

Ibrahim, Salma; Xu, Li; Kalchev, Georgi; Deal, Candice Linette

**Article — Manuscript Version (Preprint)**

## Legal Consequences of Earnings Components Management

Advances in Quantitative Analysis of Finance and Accounting

*Suggested Citation:* Ibrahim, Salma; Xu, Li; Kalchev, Georgi; Deal, Candice Linette (2013) : Legal Consequences of Earnings Components Management, Advances in Quantitative Analysis of Finance and Accounting, ISSN 1046-5847, World Scientific, Singapore, Vol. 11, pp. 229-259

This Version is available at:

<https://hdl.handle.net/10419/146786>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

## **Legal Consequences of Earnings Components Management**

### **Abstract**

This paper investigates how manipulating different earnings components will affect the likelihood of accounting-related shareholder litigation. Firms can manipulate earnings upward by accelerating revenue recognition, understating expenses, and overstating gains associated with special items. Firms can manipulate earnings downward by delaying revenue recognition, overstating expenses, and overstating losses associated with special items. This paper finds that firms accelerating revenue recognition or taking abnormal large losses through special items are more likely to be associated with accounting-related shareholder litigation. Such association only exists in the post-PSLRA period.

**Keywords: Earnings management, Shareholder litigation, Specific Accruals**

## **Legal Consequences of Earnings Components Management**

### *1. Introduction*

Litigation risk is an important factor associated with firms' discretionary accounting practices. A significant number of prior studies show that firms misleading investors by managing earnings are liable to be sued (e.g., DuCharme et al, 2004). Since extant literature has demonstrated that firms choose specific accruals to manage earnings to achieve certain reporting objectives (e.g., Marquardt and Wiedman, 2004), it is interesting to know whether the likelihood of being sued is different when different components of earnings (through specific accruals) are manipulated. The answer to this research question is important to accounting researchers, policymakers and securities regulators who are trying to understand the relationship between firms' discretionary accruals management and the potential litigation risks.

This paper examines this research question by investigating whether the likelihood of accounting-related Shareholder Class Action Litigation (SCAL hereafter) varies with the earnings components used to reach earnings goals. By accounting-related litigation, we mean SCALs associated with GAAP violation. Typically, SCALs are initiated by plaintiffs' lawyers on behalf of investors after sudden, large stock price drops. Because the plaintiffs' attorneys receive a substantial share of any settlement through contingent legal fees, it is expected that law firms have strong incentive to file an SCAL if the expected settlement amount exceeds the plaintiffs' litigation costs. In order to be able to receive the settlement, it is essential for the plaintiffs' attorneys to establish managers' intentions to commit fraud. In this paper, we argue that managers can

manipulate earnings upward or downward using different earnings components. Manipulating different components may appear to provide different financial incentives for fraud, which in turn will have different effects on the probability of accounting-related lawsuits.

Our empirical analyses are based on a comprehensive litigation sample from January, 1994 to December, 2003. We identify 524 firm-year observations with litigation for accounting irregularities. We predict and find that the likelihood of accounting-related litigation is high when managers manipulate earnings upward by accelerating revenues or manipulate earnings downward by recognizing losses through special items.

This paper contributes to the accounting and finance literature in several ways: First, to the best of our knowledge, this paper is the first attempt to address the association between earnings component management (through specific accruals) and the likelihood of litigation. The limited studies (e.g., DuCharme et al, 2004) on the association between earnings management and litigation have focused mainly on the aggregated accruals. As recognized in Beneish (2001, pg. 11), “The difficulties faced by aggregate accrual models suggest that studies of specific accruals, perhaps even case studies, are needed.” Our results provide direct evidence of the legal consequences of manipulating specific accruals.

Second, this study is important in light of the recent trend of the literature debating the merit of SCALs. Alexander (1991) concludes that large losses do not necessarily lead to lawsuits, and that neither SCAL filings nor settlements are based on merit. Similarly, Niehaus and Roth (1999) find that evidence from insider selling and

seasoned equity offers does not suggest that the vast majority of SCALs either have or lack merit. In contrast, DuCharme et al. (2004) investigate the incidence of lawsuits involving stock offers, and report that earnings management measured by abnormal accruals is positively related to the incidence of lawsuits. Their findings provide indirect evidence that lawsuits and settlement are related to merit. Consistently with DuCharme et al. (2004), we find plaintiff lawyers carefully choose the lawsuit that can be associated with abnormal earning manipulation, and particularly, specific accruals management linked with high managerial fraud incentives.

Unlike prior studies, our paper is the first one that applies the reverse regression methodology to the SCALs. The reverse regression methodology recognizes the fact that plaintiff lawyers first identify a pool of lawsuit candidate firms that experience substantial changes in stock prices, and then find the target firms by isolating those who appear to have larger incentives to commit fraud.<sup>1</sup> Our studies also adopt a seemingly unrelated regression (SUR) model to mitigate the concerns that the errors from different accruals equations may be correlated across the equations.

The remainder of the paper is organized as follows. Section 2 develops the hypothesis and places our paper in the context of related research, and Section 3 documents the sample selection procedures. Section 4 reports the results of main empirical tests, and Section 5 reports results of additional analyses. Section 6 summarizes and concludes.

---

<sup>1</sup> Leamer (1978) shows formally that in an errors-in-variables context, direct and reverse regression estimates bound the true parameter value and that in a proxy-variables case, direct regression produces an upwardly biased estimate whereas the reverse regression estimate is unbiased.

## *2. Prior Research and Hypothesis Development*

Firms may manage earnings upward or downward. Upward earnings may lead to SCAL.<sup>2</sup> For example, in 2002, Accelerated Networks, Inc. was sued for an earnings inflation scheme. In 2001, the management materially overstated the earnings both prior to and following the Initial Public Offering (“IPO”) of its stock. Downward earnings management may also be associated with shareholders’ litigation. In 2003, Envoy, Inc was sued for manipulating earnings downward in 1998. Envoy wrote off \$35 million in connection with its purchase of HDIC —more than 68% of the purchase price. By taking improperly large one-time write-offs, Envoy was able to understate the reported net losses for the fourth quarter of 1996 and the first, second, and fourth quarters of 1997 by a total of more than \$4 million, and to overstate Envoy's reported net income for the first three quarters of 1998 by more than \$6.5 million.

Most of the existing empirical studies examining the association between earnings management and litigation focus on the total discretionary accrual and the likelihood of subsequent class action securities litigation. So far, the evidence is inconclusive. On the one hand, some studies show that there is a positive association between the likelihood of class action litigation and abnormal total accruals. For example, Lu (2004) uses a system of simultaneous equations to examine the relation between earnings management (proxied by abnormal or discretionary accruals) and securities class action litigation. In a sample of 781 firms sued in class action securities litigation from 1988 to 2000, Lu finds

---

<sup>2</sup> The period of alleged information manipulation is known as the class period, which forms the basis in defining a class of shareholders who purchased stock at the inflated price and are thus eligible for compensation.

that accruals and the changes in revenue are abnormally high during alleged periods of manipulation, and tend to reverse subsequently.

On the other hand, by studying the determinants of securities litigation risk using a sample of 69 firms sued during 1989-1992, C. Jones (1998) finds a negative but insignificant association between litigation risk and discretionary current accruals estimated from a term-adjusted version of Jones (1991) model.

In addition, some studies provide evidence showing that the positive association between abnormal total accruals and the likelihood of litigation only exists for a subsample of firms or for a certain time period. For example, DuCharme et al. (2004) compare a litigation sample (consisting of 150 IPOs and 72 SEOs from 1988 to 1997) and a control sample (consisting of all IPOs and SEOs that are not subject to litigation during the same periods), and find a significant and positive association between abnormal current accruals and the incidence of lawsuit filings for the SEO firms, but not for the IPO firms. Johnson et al (2007) find a significant positive association between abnormal accruals<sup>3</sup> and likelihood of lawsuit for suits settled for less than or equal to \$2 million since the enactment of the Private Securities Litigation Reform Act enacted in December 1995 (PSLRA). However, the association does not exist in the pre-PSLRA era or for law suits settled for more than \$2 million.

Overall, prior research focusing on total abnormal accruals and shareholder litigation does not provide strong evidence that earnings management (measured by total abnormal discretionary accruals) either increases or decreases the likelihood of subsequent class action lawsuits. One possible explanation for the mixed results is that

---

<sup>3</sup> The abnormal accruals are calculated based on Jones (1991) model.

the likelihood of getting sued is different depending on how firms choose to manage their specific accruals.

In this study, we examine whether the likelihood of being sued is different depending on how firms choose to manage different components of earnings through specific accruals. Our basic argument is that the plaintiffs' attorneys will only file an SCAL when the likelihood of obtaining a favorable verdict is high and the expected settlement exceeds the legal costs (Palmrose, 1991). The rationale of this argument is as follows: Extant studies show that lawsuits occur over equity offerings on cases with positive expected values for plaintiffs or plaintiff attorneys (Alexander 1991; Priest and Klein, 1984). To obtain a favorable verdict, the plaintiffs' attorneys first need to establish management's intent to commit financial fraud. Managing different components of earnings through special accruals may appear to provide stronger financial incentive for fraud, which in turn will have a different impact on the probability of accounting-related lawsuits.

Managers manipulate earnings to meet certain benchmarks. Mohanram (2003) states that "this benchmark could be the previous period's performance (the desire to show an improving trend), analysts expectations (the desire to meet or beat expectations), "zero" (the desire to remain profitable), or whatever benchmark is specified in a manager's compensation contract (the desire to meet a bonus threshold)". It is extremely costly to miss these benchmarks because the relationship between stock price (or compensation) and earnings is very non-linear around the benchmarks. Hence, when



firms are extremely close to a target, the firms will try and use some form of upwards earnings management to “bump up” earnings over the target.

The most common way to manipulate upward is to accelerate revenue recognition through receivables accounts, to delay expenses through cost of goods sold (via inventory), operating expenses (via payables), and depreciation expense accounts, or to use special items accounts. We argue that if the plaintiffs’ attorneys want to establish management’s intent to inflate the price, the plaintiffs’ attorneys are more likely to focus on firms accelerating revenue recognition. The rationale for this argument is as follows: First, anecdotal evidence shows that revenue recognition-related accounting violations are more likely to be detected because regulators place great emphasis on catching revenue recognition related offenses. For example, the Securities and Exchange Commission (SEC) has notified internal auditors that revenue recognition is a high-risk area (Stallworth and Digregorio, 2004).<sup>4</sup> Thus, among all types of earnings components management, accelerating revenue recognition should be, *ceteris paribus*, more likely to be detected. Second, a number of empirical studies show that investors rely more on revenues to evaluate the stock than on other accounts in financial statements. Hence, the consequences of revenue manipulation are more severe to investors than the other account manipulation of the same magnitude. For example, Anthony and Ramesh (1992) show that investors put more weight on changes in revenue than changes in expenses when valuing firms, suggesting that earnings management through revenue recognition is more likely to have a profound impact on investors’ valuation of the equity offerings than

---

<sup>4</sup> Among the Securities and Exchange Commission (SEC) enforcement actions, violations of Generally Accepted Accounting Principles (GAAP) for revenue recognition constitute the most common offense.

earnings management through other accounts. Consistent with this interpretation, Ertimur, Livnat, and Martikainen (2003) find that investors value a dollar of revenue surprise more highly than an equal amount of expense reduction. In addition, Porter (1980) points out that, the benefits from increasing revenues are especially pronounced for firms in their early life cycle stages (as for most of the equity offering firms). In sum, if investors rely on the deceitful information to evaluate the stock, they are more likely to significantly overprice the stocks based on the managed earnings through revenue recognition than based on the managed earnings through other accounts.<sup>5, 6</sup> In other words, the consequence of revenue manipulation is more severe to investors than with other accounts manipulation of the same magnitude. Taken together, compared to upward earnings management through expenses or special items, revenue upward manipulation is more likely to be detected and the consequences of using information related to revenue manipulation are more severe for investors. Thus, the plaintiffs' arguments that defendants ought to be held accountable are more convincing, and essentially, plaintiffs anticipate that the judicial process will perceive these cases as more meritorious. Therefore, we expect that firms engaging in accelerating revenue recognition are likely to be sued for accounting-related fraud.

---

<sup>5</sup> Section 10b-5 of the Securities and Exchange Act of 1934 generally prohibits firms from disseminating false or misleading information, or failing to disclose materially relevant information to investors. Section 11 of the Securities Act of 1933 governs information disclosure in public stock issues specifically. Investors who are harmed by relying on defective information supplied by a firm may sue to recover damages.

<sup>6</sup> To recover damages under 10b-5 of the 1934 Act, an investor must prove that the information was defective, that the investor relied on it, and that this reliance led to his or her loss. In lawsuits brought under Section 11 of the 1933 Act, however, investors do not have to prove that they relied on false or misleading information or omissions in the offering registration statement. Instead, the burden of proof falls on the defendant firm. Thus, the incidence of Section 11 lawsuits is relatively high.

Managers may also intentionally manipulate earnings downward. This is especially likely when firms are either far above or far below their targets. For example, managers can practice “big-bath” and “cookie-jar” accounting to manipulate earnings downward. In both cases, given the self-adjusting nature of accounting, the manipulated downward earnings will lead to boosts in future income, which makes it easier for managers to meet the benchmark in the future. The most common way to manipulate downward is to delay revenue recognition through receivables account, to accelerate expenses through cost of goods sold (via inventory) and operating expenses (via payables) and depreciation expense accounts, or to use the special items account (e.g., goodwill amortization and restructuring charges). Bartov (1993) shows that special items manipulation is a relatively low-cost method of managing earnings. As special items tend to be excluded from both pro forma and analyst earnings definitions, managers can manipulate earnings downward while avoiding negative stock market response (Cain et al., 2009). In other words, recognizing losses through special items is more deceitful for investors. If managers intend to hide losses from investors, special items should be the first choice. Thus, the plaintiffs’ arguments that defendants intentionally commit financial fraud and ought to be held accountable are more convincing. Therefore, the plaintiffs’ attorneys are more likely to focus on firms manipulating special items downward.

The above discussions lead to the following hypotheses (in alternative forms):

*H1: Defendant firms that are accused of accounting allegations, engage in a higher magnitude of earnings overstatement through revenue recognition acceleration than do non-defendant firms.*

*H2: Defendant firms that are accused of accounting allegations, engage in a higher magnitude of earnings understatement through special items than do non-defendant firms.*

### *3. Sample Selection and Measures of Discretionary Accruals*

#### *3.1 Sample Selection and Descriptive Statistics*

The sample of litigation firms was drawn from the Institutional Shareholder Services (ISS) Database. The database reports the lawsuits filing period, the nature of the allegations made therein, and beginning and ending of the class period, which refers to the period of alleged information manipulation. This database contains 3,130 firms that faced SCALs in the United States with the class action period ranging from 1959 to 2003. We exclude all firms with the beginning of a class period prior to 1989; our discretionary accruals calculations need to use cash flow statements which are not available prior to 1989. We also eliminate all class action suits that do not have financial information on Compustat for the given class action periods. Further, we remove the top and bottom 1% of the following variables: total assets, accrual components, and income before extraordinary items.<sup>7</sup> The final sample consists of 954 firm-year observations for firms that faced class action litigation. Among the 954 observations, 524 firm/year observations are classified as litigation for accounting irregularities. Examples of the irregularities include improper recognition of revenue, failing to report write-offs for assets, underreporting reserves, and underreporting expenses. The remaining 430 firm-year

---

<sup>7</sup> As a sensitivity test, we include all variables in our tests and the non-tabulated results are similar to what are reported in this paper.

observations are classified as litigation for non-accounting irregularities such as registration omissions for initial public offering firms, failure to act in the best interest of investors, misleading of investors in public statements, and failure to report negative future prospects of the firm. The details of classifications are listed in Appendix A. The financial data are obtained from Compustat for these firms and all other firms with available data in the corresponding periods.

Table 1 reports the distribution of the firms facing class action litigation by class period year and industry. The accounting-related litigation and non-accounting related litigations are reported separately.

(Table 1)

Panel A shows the distribution of the litigation sample by year. The total litigation observations sample includes 524 firms that were sued based on accounting-related allegations and 430 firms that were sued with no accounting allegations. As the table indicates, most of the litigation cases that were filed that concerned some accounting-related allegations occurred in the late 1990s and early 2000s. Specifically, 14.12% and 14.31% of the litigation cases occurred in 2000 and 2001, respectively. After 2001, the amount of litigations with accounting-related allegations seems to reduce significantly with only 9.35% occurring in 2002 and 5.34% in 2003.

Similarly, in our sample of litigation observations without accounting allegations, most of the cases were made in the late 1990s and early 2000s. Specifically there were 63 (14.65%) and 76 (17.67%) litigation cases in 1990 and 2000, respectively. Similar to our sample of observations with accounting allegations, after 2000, the amount of litigations

without accounting-related allegations seem to reduce significantly with 35 (8.14%) in 2001, 27 (6.28%) in 2002, and 16 (3.72%) in 2003.

Table 1, Panel B provides the industry composition of the litigation sample. A wide spectrum of industries is covered in the sample. The machinery and equipment industry is the most litigious industry amongst our sample. Within this industry, 171 firms (32.63%) were sued for accounting irregularities and 151 firms (35.12%) were sued with no accounting allegations. Other major industries are the wholesale and retail industry, with the litigation with accounting-related allegations sample representing 18.13% and the litigation without accounting-related allegations sample representing 13.26%. The business services industry was also heavily represented in the litigation with accounting-related allegations sample, with 57 sued firms (10.88%). In the sample of sued firms without accounting allegations, the chemical and petroleum and business services were heavily represented with 46 (10.70%) and 38 (8.84%), respectively. Based on these results, the industry distribution of litigation with accounting-related allegations does not appear to differ systematically from the distribution of litigation without accounting allegations.

### *3.2 Measurement of Discretionary Total and Specific Accruals*

Consistent with Collins and Hribar (2002), we measure the operating accruals for each firm-year observation directly from the cash flow statement. The operating accruals ( $TAC$ ) is calculated as follows,<sup>8</sup>

$$TAC_{it} = (\Delta AR_{it} + \Delta INV_{it} + \Delta AP_{it} + \Delta OWC_{it} + DEP_{it})/A_{it-1}$$

where  $\Delta AR_{it}$  is the positive change in accounts receivable for firm  $i$  from year  $t-1$  to year  $t$  (negative of Compustat #302),  $\Delta INV_{it}$  is the positive change in inventories for firm  $i$  from year  $t-1$  to year  $t$  (negative of Compustat #303),  $\Delta AP_{it}$  is the negative change in accounts payable for firm  $i$  from year  $t-1$  to year  $t$  (negative of Compustat #304),  $\Delta OWC_{it}$  is the net change in other working capital defined as  $(\Delta TAX_{it} + \Delta OTH_{it})$  where  $\Delta TAX_{it}$  is the negative change in taxes payable for firm  $i$  from year  $t-1$  to year  $t$  (negative of Compustat # 305) and  $\Delta OTH_{it}$  is the net change in other current assets and liabilities for firm  $i$  from year  $t-1$  to year  $t$  (negative of Compustat #307),  $DEP_{it}$  is the negative depreciation expense for firm  $i$  in year  $t$  (negative of Compustat #125), and  $A_{it-1}$  is the lagged total assets for firm  $i$  (Compustat #6).

We measure the discretionary accruals through the modified Jones (Jones, 1991, Dechow et al., 1995) model with the proposed K LW (2005) modifications through the following industry-year regressions:<sup>9</sup>

$$\Delta TAC_t = \alpha_{11} + \beta_{11}(1/A_{t-1}) + \beta_{21}(\Delta REV_t - \Delta AR_t) + \beta_{31} PPE_t + \beta_{41} ROA_t + DAC_t$$

---

<sup>8</sup> Collins and Hribar (2002) show that using the balance sheet approach to calculate accruals results in numbers with measurement error that may be high in some cases, especially in periods of structural changes.

<sup>9</sup> The firm subscript has been dropped from this point forward.

The independent variables in the above regression include change in revenue less change in accounts receivable,  $(\Delta REV_t - \Delta AR_t)$ , to account for the change in performance, the level of gross property, plant, and equipment ( $PPE_t$ ), and return on assets in year t ( $ROA_t$ ) (which is calculated as income before extraordinary items in year t divided by total assets in year t). The residual from the regression is the estimate of unexpected or discretionary accruals,  $DAC_t$ . All variables in the regressions, other than  $ROA_t$ , are divided by lagged total assets to control for heteroscedasticity. The coefficients in the above regression are estimated by running cross-sectional regressions by two-digit SIC codes and by year. This methodology is the same as that used in K LW (2005) for aggregate accruals, which eliminates the constraints of fixing the coefficients in these regressions over time or over all industries.

We hypothesize that earnings management can be achieved through one or more of the following earnings components

- (1) Recurring items through revenues.
- (2) Recurring items through expenses.
- (3) Non-recurring items through special items.

Based on these expectations, we analyze the following components in addition to total discretionary accruals:

- (1) Discretionary accounts receivable (DAR), which proxies for earnings management through recurring revenues. DAR is calculated as the residual from the following industry-year regressions:

$$\Delta AR_t = \alpha_{12} + \beta_{12} (1/A_{t-1}) + \beta_{22} (\Delta REV_t - \Delta AR_t) + \beta_{32} ROA_t + DAR_t$$



(2) Discretionary expenses (*DEXP*), which proxies for earnings management through expenses. *DEXP* is calculated as the sum of discretionary inventory (*DINV*), accounts payable (*DAP*), other working capital (*DOWC*) and depreciation (*DDEP*) from the following industry-year regressions:

$$\Delta INV_t = \alpha_{13} + \beta_{13}(1/A_{t-1}) + \beta_{23}(\Delta REV_t - \Delta AR_t) + \beta_{33} ROA_t + DINV_t$$

$$\Delta AP_t = \alpha_{14} + \beta_{14}(1/A_{t-1}) + \beta_{24}(\Delta REV_t - \Delta AR_t) + \beta_{34} ROA_t + DAP_t$$

$$\Delta OWC_t = \alpha_{15} + \beta_{15}(1/A_{t-1}) + \beta_{25}(\Delta REV_t - \Delta AR_t) + \beta_{35} ROA_t + DOWC_t$$

$$\Delta DEP_t = \alpha_{16} + \beta_{16}(1/A_{t-1}) + \beta_{26}(\Delta REV_t - \Delta AR_t) + \beta_{36} PPE_t + \beta_{46} ROA_t + DDEP_t$$

(3) Discretionary special items (*DSI*), which proxies for earnings management through special items. This is estimated as in Marquardt and Wiedman (2004) as follows:

$$DSI_t = SI_t / A_{t-1}$$

where  $SI_t$  is special items in year  $t$  (Compustat item #17). Appendix B provides the definitions of these discretionary components of accruals as well as other variables used in the empirical tests.

The above methodology for calculating *DAR* and *DEXP* was shown to be more powerful than the commonly used Marquardt and Wiedman's (2004) methodology in detecting earnings management (Ibrahim, 2009).<sup>10</sup>

Table 2 presents descriptive statistics for these firms that faced class action litigation. For the litigation with accounting-related allegations sample, the mean income

---

<sup>10</sup> Marquardt and Wiedman measure the discretionary or unexpected portion of components of accruals as the difference between the actual level of accrual from the balance sheet and an expected level based on the prior year level of accruals. Ibrahim (2009) measures the discretionary as the sum of components of accruals based on a random sample of observations with artificially added accrual manipulation.

before extraordinary items ( $INC_t$ ) is -0.063 million and the change in revenue ( $\Delta REV_t$ ) is 0.225 million. Total accrual ( $TAC_t$ ) was -0.002 million. Total assets ( $A_t$ ) for this sample have a mean of 1,405.16 million.

(Table 2)

For the litigation without accounting-related allegations sample, the mean income before extraordinary items ( $INC_t$ ) is -0.116 million but the change in revenue ( $\Delta REV_t$ ) is 0.269 million. Total accrual ( $TAC_t$ ) was -0.033 million. Total assets ( $A_t$ ) for this sample have a mean of 1,702.06 million, considerably greater than the litigation with accounting-related allegations observations, which indicates that the sample of firms that were sued for non-accounting irregularities consists of firms that are somewhat large in size.

Table 3 provides the correlation coefficients between these discretionary accrual components. Panel A presents the correlation coefficients for the firms facing litigation for accounting irregularities, whereas Panel B presents them for the firms facing litigation for other types of irregularities.

(Table 3)

Panel A presents the correlation coefficients for the firms facing litigation for accounting irregularities. Income before extraordinary items ( $INC_t$ ) is highly correlated with cash flow,  $CFO_t$  (0.874). Discretionary accruals ( $DAC_t$ ) is highly correlated with discretionary accounts receivable ( $DAR_t$ ), and discretionary expenses ( $DEXP_t$ ), with correlation values of 0.620, and 0.710 respectively.

Panel B presents them for the firms facing litigation for other types of irregularities. Income before extraordinary items ( $INC_t$ ) is highly correlated with cash

flow,  $CFO_t$  (0.929) and return on assets ( $ROA_t$ ) 0.504. Discretionary accruals ( $DAC_t$ ) is highly correlated with discretionary accounts receivable ( $DAR_t$ ), and discretionary expenses ( $DEXP_t$ ), with correlation values of 0.585, and 0.684 respectively.

Multicollinearity is a high degree of correlation (linear dependency) among several independent variables. It commonly occurs when some of the independent variables measure the same concepts or phenomena. To avoid the multicollinearity issue, we choose not to include variables with correlation larger than 0.5 in the same regressions model.

#### *4. Tests and Empirical Results*

##### *4.1 Tests of Earnings Management in Full Sample*

We first test what types of specific accrual management are used by managers of our sample firms to engage in earnings management in the class periods. We compare our sample firms to two control samples. The first control sample consists of all the Compustat population firms in the sample period, excluding all firm-year observations in which a firm faced litigation. The second control sample is a performance-matched sample of firm-year observations, similar to what is suggested by K LW (2005).<sup>11</sup> More specifically, each litigation firm is matched by selecting a firm-year observation from

---

<sup>11</sup> Just like empirical proxies for earnings management used in the extant literature, our estimates of the discretionary accruals and components of accruals measure earnings management with error. If such measurement error is correlated with the incidence of lawsuit filings, then our tests of earnings management will be biased. Dechow et al. (1995) find that although the modified Jones model is the best among all the models tested, it still produces earnings management tests that are not well specified for samples of firm-periods experiencing extreme performance, in that firms with extremely low (high) earnings tend to have negative (positive) accrual prediction errors. Furthermore, Kasznik (1999), McNichols (2000), and Kothari et al. (2005) show that discretionary accruals from commonly used accrual expectation models (Jones model and modified Jones model) are correlated with growth. Therefore, it is important to adopt a performance-matched control sample.

firms in the same two-digit SIC code and class period fiscal year with the closest match of return on assets. This procedure is successful in obtaining the closest matches for the majority of the firms, namely 521 matches for firms facing litigation with accounting irregularities and 422 matches for firms facing litigation without accounting irregularities.

Table 4 reports the results of univariate tests for differences between the firms facing litigation with accounting irregularities (N=524) and the control sample of firms with a stock drop of 10% or more.

(Table 4)

In the sample of firms facing litigation with accounting allegations, the mean discretionary accrual ( $DAC_t$ ) is 0.023. Additionally, the mean discretionary accounts receivable ( $DAR_t$ ), discretionary expenses ( $DEXP_t$ ), and special items ( $DSI_t$ ) were 0.015, 0.010, and -0.048, respectively. For the matched observations observations, the mean discretionary accrual ( $DAC_t$ ) is 0.006. The mean discretionary accounts receivable ( $DAR_t$ ), discretionary expenses ( $DEXP_t$ ), and special items ( $DSI_t$ ) were 0.003, 0.004, and -0.024, respectively. There are significant differences in the mean discretionary accruals, discretionary accounts receivable, and discretionary special items (mean differences are 0.016, 0.009, and -0.002 for  $DAC_t$ ,  $DAR_t$ , and  $DSI_t$ , respectively, all significant at the 1% level). However, there is no significant difference in discretionary expenses ( $DEXP_t$ ) =0.008 between the litigation sample and the matched observations. The median differences follow a similar pattern.

Overall the results indicate that firms that face litigation for accounting irregularities have higher levels of discretionary accruals, discretionary accounts receivable, and lower discretionary special items.

We further test in a multivariate setting whether there are any significant differences in the discretionary components of accruals for litigation and non-litigation observations. We choose to use reverse regressions methodology. Specifically, we put the abnormal accruals on the left side of the regression equation as dependent variables and the likelihood of the litigation on the right side of the regression equation as independent variables. The rationale for using the reverse regression is as follows: Lawyers review a group of targeted firms (possibly identified by the changes in stock price) for SCALs and select the firms that appear to have the greatest incentive to commit fraud. In this case, the likelihood of litigation is fixed, while the earnings management activities vary across the targeted firms. We argue that the reverse regression technique is most applicable to analyze this SCALs target selection process.

The following reverse regression models are adopted to examine the association between earnings components management and the likelihood of litigation:

$$DAC = a + b_1 LIT + b_2 SIZE + b_3 LEV + b_4 CFO + b_5 ROA + b_6 MTB + b_7 LOSS + b_8 LIT\_RISK + \varepsilon \quad (1)$$

$$DAR = a + b_1 LIT + b_2 SIZE + b_3 LEV + b_4 CFO + b_5 ROA + b_6 MTB + b_7 LOSS + b_8 LIT\_RISK + \varepsilon \quad (2)$$

$$DEXP = a + b_1 LIT + b_2 SIZE + b_3 LEV + b_4 CFO + b_5 ROA + b_6 MTB + b_7 LOSS + b_8 LIT\_RISK + \varepsilon \quad (3)$$

$$DSI = a + b_1 LIT + b_2 SIZE + b_3 LEV + b_4 CFO + b_5 ROA + b_6 MTB + b_7 LOSS + b_8 LIT\_RISK + \varepsilon \quad (4)$$

Where  $LIT_t$  is a dummy variable that equals 1 if the observation is a class period of one of the sued firms, and 0 otherwise.

The control variables used in the above regression are:

*SIZE* = Log (Total assets at beginning of year),

*LEV* = leverage = total of short-term debt and long-term debt divided by total assets

*CFO* = cash from operations from the cash flow statement,

*ROA* = return on assets measured as net income divided by total assets,

*MTB* = market to book value measured as market value of assets divided by book value of assets at year end,

*LOSS* = indicator variable equaling 1 when the firm has a net loss, and 0 otherwise,

*LIT\_RISK* = indicator variable equaling 1 if the firm operates in a high-risk environment, as defined in Francis et al. (1994), and 0 otherwise.<sup>12</sup>

We control for several factors that are associated with incentives to manage earnings as well as the discretionary accruals measure (see Frankel et al., 2002). First, we control for the size of the firm since larger firms tend to have larger accruals and larger discretionary accruals. In addition, larger firms tend to have more analysts following them. We control for leverage, since firms with higher leverage have more incentives to manage earnings to avoid covenant violations. We control for performance (*CFO* and *ROA*) since firms with better performance tend to have higher accruals and will be more likely to meet or beat their expectations. We control for *MTB* since firms with growth prospects (with higher market-to-book values) have more incentives to manage earnings.

---

<sup>12</sup> Francis et al. (1994) designate firms in the biotechnology, computers, electronics, and retailing industries as subject to high litigation risk.

We control for loss since loss firms have different incentives to manage earnings. Finally, we control for litigation risk since firms that are more likely to face litigation have more incentives to manage earnings to avoid it.

We are using the same financial data to construct equations (1) to (4). Even though we have different independent variables for each equation, the errors from each equation may be correlated across the equations. To mitigate this concern, we use a seemingly unrelated regression (SUR) model with a separate equation for each specific accrual.<sup>13</sup> The results of the regressions are reported in Table 5.

(Table 5)

Table 5 presents results from the probit regressions. The results show that there is a significant positive relationship between  $DAC_t$  and  $LIT_t$ , indicating that the level of total discretionary accruals are higher in the litigated firms (coefficient=1.469, significant at the 1% level) compared to the matched non-litigation firms. As for the components of accruals,  $DAR_t$  is significantly positively related to  $LIT_t$  (coefficient=1.819, significant at the 1% level).  $DEXP_t$  is not significantly related to  $LIT_t$  but  $DSI_t$  is significantly negatively associated with  $LIT_t$  (coefficient=-1.306, significant at the 10% level). Our interpretation is that firms facing litigation for accounting irregularities engage in income-increasing manipulation through accounts receivable, or engage in income-decreasing manipulation through special items.

---

<sup>13</sup> SUR is an extension of the linear regression model that allows correlated errors between equations (see Greene [1998] for more detailed information).

Taken together, the results suggest that firms facing litigation for accounting irregularities engage in income-increasing manipulation through accounts receivable, or engage in income-decreasing manipulation through special items.

## *5. Further Analyses*

### *5.1 The Impact of the Private Securities and Litigation Act*

The enactment of the Private Securities and Litigation Act in December 1995 (PSLRA) changed the dynamics of the litigation environment. Specifically, the act was designed to deter frivolous class action litigation. Some of the changes made by the act include providing a safe harbor for voluntary disclosure, forward-looking information, and the lead plaintiff provisions. To test whether the litigation results differ due to the enactment of the PSLRA, the litigation tests are re-run over two separate periods: the pre-PSLRA period, which includes the years 1990-1995, and the post-PSLRA period, which includes the years 1996-2003.

(Table 6)

Table 6 presents the above multivariate regression results. The results show that there  $DAC_t$  is significantly negatively related to  $LIT_t$  (coefficient=-0.262, significant at the 10% level),  $DAR_t$  is significantly negatively related to  $LIT_t$  (coefficient=-0.293, significant at the 5% level),  $DEXP_t$  is significantly positively associated with  $LIT_t$  (coefficient=0.366, significant at the 10% level) and  $DSI_t$  is significantly negatively associated with  $LIT_t$  (coefficient=-3.982, significant at the 10% level) in the pre-PSLRA period.



The results show that there  $DAC_t$  is significantly positively related to  $LIT_t$  (coefficient=1.554, significant at the 10% level),  $DAR_t$  is significantly positively related to  $LIT_t$  (coefficient=2.007, significant at the 5% level),  $DEXP_t$  is significantly positively associated with  $LIT_t$  (coefficient=0.716, significant at the 10% level) and  $DSI_t$  is significantly negatively associated with  $LIT_t$  (coefficient=-1.230, significant at the 10% level) in the post-PSLRA period.

Our interpretation is that firms accelerating revenue recognition or taking abnormal large losses through special items are more likely to be associated with accounting-related shareholder litigation. Such association only exists in the post-PSLRA period.

### *5.2 Earnings Management and Seasoned Equity Offerings*

Next we examine the association between the likelihood of litigation and earnings components manipulation around seasoned earnings offerings. Seasoned equity offerings are particularly powerful events for studying earnings upward because the benefits from earnings management in this context are especially high, due to the fact that the proceeds of an equity offering are based on the stock price at one point in time. Thus, managers have great incentive to manage their earnings around equity offerings, as evidenced by empirical findings from a significant amount of accounting and finance research. For example, managers are found to manage earnings upward prior to initial public offerings (IPOs) (Friedlan 1994) and seasoned equity offerings (SEOs) (see Shivakumar 2000; Teoh, Welch, and Wong 1998; Rangan 1998) in order to increase the market price of the stock. In this paper, we choose to only focus on SEOs, since we cannot observe the

accruals information prior to IPO (which are needed for calculating discretionary accruals for our tests). By examining seasoned earnings offerings, we can show the association between the likelihood of litigation and earnings components upward manipulation.

The SEO firms are first identified using the Securities Data Corporation (SDC) Database and then merged with the Institutional Shareholder Services (ISS) Database. Out of the SEO lawsuits, 38 were sued due to underwriter problems of disclosure and were dropped from the tests. This left a sample of 140 accounting-related sued SEOs and 1,237 non-sued SEOs. We repeat our regression tests on these sued SEOs and non-sued SEOs and the results are reported in Table 7.

(Table 7)

We find that the coefficients of DAR are significantly positive (p value=0.059). These results suggest that SEOs firms facing accounting-related litigation manipulate earnings upward through accelerating revenue (via account receivables). These results are also consistent with prior studies that benefits from upward earnings management around SEOs are especially high.

### *5.3 Additional Multivariate Analyses*

Table 8 presents results from the multivariate analyses with the discretionary components as the dependent variable and LIT as the independent test variable. The results show that there is a significant positive relationship between  $DAC_t$  and  $LIT_t$ , indicating that the level of total discretionary accruals are higher in the litigated firms (coefficient=0.017, significant at the 1% level) compared to the matched non-litigation

firms. As for the components of accruals,  $DAR_t$  is significantly positively related to  $LIT_t$  (coefficient=0.012, significant at the 1% level).  $DEXP_t$  is not significantly related to  $LIT_t$ , but  $DSI_t$  is significantly negatively associated with  $LIT_t$  (coefficient=-0.016, significant at the 10% level). Our interpretation is that firms facing litigation for accounting irregularities engage in income-increasing manipulation through accounts receivable, or engage in income-decreasing manipulation through special items.

(Table 8)

## 6. Conclusion

This paper investigates how manipulating earnings components through different accruals may affect the likelihood of accounting-related shareholder litigation. We argue that managing different components of earnings through special accruals may appear to provide stronger financial incentive for fraud, which in turn will have different effects on the probability of accounting-related lawsuits. Specifically, firms can manipulate earnings upward by accelerating revenue recognition, understating expenses, and overstating special items. Firms can manipulate earnings downward by delaying revenue recognition, overstating expenses, and overcharging special items. We argue that upward earnings manipulation by accelerating revenue recognition through account receivables or downward earnings manipulation by overcharging special items are more likely to be associated with accounting-related litigation.

Using 524 firms facing accounting-related allegation from 1994-2003, this paper finds that, compared to the matched non-sued firms, firms accelerating revenue

recognition or taking abnormal large charges through special items are more likely to be associated with accounting-related shareholder litigation. Such association only exists in the post-PSLRA period. Further, the firms conducting seasoned equity offerings are more likely to be sued if these firms accelerate revenue recognition.

## References

- Alexander, Janet C. (1991). "Do the Merits Matter? A Study of Settlements in Securities Class Actions." *Stanford Law Review* 43: 497-598.
- Amemiya, Takeshi (1978). "The Estimation of A Simultaneous Equation Generalized Probit Model." *Econometrica* 46: 1193-1205.
- Anthony, J. and K. Ramesh (1992). "Association between Accounting Performance Measures and Stock Prices: A Test of the Life Cycle Hypothesis." *Journal of Accounting & Economics* 15: 203-227.
- Bartov, E. 1993. The timing of asset sales and earnings manipulations, *The Accounting Review* 68, 840 - 855.
- Bayley, Luke and Stephen Taylor, (2007). "Identifying Earnings Overstatements: A Practical Test." Working paper, University of New South Wales.
- Beneish, Messod D. (2001), "Earnings Management: A Perspective," *Managerial Finance* 27: 3-17.
- Cain, C. A. and Kolev, K. and S. McVay. (2009). "A Comprehensive Analysis of the Use of Special Items to Manage Earnings," Working Paper, University of Utah.
- Carter, R.B. and S. Manaster (1990). "Initial Public Offerings and Underwriter Reputation," *Journal of Finance* 45(4), pp. 1045-1068
- Collins, D. and P. Hribar. (2002). "Errors in estimating accruals: Implications for empirical research." *Journal of Accounting Research* 40 (1): 105-34.
- Dechow, P., Sloan, R. and Sweeney, A., (1995). "Detecting Earnings Management." *The Accounting Review* 70: 193-225.
- DuCharme L. L., P. H. Malatesta and S. E. Sefcik (2004). "Earnings Management, Stock Issues, and Shareholder Lawsuits." *Journal of Financial Economics* 71: 27-49.
- Ertimur, Yonca, Livnat, Joshua, and Minna Martikainen (2003). "Differential market reactions to revenue and expense surprises." *Review of Accounting Studies* 8 (2-3): 185-211.
- Francis, J.D., D. Philbrick, and K. Schipper. 1994. Shareholder Litigation and Corporate Disclosures. *Journal of Accounting Research* 32: 137-164.

- Frankel, R.M., M.F. Johnson and K.K. Nelson. 2002. The Relation between Auditors' Fees for Nonaudit Services and Earnings Management. *The Accounting Review* 77(Supplement):71-105.
- Friedlan, J. (1994). "Accounting choices by issuers of initial public offerings." *Contemporary Accounting Research* 11: 1-31
- Holthausen, R. (1990). "Accounting method choice: Opportunistic behavior, efficient contracting, and information perspectives." *Journal of Accounting and Economics*: 207-218.
- Ibrahim, S. (2009). "The Usefulness of Measures of Consistency of Discretionary Components of Accruals in the detection of Earnings Management." *Journal of Business Finance & Accounting*, forthcoming.
- Johnson, M., K. Nelson and A. Pritchard (2007) "Do the Merits Matter More? The Impact of the Private Securities Litigation Reform Act," *The Journal of Law, Economics, and Organization*, 23: 627-652.
- Jones, J. (1991). "Earnings management during import relief investigation." *Journal of Accounting Research* 29 (2): 193-228.
- Jones, C. L. (1998). "The Association of Earnings Management with Current Returns, Current Market Values, Future Returns, Executive Compensation and the Likelihood of Being a Target of 10B-5 Litigation." *Unpublished Dissertation*, Stanford University.
- Kaszniak, R. (1999). "On the Association between Voluntary Disclosure and Earnings Management." *Journal of Accounting Research* 37: 57-81.
- Kothari, S.P., Andrew Leone, and Charles Wasley. (2005). "Performance matched Discretionary Accrual Measures." *Journal of Accounting & Economics* 39 (February): 163-197.
- Lu, Yvonne., (2004). "Earnings management and securities litigation." *Working paper*, University of Southern California.
- Marquardt, Carol and Christine Wiedman (2004), "How are Earnings Managed? An Examination of Specific Accruals." *Contemporary Accounting Research* 21 (Summer): 461-489.
- McNichols, M. (2000). "Research Design Issues in Earnings Management Studies." *Journal of Accounting and Public Policy* 19: 313-345.

- Mohanram, P.S. (2003), 'How to manage earnings management', *Accounting World (India)*, Oct, pp. 1-21.
- Niehaus G, Roth G (1999) Insider trading, equity issues, and CEO turnover in firms subject to securities class action. *Financ Management* 284: 52–72
- Palmrose, Z. (1991). "Trials of Legal Disputes Involving Independent Auditors: Some Empirical Evidence," *Journal of Accounting Research (Supplement)*: 149-185.
- \_\_\_\_\_, Z., Richardson, V., and S. Scholz. (2004). "Determinants of market reactions to restatement announcements." *Journal of Accounting and Economics* 37: 59-89.
- Porter, M. (1980). *Competitive Strategy: Techniques for Analyzing Industries and Competitors*. Free Press, New York.
- PricewaterhouseCoopers (2000). "2000 Securities Litigation Study." [www.10b5.com](http://www.10b5.com).
- Priest, G. L., and B. Klein (1984). "The selection of disputes for litigation." *Journal of Legal Studies* 13:1-55.
- Rangan, S., (1998). "Earnings before seasoned equity offerings: are they overstated?" *Journal of Financial Economics* 50: 101–122.
- Shivakumar, L. (2000) "Do firms mislead investors by overstating earnings before seasoned equity offerings?" *Journal of Accounting and Economics*: 339-371.
- Stallworth, H. and D. Digregorio (2004). "Improper Revenue Recognition." *Internal Auditor* (June): 53-56.
- Teoh, S. H., I. Welch and T. J. Wong (1998a). "Earnings Management and the Post-Issue Performance of Seasoned Equity Offerings." *Journal of Financial Economics* 50: 63-99.
- Teoh, S. H., I. Welch and T. J. Wong (1998b). "Earnings Management and the Long-Term Market Performance of Initial Public Offerings." *Journal of Finance* 53: 1935-1974.

Appendix A: Examples of Litigation of Accounting-related Irregularities and Litigation of Non-accounting-related Irregularities.

*Litigation of Accounting-related Irregularities:*

1. Improper recognition of revenues and expenses

e.g., “Defendants knew or recklessly disregarded that the Company was overstating revenues and assets by a vast amount during the Class Period. As a result, investors have suffered substantial losses.”(360Networks, Inc., Filing year, 2002)

2. Financial statements mis-presentation

e.g., Defendants issued false and misleading statements about the company's financial condition.” (3Com Corp., Filing year, 2002)

3. Write-offs

e.g., “The Complaint alleges as follows: Overly aggressive accounting policies included the failure to take adequate write-offs of delinquent accounts. Sales of certain products with the right of return were improperly recognized.” (Adaptec, Inc., Filing year, 1998)

*Litigation of Non-accounting-related Irregularities:*

a) IPO price manipulation through inaccurate research reports

e.g., “The Complaint alleges that Defendants participated in a scheme to manipulate the market price of 24/7 common stock. The scheme was perpetrated by defendants through the issuance of inflated ratings and biased research reports for 24/7 common stock. Defendants' scheme with regard common stock was part of a larger scheme whereby Merrill Lynch research analysts in the internet group, under pressure from Merrill Lynch's investment bankers, would initiate, continue and/or manipulate research coverage to maintain and attract investment banking clients.” (24/7 Real Media, Inc., Filing year, 2002)

b) False disclosure of non-financial information

e.g., “Falsely portrayed the business model which was novel and untested as being viable. Falsely described future locations as being in 'high traffic' malls instead of the intended locations of strip malls. ” (2Connect Express Inc., Filing year, 2000)



## Appendix B: Variable definitions

Variables	Definition and data source
<i>Specific Discretionary Accruals</i>	
$DAC_t$	Discretionary accruals in year t from performance-modified Jones model
$DAR_t$	Discretionary positive accounts receivable in year t from performance-modified Jones model
$DEXP_t$	Discretionary negative expenses in year t = discretionary positive change in inventory + discretionary negative change in accounts payable + discretionary net change in other working capital accruals + discretionary negative depreciation, all from performance-modified Jones model
$DSI_t$	Discretionary special items in year t (Compustat #17)/ $A_{t-1}$
<i>Financial and Accrual Variables</i>	
$INC_t$	Income before extraordinary items (Compustat #18)/ $A_{t-1}$ (Total assets in year t-1) (Compustat#6)
$A_t$	Total assets in year t (Compustat #6)
$REV_t$	Net sales in year t (Compustat#12)/ $A_{t-1}$
$\Delta REV_t$	Change in net sales from year t-1 to year t (Compustat #12)/ $A_{t-1}$
$\Delta AR_t$	Positive change in accounts receivable from year t-1 to year t from cash flow statement (negative of Compustat #302)/ $A_{t-1}$
$\Delta INV_t$	Positive change in inventory from year t-1 to year t from cash flow statement (negative of Compustat #303)/ $A_{t-1}$
$\Delta AP_t$	Negative change in accounts payable and accrued liabilities from year t-1 to year t from cash flow statement (negative of Compustat #304)/ $A_{t-1}$
$\Delta TAX_t$	Negative change in accrued income taxes from year t-1 to year t from cash flow statement (negative of Compustat #305)
$\Delta OTH_t$	Net change in other assets and liabilities from year t-1 to year t from cash flow statement (negative of Compustat #307)
$\Delta OWC_t$	Net change in other working capital from year t-1 to year t = $(\Delta TAX_t + \Delta OTH_t)/ A_{t-1}$
$DEP_t$	Negative of depreciation and amortization expense from cash flow statement (negative of Compustat #125)/ $A_{t-1}$
$EXP_t$	Expense portion of accruals in year t = $\Delta INV_t + \Delta AP_t + \Delta OWC_t + DEP_t$
$TAC_t$	Total Accruals = $(\Delta AR_t + \Delta INV_t + \Delta AP_t + \Delta TAX_t + \Delta OTH_t + DEP_t)$

---

(continued Appendix B)

*Control Variables in Multivariate Tests*

$SIZE_t$	Log ( $TA_t$ )
$LEV_t$	Short-term debt (Compustat # 34) + long-term debt (Compustat #9)/ $A_t = (STD_t + LTD_t)/A_t$
$CFO_t$	Cash from Operations = $INC_t - TAC_t$
$ROA_t$	Return on assets in year t = $INC_t / A_t$
$MBT_t$	Market to book in year t = (Compustat#24*Compustat*25)/Compustat#60
$LOSS_t$	Indicator variable equal to one if income before extraordinary items is negative, and zero otherwise
$LIT\_RISK_t$	Indicator variable equal to one if observation belongs to industry with high litigation risk, as defined in Francis et al. (1994), and zero otherwise
$DROP_t$	Indicator variable equal to one if the firm experienced a one-day drop of 10% or more in market-adjusted returns in year t, and zero otherwise

*Test Variables in Multivariate Tests*

$LIT_t$	An indicator variable equal to one for class periods of firms that faced litigation, and zero otherwise
$SEO_t$	An indicator variable equal to one if there is a seasonal equity offering, and zero otherwise

---

Table 1: Industry and Inter-temporal Distribution of Litigation Observations:  
 Panel A: Distribution of Litigation Sample by Year:

Year	Litigation with Accounting Allegations		Litigation without Accounting Allegations		All Litigation	
	N	%	N	%	N	%
1989	2	0.38%	0	0.00%	2	0.21%
1990	2	0.38%	1	0.23%	3	0.31%
1991	2	0.38%	2	0.47%	4	0.42%
1992	4	0.76%	8	1.86%	12	1.26%
1993	32	6.11%	23	5.35%	55	5.77%
1994	41	7.82%	50	11.63%	91	9.54%
1996	41	7.82%	40	9.30%	81	8.49%
1997	52	9.92%	40	9.30%	92	9.64%
1998	59	11.26%	49	11.40%	108	11.32%
1999	63	12.02%	63	14.65%	126	13.21%
2000	74	14.12%	76	17.67%	150	15.72%
2001	75	14.31%	35	8.14%	110	11.53%
2002	49	9.35%	27	6.28%	76	7.97%
2003	28	5.34%	16	3.72%	44	4.61%
Total	524	100%	430	100%	954	100%

Panel B: Distribution of Litigation Sample by Industry:

Industry	Litigation with Accounting Allegations		Litigation without Accounting Allegations		All Litigation		Compustat Population
	N	%	N	%	N	%	%
(1) Natural resources	6	1%	2	0%	8	1%	6%
(2) Construction and metal	44	8%	20	5%	64	7%	6%
(3) Food	9	2%	12	3%	21	2%	2%
(4) Consumer goods	28	5%	22	5%	50	5%	4%
(5) Paper and printing	10	2%	29	7%	39	4%	3%
(6) Chemical and petroleum	40	8%	46	11%	86	9%	8%
(7) Machinery and equipment	171	33%	151	35%	322	34%	22%
(8) Transportation-related	12	2%	13	3%	25	3%	5%
(9) Telecommunications	11	2%	21	5%	32	3%	5%
(10) Wholesale and retail	95	18%	57	13%	152	16%	12%
(11) Insurance and real estate	10	2%	4	1%	14	1%	1%
(12) Entertainment	8	2%	2	0%	10	1%	2%
(13) Business services	57	11%	38	9%	95	10%	17%
(14) Health services	22	4%	13	3%	35	4%	7%
(15) Unidentified	1	0%	0	0%	1	0%	0%
Total	524	100%	430	100%	954	100%	100%

Panel A presents the yearly distribution of the litigation sample (class period year of sued firms). The table presents the firms that were sued for accounting-related irregularities, those that were sued with no accounting-related allegations and all sued firms. Panel B provides industry compositions of the litigation sample. The industries in Panel B are classified based on two-digit SIC codes as follows: (1) 0-9,10-14; (2) 15-19, 30, 32-34; (3) 20-21; (4) 22-23, 25, 31, 39; (5) 24, 26-27; (6) 28-29; (7) 35-36, 38; (8) 37, 40-47; (9) 48; (10) 50-59; (11) 61-67; (12) 78-79; (13) 73, 81; (14) 70, 72, 75-76, 80, 82-89; (15) 99.

Table 2: Descriptive Statistics for Litigation Sample:

Variable	Litigation with Accounting Allegations		Litigation without Accounting Allegations		All Litigation	
	N=524		N=430		N=954	
	Mean	Median	Mean	Median	Mean	Median
$INC_t$	-0.063	0.012	-0.116	0.010	-0.087	0.011
$REV_t$	1.399	1.193	1.333	1.138	1.369	1.171
$\Delta REV_t$	0.225	0.142	0.269	0.154	0.245	0.149
$\Delta AR_t$	0.039	0.017	0.037	0.016	0.038	0.017
$\Delta INV_t$	0.031	0.010	0.028	0.009	0.030	0.009
$\Delta AP_t$	-0.022	-0.007	-0.036	-0.012	-0.028	-0.010
$\Delta OWC_t$	0.005	0.003	0.005	0.002	0.005	0.002
$DEP_t$	-0.055	-0.048	-0.068	-0.058	-0.061	-0.052
$\Delta EXP_t$	-0.041	-0.041	-0.070	-0.062	-0.054	-0.050
$TAC_t$	-0.002	-0.021	-0.033	-0.048	-0.016	-0.033
$SI_t$	-0.048	-0.002	-0.040	0.000	-0.045	-0.001
$CFO_t$	-0.062	-0.001	-0.083	0.009	-0.071	0.005
$ROA_t$	-0.008	0.000	-0.006	0.000	-0.007	0.000
$A_t$	1,405.16	253.05	1,702.06	229.72	1,538.98	241.43
$MTB_t$	2.828	2.086	4.501	2.441	3.582	2.273

- a) The table contains means and medians of all variables in the litigation sample. It is divided in three samples: firms that experienced litigation with accounting allegations, firms that experienced litigation without accounting-related allegations and the entire litigation sample. Examples of accounting-related irregularities include improper recognition of revenue, failure to report write-offs for assets, underreporting reserves, and underreporting expenses. Examples of accounting-related irregularities include improper recognition of revenue, failure to report write-offs for assets, underreporting reserves, and underreporting expenses. The firms without accounting-related allegations include non-accounting-related irregularities such as registration omissions for initial public offering firms, failure to act in the best interest of investors, misleading investors in public statements, and failure to report negative future prospects of firm.
- b)  $INC_t$  is Income before extraordinary items (Compustat #18)/  $A_{t-1}$  (Total assets in year t-1) (Compustat#6);  $A_t$  is Total assets in year t (Compustat #6);  $INV_t$  is the positive change in inventories (negative of Compustat #303);  $REV_t$  is Net sales in year t (Compustat#12)/ $A_{t-1}$ ;  $\Delta REV_t$  is Change in net sales from year t-1 to year t (Compustat #12)/  $A_{t-1}$ ;  $\Delta AR_t$  is Positive change in accounts receivable from year t-1 to year t from cash flow statement (negative of Compustat #302)/  $A_{t-1}$ ;  $\Delta AP_t$  is

Negative change in accounts payable and accrued liabilities from year t-1 to year t from cash flow statement (negative of Compustat #304)/  $A_{t-1}$ ;  $\Delta OWC_t$  is Net change in other working capital from year t-1 to year t =  $(\Delta TAX_t + \Delta OTH_t) / A_{t-1}$ ;  $DEP_t$  is Negative of depreciation and amortization expense from cash flow statement (negative of Compustat #125)/  $A_{t-1}$ ;  $\Delta EXP_t$  is Expense portion of accruals in year t =  $\Delta INV_t + \Delta AP_t + \Delta OWC_t + DEP_t$ ;  $TAC_t$  is Total Accruals =  $(\Delta AR_t + \Delta INV_t + \Delta AP_t + \Delta TAX_t + \Delta OTH_t + DEP_t)$ ;  $SI_t$  is Discretionary special items in year t (Compustat #17)/ $A_{t-1}$ ;  $CFO_t$  is Cash from operations =  $INC_t - TAC_t$ ;  $ROA_t$  is Return on assets in year t =  $INC_t / A_t$ ;  $MTB_t$  is Market to book in year t =  $(Compustat\#24 * Compustat\#25) / Compustat\#60$ .

Table 3: Pearson Correlation Coefficients (p-values) of Discretionary Accruals and Components of Accruals in Litigation Sample:

Panel A: Litigation with Accounting Allegations: (N=524)

	$REV_t$	$A_t$	$CFO_t$	$ROA_t$	$DAC_t$	$DAR_t$	$DEXP_t$	$DSI_t$
$INC_t$	0.266 (0.001)	0.117 (0.007)	0.874 (0.001)	0.350 (0.001)	0.268 (0.001)	0.136 (0.002)	0.219 (0.001)	0.629 (0.001)
$REV_t$	1.000	0.027 (0.542)	0.166 (0.000)	0.096 (0.029)	0.093 (0.034)	0.086 (0.049)	0.028 (0.524)	0.123 (0.005)
$A_t$		1.000	0.164 (0.000)	0.032 (0.461)	-0.067 (0.128)	-0.046 (0.289)	-0.047 (0.280)	-0.002 (0.970)
$CFO_t$			1.000	0.315 (0.001)	-0.192 (0.001)	-0.144 (0.001)	-0.125 (0.004)	0.596 (0.001)
$ROA_t$				1.000	0.065 (0.138)	0.026 (0.549)	0.060 (0.170)	0.254 (0.001)
$DAC_t$					1.000	0.620 (0.001)	0.710 (0.001)	0.111 (0.011)
$DAR_t$						1.000	-0.098 (0.025)	0.021 (0.635)
$DEXP_t$							1.000	0.127 (0.004)

Panel B: Litigation without Accounting Allegations: (N=430)

	$REV_t$	$A_t$	$CFO_t$	$ROA_t$	$DAC_t$	$DAR_t$	$DEXP_t$	$DSI_t$
$INC_t$	0.307 (0.001)	0.163 (0.001)	0.929 (0.001)	0.504 (0.001)	0.244 (0.001)	0.047 (0.335)	0.241 (0.001)	0.413 (0.001)
$REV_t$	1.000	-0.076 (0.118)	0.250 (0.001)	0.129 (0.007)	0.055 (0.251)	0.087 (0.073)	-0.036 (0.463)	0.062 (0.198)
$A_t$		1.000	0.170 (0.000)	0.080 (0.098)	0.003 (0.946)	0.041 (0.398)	-0.022 (0.655)	0.067 (0.163)
$CFO_t$			1.000	0.428 (0.001)	-0.085 (0.078)	-0.147 (0.002)	0.009 (0.852)	0.401 (0.001)
$ROA_t$				1.000	0.097 (0.044)	0.079 (0.100)	0.032 (0.513)	0.042 (0.390)
$DAC_t$					1.000	0.585 (0.001)	0.684 (0.001)	0.104 (0.031)
$DAR_t$						1.000	-0.172 (0.000)	0.042 (0.390)
$DEXP_t$							1.000	0.095 (0.049)

c) Panel A reports firms with accounting-related allegations, while Panel B reports firms without accounting-related allegations. Examples of accounting-related irregularities include improper recognition of revenue, failure to report write-offs for assets, underreporting reserves, and underreporting expenses. Examples of

- accounting-related irregularities include improper recognition of revenue, failure to report write-offs for assets, underreporting reserves, and underreporting expenses. The firms without accounting-related allegations include non-accounting-related irregularities such as registration omissions for initial public offering firms, failure to act in the best interest of investors, misleading investors in public statements, and failure to report negative future prospects of firm.
- a)  $INC_t$  is Income before extraordinary items (Compustat #18) /  $A_{t-1}$  (Total assets in year t-1) (Compustat#6);  $A_t$  is Total assets in year t (Compustat #6);  $REV_t$  is Net sales in year t (Compustat#12) /  $A_{t-1}$ ; ;  $CFO_t$  is Cash from Operations =  $INC_t - TAC_t$ ;  $ROA_t$  is Return on assets in year t =  $INC_t / A_t$ ;  $DAC_t$  is Discretionary accruals in year t from performance-modified Jones model;  $DAR_t$  is Discretionary positive accounts receivable in year t from performance-modified Jones model;  $DEXP_t$  is Discretionary negative expenses in year t.



*Table 4: Univariate Tests of Differences in Discretionary Accruals and Components of Accruals in Litigation Sample and Performance-Matched Control Sample with Stock Drop of 10% or More:*

	<i>Litigation with Accounting Allegations (n=524)</i>		<i>Performance-Matched Observations with Stock Drop of 10% or More (n=524)</i>		<i>Difference</i>			
	<u>Mean</u>	<u>Median</u>	<u>Mean</u>	<u>Median</u>	<u>Mean</u>		<u>Median</u>	
$DAC_t$	0.023	0.014	0.006	-0.002	0.018	***	0.016	***
$DAR_t$	0.015	0.004	0.003	-0.005	0.012	***	0.009	***
$DEXP_t$	0.010	0.012	0.004	0.004	0.007		0.008	
$DSI_t$	-0.048	-0.002	-0.024	0.000	-0.024	***	-0.002	***

- a) The table compares the accounting-related litigation observations to a performance-matched sample of Compustat observations with a stock drop of 10% or more. Matching is based on industry, denoted as the two-digit SIC code, and the level of performance, denoted as the return on assets in the current year.
- b) \*\*\*, \*\*, \* denote two-tailed significant differences between litigation sample matched observations at levels of 1%, 5% and 10%, respectively. The mean differences are measured using a paired t-test and the median differences are measured using a Wilcoxon Signed rank test.
- c)  $DAC_t$ ,  $DAR_t$ ,  $DEXP_t$ , and  $DSI_t$  represent respectively discretionary accruals in year t from performance-modified Jones model, discretionary positive accounts receivable in year t from performance-modified Jones model, discretionary negative expenses in year t, and discretionary special items in year t (Compustat #17)/ $A_{t-1}$ .

Table 5: Tests of Probability of Litigation:

Probit regressions for Litigation Sample with Accounting Allegations and Performance-Matched Observations with 10% or More Stock Drop: (N=1,048)

<i>Indep. Variable</i>	<i>DAC</i>		<i>DAR</i>		<i>DEXP</i>		<i>DSI</i>	
<i>Discretionary Component</i>	0.789	(2.89)*	1.221	(4.42)**	0.195	(0.13)	-0.721	(2.27)
<i>SIZE</i>	0.097	(13.57)***	0.097	(13.48)***	0.097	(13.55)***	0.089	(10.87)***
<i>LEV</i>	-0.208	(1.13)	-0.212	(1.17)	-0.229	(1.38)	-0.238	(1.47)
<i>ROA</i>	-0.185	(0.05)	-0.101	(0.02)	-0.012	(0.00)	0.171	(0.05)
<i>CFO</i>	-0.930	(13.35)***	-0.979	(16.41)***	-1.084	(19.87)***	-0.997	(16.33)***
<i>MTB</i>	-0.003	(0.26)	-0.004	(0.48)	-0.004	(0.35)	-0.005	(0.50)
<i>LOSS</i>	0.102	(1.00)	0.086	(0.76)	0.049	(0.25)	0.011	(0.01)
<i>LIT_RISK</i>	0.070	(0.63)	0.067	(0.57)	0.071	(0.64)	0.068	(0.59)
<i>DROP</i>	-6.934	(0.00)	-6.956	(0.00)	-6.912	(0.00)	-6.909	(0.00)
Likelihood Ratio Chi-Square	1,265.68		1,264.13		1,268.43		1,266.28	

- a) The results in the tables are coefficients (Chi-square values) from the probit regressions of the form:

$$Prob(LIT_t) = \alpha_1 + \beta_1 Discretionary\ Component_t + \beta_2 SIZE_t + \beta_3 LEV_t + \beta_4 CFO_t + \beta_5 ROA_t + \beta_6 MTB_t + \beta_7 LOSS_t + \beta_8 LIT\_RISK_t + \beta_9 DROP_t + \varepsilon$$

- b) Discretionary Components are  $DAC_t$ ,  $DAR_t$ ,  $DEXP_t$ , and  $DSI_t$ . They represent respectively discretionary accruals in year t from performance-modified Jones model, discretionary positive accounts receivable in year t from performance-modified Jones model, discretionary negative expenses in year t, and discretionary special items in year t (Compustat #17)/ $A_{t-1}$ . They are measures of earnings management. Discretionary accounts receivable ( $DAR$ ) proxy for earnings management through maximizing recurring revenues. Discretionary expenses ( $DEXP$ ) proxy for earnings management through reducing expenses. Discretionary special items ( $DSI$ ) proxy for earnings management through non-recurring items. The dependent variable is the litigation variable  $LIT$ , an indicator variable equal to one for class periods of firms that faced litigation. The control variables included in the regression are associated with the likelihood of litigation. They are:  $SIZE$  = Log (Total assets at beginning of year),  $LEV$  = leverage = total of short-term debt and long-term debt divided by total assets,  $ROA$  = return on assets measured as net income divided by total assets,  $MTB$  = market to book value measured as market value of assets divided by book value of assets at year end,  $LOSS$  = indicator variable equaling 1 when the firm has a net loss, and 0 otherwise,  $LIT\_RISK$  = indicator variable equaling 1 if the firm operates in a high-risk environment, as defined in Francis et al., 1994, and 0 otherwise,  $DROP$  = indicator variable equaling 1 if the firm experienced a one-day stock drop of 10% or more in year t, and 0 otherwise. For the matched sample, each litigation firm is matched by selecting a non-sued firm/year observation from firms with a 10% or more stock drop in the same two-digit SIC code and year with the closest match

of return on assets. <sup>\*\*\*</sup>, <sup>\*\*</sup>, <sup>\*</sup> denote two-tailed significance levels of 1%, 5% and 10%, respectively.

Table 6: Multivariate Tests of Discretionary Accruals and Components of Accruals and Litigation in the Pre-PSLRA and Post-PSLRA Periods: (N=1,048):

<i>Indep. Variable</i>	<i>DAC</i>	<i>DAR</i>	<i>DEXP</i>	<i>DSI</i>
<i>Pre-PSLRA Period: (N=166)</i>				
<i>Discretionary Component</i>	-2.499 (3.62)*	-1.822 (1.32)	-1.123 (0.62)	-2.925 (1.51)
<i>SIZE</i>	0.203 (4.40)**	0.197 (4.25)**	0.183 (3.79)*	0.162 (2.90)*
<i>LEV</i>	-0.259 (0.17)	-0.302 (0.22)	-0.128 (0.04)	-0.061 (0.01)
<i>ROA</i>	15.053 (2.90)*	9.891 (1.38)	11.070 (1.87)	8.549 (1.06)
<i>CFO</i>	-3.626 (10.70)***	-2.931 (8.93)***	-2.806 (8.44)***	-2.352 (6.47)**
<i>MTB</i>	0.249 (10.84)***	0.217 (9.32)***	0.206 (8.82)***	0.205 (8.48)***
<i>LOSS</i>	-0.066 (0.05)	0.047 (0.03)	0.105 (0.14)	-0.022 (0.01)
<i>LIT_RISK</i>	0.074 (0.09)	0.072 (0.08)	0.086 (0.12)	0.078 (0.09)
<i>DROP</i>	-7.371 (0.00)	-7.414 (0.00)	-7.499 (0.00)	-7.399 (0.00)
Likelihood Ratio Chi-Square	162.49	164.89	165.63	164.66
<i>Post-PSLRA Period: (N=882)</i>				
<i>Discretionary Component</i>	0.955 (3.42)*	1.481 (5.23)**	0.125 (0.05)	-0.711 (2.10)
<i>SIZE</i>	0.093 (10.71)***	0.095 (10.94)***	0.093 (10.60)***	0.084 (8.39)***
<i>LEV</i>	-0.216 (1.07)	-0.232 (1.23)	-0.238 (1.29)	-0.253 (1.44)
<i>ROA</i>	-0.182 (0.05)	-0.094 (0.01)	0.029 (0.00)	0.203 (0.07)
<i>CFO</i>	-0.796 (8.87)***	-0.854 (11.24)***	-0.981 (14.64)***	-0.877 (11.21)***
<i>MTB</i>	-0.007 (0.93)	-0.008 (1.38)	-0.008 (1.23)	-0.009 (1.48)
<i>LOSS</i>	0.109 (0.96)	0.090 (0.71)	0.045 (0.17)	0.012 (0.01)
<i>LIT_RISK</i>	0.087 (0.82)	0.081 (0.71)	0.089 (0.87)	0.087 (0.81)
<i>DROP</i>	-6.896 (0.00)	-6.890 (0.00)	-6.859 (0.00)	-6.863 (0.00)
Likelihood Ratio Chi-Square	1,080.45	1,078.60	1,083.82	1,081.75

a) The table reports the results in the sample of firms with accounting-related allegations and its performance-matched sample.

b) The results in the tables are coefficients (Chi-square values) from the probit regressions of the form:

$$Prob(LIT_t) = \alpha_1 + \beta_1 Discretionary\ Component_t + \beta_2 SIZE_t + \beta_3 LEV_t + \beta_4 CFO_t + \beta_5 ROA_t + \beta_6 MTB_t + \beta_7 LOSS_t + \beta_8 LIT\_RISK_t + \beta_9 DROP_t + \varepsilon$$

Discretionary Components are  $DAC_t$ ,  $DAR_t$ ,  $DEXP_t$ , and  $DSI_t$ . They represent respectively discretionary accruals in year t from performance-modified Jones

model, discretionary positive accounts receivable in year  $t$  from performance-modified Jones model, discretionary negative expenses in year  $t$ , and discretionary special items in year  $t$  (Compustat #17)/ $A_{t-1}$ . They are measures of earnings management. Discretionary accounts receivable (*DAR*) proxy for earnings management through maximizing recurring revenues. Discretionary expenses (*DEXP*) proxy for earnings management through reducing expenses. Discretionary special items (*DSI*) proxy for earnings management through non-recurring items. The dependent variable is the litigation variable *LIT*, an indicator variable equal to one for class periods of firms that faced litigation. The control variables included in the regression are associated with the likelihood of litigation. They are: *SIZE* = Log (Total assets at beginning of year), *LEV* = leverage = total of short-term debt and long-term debt divided by total assets, *ROA* = return on assets measured as net income divided by total assets, *MTB* = market to book value measured as market value of assets divided by book value of assets at year end, *LOSS* = indicator variable equaling 1 when the firm has a net loss, and 0 otherwise, *LIT\_RISK* = indicator variable equaling 1 if the firm operates in a high-risk environment, as defined in Francis et al., 1994, and 0 otherwise, *DROP* = indicator variable equaling 1 if the firm experienced a one-day stock drop of 10% or more in year  $t$ , and 0 otherwise. For the matched sample, each litigation firm is matched by selecting a non-sued firm/year observation from firms with a 10% or more stock drop in the same two-digit SIC code and year with the closest match of return on assets. \*\*\*, \*\*, \* denote two-tailed significance levels of 1%, 5% and 10%, respectively.

Table 7: Multivariate Tests of Discretionary Accruals and Components of Accruals and Litigation in Firms with Seasoned Equity Offerings:

Variable	$DAC_t$	$DAR_t$	$DEXP_t$	$DSI_t$
$LIT_t$	0.012 (0.546)	0.030 (0.059)*	-0.018 (0.330)	-0.015 (0.364)
$SIZE_t$	-0.001 (0.541)	-0.002 (0.093)*	0.002 (0.210)	-0.002 (0.175)
$LEV_t$	-0.008 (0.492)	-0.029 (0.001)***	0.017 (0.088)*	-0.003 (0.736)
$ROA_t$	0.332 (0.001)***	0.200 (0.001)***	0.134 (0.012)**	-0.073 (0.133)
$CFO_t$	-0.236 (0.001)***	-0.118 (0.001)***	-0.124 (0.001)***	0.037 (0.000)***
$MTB_t$	0.000 (0.988)	0.000 (0.973)	0.000 (0.833)	0.000 (0.374)
$LOSS_t$	-0.090 (0.001)**	-0.042 (0.001)**	-0.048 (0.001)**	-0.034 (0.001)***
$LIT\_RISK_t$	-0.007 (0.178)	0.006 (0.111)	-0.014 (0.001)***	-0.011 (0.007)***
Adjusted $R^2$	21.61%	11.97%	9.41%	7.44%

a) The results in the tables are coefficients (p-values) from the regressions of the form:

$$Discretionary\ Component_t = LIT_t + SIZE_t + LEV_t + ROA_t + CFO_t + MTB_t + LOSS_t + LIT\_RISK_t + \varepsilon$$

b) The Discretionary Component are  $DAC_t$ ,  $DAR_t$ ,  $DEXP_t$ , and  $DSI_t$ . They represent respectively Discretionary accruals in year t from performance-modified Jones model, Discretionary positive accounts receivable in year t from performance-modified Jones model, Discretionary negative expenses in year t, and Discretionary special items in year t (Compustat #17)/At-1. They are regressed on the litigation variable LIT (An indicator variable, which equals one for class periods of firms that faced litigation, and zero otherwise) and a group of control variables. They are: SIZE = Log (Total assets at beginning of year), LEV = leverage = total of short-term debt and long-term debt divided by total assets, CFO = cash from operations from the cash flow statement, ROA = return on assets measured as net income divided by total assets, MTB = market to book value measured as market value of assets divided by book value of assets at year end, LOSS = indicator variable equaling 1 when the firm has a net loss, and 0 otherwise, LIT\_RISK = indicator variable equaling 1 if the firm operates in a high-risk environment, as defined in Francis et al., 1994, and 0 otherwise. The purpose is to examine the association between the likelihood of litigation and earnings components manipulation around seasoned earnings offerings. \*\*\*, \*\*, \* denote two-tailed significance levels of 1%, 5% and 10%, respectively. There are 1,393 observations.

Table 8: Multivariate Tests of Discretionary Accruals and Components of Accruals and Litigation:

Litigation with Accounting Allegations for Matched Sample (N=1,048)

Variable	$DAC_t$		$DAR_t$		$DEXP_t$		$DSI_t$	
$LIT_t$	0.011	(1.74)*	0.010	(2.08)**	0.003	(0.49)	-0.007	(1.23)
$SIZE_t$	0.001	(0.39)	0.001	(0.46)	0.000	(0.02)	-0.010	(-6.05)***
$LEV_t$	-0.028	(-2.07)**	-0.021	(-2.04)**	-0.004	(-0.34)	-0.010	(-0.81)
$CFO_t$	-0.193	(-12.80)***	-0.097	(-8.33)***	-0.102	(-7.76)***	0.221	(15.22)***
$MTB_t$	0.000	(-0.27)	0.000	(1.49)	-0.001	(-1.74)*	0.000	(-0.26)
$LOSS_t$	-0.076	(-11.26)***	-0.034	(-6.64)***	-0.043	(-7.44)***	-0.034	(-5.26)***
$LIT\_RISK_t$	-0.003	(-0.49)	0.003	(0.68)	-0.005	(-0.94)	-0.003	(-0.53)
$DROP_t$	-0.003	(-0.24)	0.005	(0.60)	-0.005	(-0.52)	-0.009	(-0.85)
Adjusted $R^2$	17.62%		8.41%		7.38%		29.73%	

a) The table presents multivariate regression results for the sample of firms with litigation with accounting-related allegations and its performance-matched sample of firms with a stock drop of 10 percent or more.

b) The results in the tables are coefficients (t-statistics) from the regressions of the form:

$$Discretionary\ Component_t = LIT_t + SIZE_t + LEV_t + ROA_t + CFO_t + MTB_t + LOSS_t + LIT\_RISK_t + \varepsilon \quad (4)$$

c) Discretionary Components are  $DAC_t$ ,  $DAR_t$ ,  $DEXP_t$ , and  $DSI_t$ . They represent respectively Discretionary accruals in year t from performance-modified Jones model, Discretionary positive accounts receivable in year t from performance-modified Jones model, Discretionary negative expenses in year t, and Discretionary special items in year t (Compustat #17)/ $A_{t-1}$ . They are measures of earnings management. Discretionary accounts receivable ( $DAR$ ) proxy for earnings management through maximizing recurring revenues. Discretionary expenses ( $DEXP$ ) proxy for earnings management through reducing expenses. Discretionary special items ( $DSI$ ) proxy for earnings management through non-recurring items. They are regressed on the litigation variable  $LIT$  (An indicator variable equal to one for class periods of firms that faced litigation, and zero otherwise) and a group of control variables. The control variables are associated with incentives to manage earnings as well as the discretionary accruals measure. They are:  $SIZE$  = Log (Total assets at beginning of year),  $LEV$  = leverage = total of short-term debt and long-term debt divided by total assets,  $CFO$  = cash from operations from the cash flow statement,  $ROA$  = return on assets measured as net income divided by total assets,  $MTB$  = market to book value measured as market value of assets divided by book value of assets at year end,  $LOSS$  = indicator variable equaling 1 when the firm has a net loss, and 0 otherwise,  $LIT\_RISK$  = indicator variable equaling 1 if the firm operates in a high-risk environment, as defined in Francis et al., 1994, and 0 otherwise,  $DROP$  = indicator variable equaling 1 if the firm experienced a one-day stock drop of 10% or more in year t, and 0 otherwise. In the matched sample, each litigation firm is matched by

selecting a non-sued firm/year observation from firms that had a daily stock drop of 10 percent or more and are in the same two-digit SIC code and year with the closest match of return on assets. \*\*\*, \*\*, \* denote two-tailed significance levels of 1%, 5% and 10%, respectively.