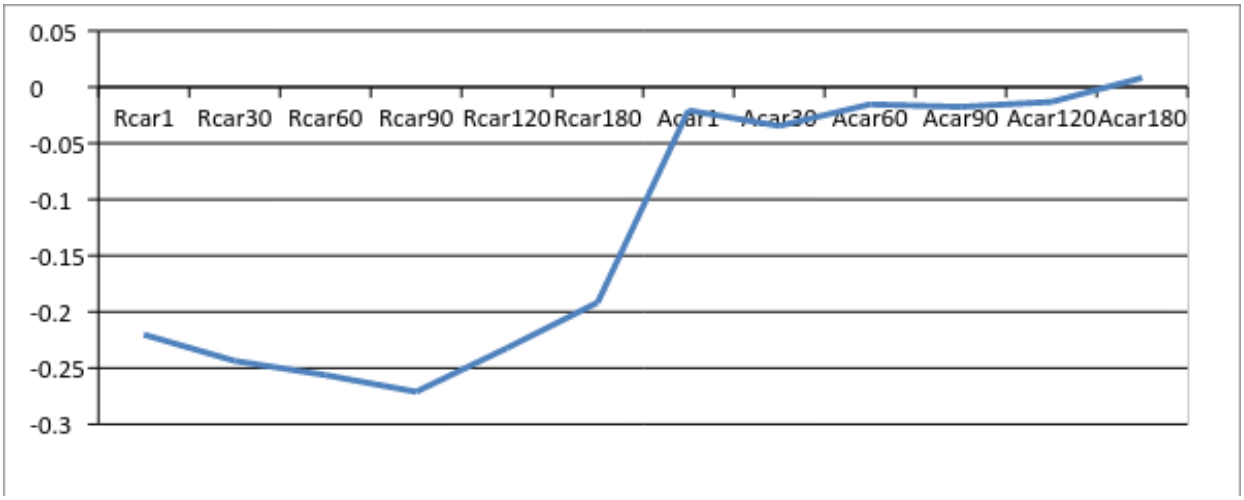

Figure 2: Cumulative Abnormal Return, Post-Revelation, and Post-Announcement Drift

Fig.2 depicts the cumulative abnormal return (CAR) around the two event dates—the date of the revelation of the bad news (Rev. Date or RCAR1) and the date of the litigation announcement (Ann. Date or ACAR1) and Cumulative Abnormal Return over the five time periods—CAR30, CAR60, CAR90, CAR120 and CAR180, with RCAR referring to the periods following the Revelation date and ACAR the Announcement date respectively. Specifically, CAR1 is the cumulative return over the days (0, 1) relative to the revelation date and the announcement date. CAR30~CAR180 refer to the cumulative return following the revelation date and the announcement date over the five time periods, days [2, 30], [2, 60], [2, 90], [2, 120] and [2, 180]. Abnormal returns are measured as the firm's return less the value-weighted market index return.

APPENDIX B

VARIABLE DEFINITION

Variable	Description	Definition
		Accrual quality measures
AbnTA	Abnormal total accruals	The difference between the lawsuit firm's total accruals and their normal accruals. (See also Total accruals and normal accruals in "Other variables" under definition).
AbnCA	Abnormal total current accruals	The difference between total current accruals and the lawsuit firms' normal current accruals. (See also Total current accruals and normal total accruals in "Other variables" under definition).
TA	Total accruals	The difference between EBXI (earnings before extraordinary items) and CFO (cash flow from operations)
TCA	Total current accruals	Total current accruals of the lawsuit firms calculated as ΔCA - ΔCL - $\Delta CASH$ + $\Delta STDEBT$; Also see other variables under definition for more details.
NormTA	Normal total accruals	The normal or expected total accruals of the lawsuit firms, and is the typical total accruals level of the industry. It is calculated as the industry-specific parameters estimated cross-sectionally one year prior to the year of the litigation using the Modified Jones Model times the lawsuit firms variables of the same time period. For more details, see section 3.3.1.
NormCA	Normal total current accruals	The normal or expected total current accruals of the lawsuit firms and is calculated similarly as the normal total accruals, but using the augmented DD (2002) model. For more details, see section 3.3.1.
		Control variables
SIZE	Size of the lawsuit firms	Size is measured as the log of total assets at the end of the year preceding the year of the lawsuit filing.
BETA	Beta of the lawsuit firms	Beta is measured as the slope coefficient from the market model using the value-weighted CRSP market return estimated over days (-250,-10) relative to the filing date of filing.
SKEW	Return skewness of the lawsuit firms	Skewness describes asymmetry from the normal distribution of the stock returns. It is calculated as the sum of the deviations from the mean return raised to the third power, divided by the sample size minus 1, times the standard deviation raised to the third power. Estimated over the same period as beta.
FCF	Free cash flow	Free cash flow (FCF) is estimated as in Lehn and Poulsen (1989), which is operating income before depreciation minus

		taxes, interest expenses, preferred dividends and ordinary dividends and then normalized by prior year total assets.
MTB	Market-to-book ratio	This ratio is calculated as the market value of equity divided by the book value of equity.
INST	% of institutional equity holdings	This variable is calculated as the percent of shares outstanding held by institutional investors.
PID	% of independent directors	The variable is calculated as the percent of the independent board of directors.
NumAnalyst	Number of Analyst following	This variable is measured as the natural log of the number of analyst following.
		Other Variables
ΔREV		Revenues in year t less revenues in year t-1.
ΔREC		Receivables in year t less receivables in year t-1.
PPE		Gross property, plant, and equipment in year t.
EXBI		Earnings before extraordinary items.
CFO		Cash flow from operations.
ΔCA		Change in current assets from year t-1 to year t.
ΔCL		Change in current liability from year t-1 to year t.
$\Delta CASH$		$\Delta CASH$ is change in cash from year t-1 to year t. As in the first approach, year *t* refers to the year prior to the litigation year (e.g. if litigation year is 1996, then t = 1995). $\Delta STDEBT$ is change in short-term debt from year t-1 to year t.
$\Delta STDEBT$		Change in short-term debt from year t-1 to year t.
CAR		Cumulative Abnormal returns.
LAQ		Accrual quality represented by *AbnAcc* in the modified Jones model or *AbnCA* in Dechow and Dichev's model.

Note: Abnormal total accruals and abnormal total current accruals are estimated one year prior to the bad news revelation year or one year prior to the litigation announcement year. All the other variables are measured in the year of revelation or the year of litigation announcement unless otherwise noted. Year *t* in the above definitions refers to the year prior to the revelation/litigation year.

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