Financial Distress and Earnings Management: Effectiveness of Independent Audit Committees

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Working Paper Series WCRFS: 06-31
Acknowledgement: The authors are grateful to the valuable comments and suggests provided by April Klein, Yaw Mensah, Ling Lei, Clive Lennox, and participants at the 12th annual mid-year auditing conference and at the New York University seminar. We thank the Whitcomb Center for Research in Financial Services for providing research support through use of the WRDS system.
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ABSTRACT

This study empirically tests whether independent audit committees protect investors’ interests by constraining managerial behavior of earnings management, especially when managers have a strong motivation to manage the reported earnings in financially distressed firms. Additionally, it examines whether monitoring of earnings management is more effective when audit committees are fully independent than partially independent. Audit committees are considered fully independent when all committee members are independent, as required under the Sarbanes-Oxley Act, and partially independent when the percentage of independent members is between 70% and 99%. Discretionary accruals are used as a proxy for earnings management, and financially distressed and non-distressed firms are identified based on losses and negative cash flows for two consequent years.

The results show that monitoring of earnings management by independent audit committees is more effective when firms are in financial distress. Additionally, we find that there is no significant difference in the monitoring effectiveness of audit committees when they are fully independent or partially independent. Our results are robust to alternative proxies for financial distress and earnings management. The results thus suggest independence of audit committees plays an important role in providing credibility to the reported earnings numbers when there is a strong motivation for managers to manipulate them. Additionally, the results suggest that relaxation of the requirement of 100% independence of audit committee membership may provide some flexibility to firms, without compromising audit committees’ independence. Additionally, we find that audit committees in financially distressed firms meet more frequently than those in non-distressed firms and that there is no significant association between discretionary accruals and frequency of meetings in financially distressed firms.

Key Words: Independent Audit Committee; Earnings Management; Financial Distress
Financial Distress and Earnings Management: Effectiveness of Independent Audit Committees

I. INTRODUCTION

Independence of US corporate boards and especially of their audit committees has been attracting regulators’ attention for quite sometime. Based on recommendation of the Blue Ribbon Committee, all major U.S. stock exchanges in 1999 started encouraging registrants to have all audit committee members to be independent, but they did not set it as a mandatory listing requirement (NYSE/NAS 1999). Recent corporate scandals, such as Enron, Worldcom, etc. again underscored the weaknesses in corporate board governance mechanism and provided strong incentives to US policy makers to re-evaluate corporate board independence. In response to the concerns raised by these recent scandals, the US Congress passed the Sarbanes-Oxley Act in 2002, which, among other provisions, contained a provision mandating full independence of audit committees, i.e. 100% audit committee members should be independent. This requirement is based on the premise that fully independent audit committees would provide an effective monitoring of accounting policies and managerial actions that would ensure reliability and credibility of information provided to investors. The Securities and Exchange Commission (SEC) implemented this requirement by adopting new rules on audit committees, which are set forth in the Exchange Act Rule 10A-3 (SEC 2003).

Recently, some studies have evaluated the monitoring effectiveness of independent audit committees by examining the association between the percentage of independent audit committee members and earnings management, proxied by discretionary accruals (e.g. Klein 2002; Xie et al. 2003; Bedard et al. 2004). The findings
of these studies indicate that there is a negative association between the percentage of independent members on audit committees and discretionary accruals, suggesting that a higher percentage of independent committee members has a constraining effect on earnings management. These studies are, however, based on all firms irrespective of their financial position, which may or may not provide an incentive to managers for earnings manipulation. We argue in this study that reported earnings are especially manipulated when there is a strong motivation for managers to do so and benefits from earnings manipulation outweigh the costs associated with it. It is well documented in the literature that managers of financially distressed firms have a strong incentive to camouflage weak performance in financial distressed firms to send positive signals to investors or to reduce the impact of negative signals emanating from financial distress (e.g. Sweeney 1994; DeFond and Jiambalvo 1994; DeAngelo et al. 1994; Jaggi and Lee 2002). A special evaluation of the monitoring effectiveness of audit committees in financially distressed firms is further justified on the ground that reliability and unbiasedness of reported information in this situation is critical for investors to evaluate their risk in these firms. In order to have a better insight into the monitoring effectiveness of independent committees in financially distressed firms, we conduct a comparative evaluation of the association of earnings management with independent audit committees in financially distressed and non-distressed firms.

Additionally, we examine whether a fully independent committee, i.e. when all audit committee members are independent, as required under the Sarbanes Oxley Act, is more effective in monitoring earnings management than partially independent audit committees. We consider audit committees to be partially independent when the
percentage of independent members is between 70% and 99%. Because audit committees in most firms consist of 3 or 4 members, a 70% cutoff suggests that one audit committee member can be an executive member or an outside non-independent member. A higher monitoring effectiveness of fully independent audit committees compared to partially independent audit committee would provide support to the existing requirement of full independence of audit committee under the Sarbanes-Oxley Act. If monitoring by partially independent audit committees is as effective as by fully independent audit committees, relaxation of this requirement will be justified to provide more flexibility in appointing audit committee members without jeopardizing the committee’s monitoring effectiveness. As an additional analysis, we examine whether the frequency of audit committee meetings will have an impact on earnings management, especially in financial distressed firms.

The study is based on all firms that are covered by the 2002 corporate library database, which contains information on independent audit committees. The firms are identified as financially distressed firms if they experienced losses for two consecutive years, i.e. year 2000 and 2001, and/or their operating cash flows for two consecutive years were negative (e.g. Jaggi and Lee, 2002). This procedure resulted in 228 firms being identified as financially distressed. The remaining 944 firms covered by the 2002 database (excluding financial firms and firms with missing data) are classified as financially non-distressed firms. We evaluate the robustness of our findings by using Altman Z-score (Altman 1968) for differentiating between financially distressed and non-distressed firms. Financial data are obtained from the Compustat data base. Meeting Frequency of audit committees are manually collected through proxy statements.
We use current discretionary accruals as a proxy for earnings management because they can be easily manipulated (e.g. Ashbaugh et al., 2003; Xie, et al., 2003). We estimate current discretionary accruals based on the performance-adjusted current discretionary accruals’ model, as suggested by Kothari et al. (2005) and used by Ashbaugh et al. (2003). In accordance with the Sarbanes-Oxley Act, audit committees are considered fully independent when all committee members are independent. The audit committees are considered partially independent when less than 100% but at least 70% of members are independent. Unlike prior studies (e.g., Klein 2002), this study does not define partial independence based upon a threshold of 50% because for 95% of our sample firms at least 50% of members are independent.

Because absolute value of discretionary accruals is truncated, we use Tobit model to evaluate the association between current discretionary accruals, proxy of earnings management, and independent audit committees (e.g. Klein, 2002). Consistent with the findings of earlier research studies (e.g. Ashbaugh et al. 2003, Butler et al. 2004), we use firm size, growth, leverage, industry litigation risk, institutional ownership, and previous year’s current accruals as control variables.

The findings show that there is a negative association between the absolute value of current discretionary accruals, proxy for earnings management and independent audit committees. The negative association is significantly stronger for financially distressed firms compared to financially non-distressed firms. These findings thus show that independent audit committees are more effective in controlling managerial behavior of earnings management when the firms are in financial distress. Untabulated results on the use of positive and negative discretionary accruals show that independent audit
committees are equally concerned with upward or downward adjustment of reported earnings using positive and negative discretionary accruals respectively. Additionally, the findings show that there is no difference in the monitoring effectiveness when audit committees are fully or partially independent. These findings thus suggest that monitoring effectiveness of audit committee is not compromised if the percentage of independent members is reduced to 70%. The results on the frequency of audit committee meetings show that the audit committees meet more frequently in financially distressed firms than in financially non-distressed firms. There is, however, no significant association between discretionary accruals and frequency of meetings for financially distressed firms.

The study makes the following contributions to the literature. First, the findings provide additional evidence that independent audit committees provide effective monitoring of earnings management, which enhances the reliability of reported earnings. Second, the effectiveness of independent audit committees is especially evident in financially distressed firms, which provide a strong motivation to managers to manipulate the reported earnings and when the reliability of reported information is critical for investors. Third, the findings show that the monitoring effectiveness of audit committees is not compromised when the percentage of independent committee members is less than 100%, but at least 70%. Fourth, independent audit committees are equally concerned with the use of positive discretionary accruals and with the use of negative discretionary accruals. Finally, this study documents a significantly higher meeting frequency of audit committees in financially distressed firms compared to financially non-distressed firms.
However, there is no significant association between earnings management and meeting frequency of audit committees in financially distressed firms.

The remainder of the paper is organized as follows: In section two, we provide background the study, and in part three we discuss research design, including hypotheses for the study. Discussion of results is contained in part four, and part five contains summary and conclusion.

II. BACKGROUND FOR THE STUDY

Though there is no specific theory to explain the need for an audit committee (e.g. Hermelin and Weisbach 2003; DeFond and Francis 2005), different commissions and committees set up at different times have emphasized the importance of audit committees in ensuring reliability and credibility of financial information provided by management to investors. In October 1987, a Report of the National Commission on Fraudulent Financial Reporting (known as Treadway Commission) recommended that all public companies to have audit committees composed entirely of independent directors and that the audit committee should exercise vigilant and informed oversight of the financial reporting process. Though audit committees started playing an active role in corporate governance after Treadway Commission’s recommendations, it was, however, not until late 1990s that the need for more effective oversight over financial reporting by audit committees was realized. In 1999, a Committee on “Improving the Effectiveness of Corporate Audit Committee” (Blue Ribbon Committee) issued recommendations to strengthen the effectiveness of audit committees. Based on the recommendation of the Blue Ribbon Committee, in December 1999, all major U.S. stock exchanges started
encouraging the listed companies to have audit committees comprised solely of independent directors. Small companies were exempted from this recommendation. The corporate boards, however, were given discretion to include inside directors in audit committees, when appropriate. As a result of this recommendation, appointment of independent on audit committees developed into a common practice, but most firms did not require all committee members to be independent.

Collapse of large US corporations, such as Enron, Worldcom, etc., again attracted attention of policy makers and regulators to re-evaluate independence of corporate boards, including independence of audit committee. In response to the crisis created by the collapse of US corporations, the US Congress passed the Sarbanes-Oxley Act in 2002. The main objective of this legislation has been to create confidence in financial reporting and financial markets. Section 301 of the Act mandates that all companies must have an audit committee and it should consist of entirely independent directors. To be considered ‘independent’, a member of an audit committee shall not: (1) accept any consulting, advisory, or other compensatory fee from the issuer; or (2) be an affiliated person of the issuer or any subsidiary. Among others, the Act contains a rule (Section 407 of the Act) that requires the firms to disclose whether or not, and if not, the reasons therefore, audit committees is comprised of at least one ‘financial expert’. The SEC issued the Exchange Act Rule 10A-3 to implement different provisions of the Act relating to audit committee (SEC 2003).

The objective of this study is to examine whether monitoring of earnings management by independent audit committees is effective especially when a firm is in financial distress and when investors are particularly concerned about reliability and
unbiased reporting for evaluating their risk. Additionally, the study evaluates whether 100% independence of audit committees, as mandated by the Sarbanes Oxley Act, is more effective in monitoring earnings management than a partially independent audit committee, which means that an executive or some other non-independent directors is also appointed on the committee. We also examine the association between earnings management and frequency of audit committee meetings, especially for financially distressed firms.

III. RESEARCH DESIGN

1. Hypotheses

(a) Association between Independent Audit Committees and Earnings Management

It is well documented in the literature that financial distress provides a strong incentive for managers to manipulate reported earnings for different reasons, such as avoiding debt covenant violations, avoiding losses or declines in earnings, etc. Sweeney (1994) finds that managers may manipulate the reported earnings to avoid debt covenant violations by using the choice of accounting methods. DeFond and Jiambalvo (1994), DeAngelo et al. (1994), and Jaggi and Lee (2002) argue that managers use discretionary accruals when the firm’s financial distress is likely to result in debt covenant violations. DeFond and Jiambalvo (1994) document that positive discretionary accruals are used to avoid debt covenant violations, whereas DeAngelo et al. (1994) show that negative discretionary accruals are used by financially distressed firms to obtain better terms during renegotiation of the contracts. Jaggi and Lee (2002) present evidence that the use of positive and negative discretionary accruals would depend upon the severity of financial distress. Some studies also show that managers may use positive discretionary
accruals to avoid losses, earnings decreases or to meet market expectations, proxied by analyst forecasts or previous year’s performance (e.g. Burgstahler and Dichev 1997).

Whatever the reason, manipulation of reported earnings camouflages the firm’s operating performance and reduces reliability of reported information. The policy makers as well as regulators are especially concerned when biased information is provided to investors because it will have a negative impact on their decision making process, which in turn will have a negative influence on smooth functioning of financial markets. These concerns have encouraged policy makers and regulators to develop laws and regulations to ensure accuracy and reliability of reported information, which is achieved by external and/or internal monitoring of managerial behavior of earnings management. While external monitoring is provided by independent external auditors, internal monitoring is accomplished through independent corporate boards, including independent audit committees. The Sarbanes-Oxley Act of 2002 is the latest in the series of regulations to enhance monitoring of corporate activities for ensuring reliability of reported information. Among other provisions, the Sarbanes Oxley Act requires that audit committees should be fully independent so that they are free of managerial influence and are able to effectively monitor managerial decisions and activities.

Though, the effectiveness of independent audit committees in controlling managerial behavior of earnings management has been previously examined in the literature (e.g. Klein 2002, Xie et al. 2003, Bedard et al. 2004), these studies are, however, based on firms irrespective of their financial condition, which may or may not provide incentive to management to manipulate the reported earnings. In this study, we argue that management will have a strong motivation to manipulate reported earnings
when a firm is in financial distress either to minimize the impact of negative signal emanating from financial distress or to convert it to a positive signal. It is, therefore, important to evaluate the effectiveness of independent audit committees in controlling earnings management when firms are in financial distress. We expect independent audit committees to be especially concerned about earnings manipulation in a financial distress situation because of the following two reasons: First, financial distress will make audit committee more cognizant of a strong managerial motivation to camouflage the firm’s performance either to avoid negative signals or to manipulate the bonus component of their compensation. Second, because distress situation is likely to create a higher likelihood of litigation risk, independent audit committees would realize the need for a stricter monitoring of earnings management to provide more reliable information for risk evaluation.

We evaluate the monitoring effectiveness of independent audit committees in financial distressed firms by conducting a comparative analysis on the association between discretionary accruals and independent audit committees for financially distressed and non-distressed firms. We use absolute value of discretionary accruals to capture both upward and downward adjustment of reported earnings. The following hypothesis is developed to test this expectation:

H1: The negative association between independent audit committees and absolute current discretionary accruals is stronger for financially distressed firms compared to financially non-distressed firms.
(b) Monitoring Effectiveness of Fully Independent versus Partial Independent Audit Committees.

The Sarbanes Oxley Act mandates that all audit committee members should be independent in order to ensure independence of the audit committees. As discussed earlier, the expectation of higher monitoring by fully independent audit committees can be traced back to the recommendation of the Blue Ribbon Committee in 1999 and Treadway Commission in 1987. Earlier recommendations, however, provided discretion to the Board to appoint executive directors on audit committee, where necessary. The executive director on an audit committee can provide the committee with details on the information process of the firm, which provides a better insight to the committee for evaluating reliability and integrity of information generated by management.

The Sarbanes Oxley Act, however, mandates that all members of audit committee should be independent. This requirement thus raises the question whether a fully independent audit committee will provide higher monitoring effectiveness than a partially independent audit committee. The existing empirical evidence on this question is inconclusive² (DeFond and Francies 2005). The findings of a study by Ramano (2005) provide evidence that a higher proportion of independent audit committee members improve governance. Klein (2002) documents that there is a significant negative relation between abnormal accruals and audit committees having at least a majority of outside directors, but she does not find a significant relation between abnormal accruals and audit committees with 100% independent directors. According to DeFond and Francis (2005), non-independent directors, such as firms’ bankers, might bring important firm-specific knowledge or expertise to the committee, which can help the Committee in providing
effective monitoring. Thus, under certain circumstances, costs associated with having a non-independent director on audit committees could be outweighed by the benefits from a broader firm-specific expertise and/or greater incentives of monitoring.

In this study, we empirically test the effectiveness of partially independent audit committees in the context of monitoring discretionary accruals, especially in financially-distressed firms. Because inside information provided by an executive director can help the Committee to have a better understanding of accounting numbers and certain affiliated directors, such as firms’ bankers, representatives of firms’ investing parties, can have even stronger incentives of monitoring, we do not expect any significant difference in the monitoring effectiveness of fully and partially independent audit committees.

H2: There is no significant difference in the association between earnings management and fully independent audit committee compared to the association between earnings management and partially independent audit committee for financially distressed and non-distressed firms.

2. Research Methodology

(a) Calculation of Current Discretionary Accruals

Earlier studies have used total discretionary accruals, based on Jones’ Model or Modified Jones’ Model as a proxy of earnings management (e.g. Jones 1991; DeFond and Jiambalvo 1994). Lately, it has been emphasized that current discretionary accruals are easier to manipulate than non-current accruals. Therefore, the use of current discretionary accruals is considered more appropriate to evaluate earnings management
Additionally, it has been pointed out that discretionary accruals are affected by the firm’s performance. In order to isolate the performance effect from earnings management, it has been suggested that the firm’s performance be taken into account in calculating discretionary accruals. Two different techniques have been suggested in this regard (e.g. Kothari et al. 2005; Kasznik 1999; Ashbaugh et al. 2003; Butler et al. 2004). First, a performance measure, i.e. ROA, can be included in the regression analysis for estimating normal accruals. Second, a portfolio technique with performance matching on the basis of industry and return on assets has been suggested.

In this study, we use the portfolio technique, because it is deemed to provide a better estimate of discretionary accruals (e.g. Kothari et al., 2005). Similar to Ashbaugh, et al. (2003), we term these discretionary accruals as Performance-Adjusted Current Discretionary accruals (PACDA). In order to test the robustness of our findings, we also use the other technique of including ROA in the regression analysis to estimate the parameters for calculating normal accruals, which are termed as REDCA.

In order to calculate PACDA, we partition the entire population of Compustat firms, excluding financial sector firms by two-digit SIC code (e.g. Ashbaugh, et al. 2003). Industries with fewer than 15 firms are deleted. We estimate the parameters for normal accruals for each two-digit SIC firms using the following equation:

\[ CA = \alpha_0 + \alpha_1 (1/lag\ asset) + \alpha_2 (\Delta Re v) \] (1)
Where:

\[ CA = \text{Current accruals, reflected by net income before extraordinary items} \]

(Compustat date item # 123) plus depreciation and amortization (Compustat data item # 125) minus operating cash flows (Compustat data item # 308) scaled by the beginning of year total assets.

\[ \text{Lag}_1\text{asset} = \text{total assets at the beginning of the fiscal year} \ t. \]

\[ \Delta \text{Rev} = \text{net sales (Compustat data item #12) in year} \ t \ \text{less net sales in year} \ t-1 \]

scaled by the beginning of the year total assets.

All variables are winsorized at 1 percentile and 99 percentile. The parameters estimated from equation (1) are used to calculate the expected current accruals (ECA):

\[ ECA = \hat{\alpha}_0 + \hat{\alpha}_1 (1/\text{Lag}_1\text{asset}) + \hat{\alpha}_2 (\Delta \text{Rev} - \Delta \text{AR}) \]  

(2)

Where:

\[ \Delta \text{AR} = \text{accountings receivable (Compustat item #2) in year} \ t \ \text{less accounts receivable in year} \ t-1, \ \text{scaled by the beginning of year total assets}. \]

The current discretionary accruals (DCA) are calculated as follows:

\[ \text{DCA} = CA - ECA \]  

(3)

In order to obtain PADCA, we partition firms within each two-digit SIC code into deciles based on their last year’s return on assets (ROA), and obtain the median value of DCA for each ROA portfolio. The PACDA is then determined as follows:

\[ \text{PADCA} = \text{DCA} - \text{median DCA of the matching portfolio} \]  

(4)

(b) **Financial Distress**
Different stages of financial stress can be identified depending on the severity of financial distress (e.g. Lau 1987). Consistent with prior literature (e.g. Jaggi and Lee 2002), this study considers a firm as financially distressed if its operating cash flows have been negative for two consecutive years and/or it incurred losses for two consecutive years. In order to test the robustness of our results, we also use Altman’s Z-score (Altman 1968) as the alternative proxy for financial distress.

(c) Audit Committee Independence

An analysis of our sample firms show that the mean of audit committee size is 3.78 members, with the range between 2 and 8 members, and a median of 3. While majority of the audit committees consist of 3 or 4 members, more than 20% of firms have audit committees with 5 members or more.

Consistent with the Sarbanes-Oxley Act, we define the audit committee as fully independent committee when all of its members are independent³. The audit committee is defined as partially independent if less than 100% members are independent, but 70% or more are independent. Because in 95% of our sample firms at least 50% of members are independent, we decided on 70% cut-off point for the board to be partially independent, which would mean that one out of three or four committee members is not independent, i.e. either executive director or outsider non-independent member.

(d) Regression Models

In order to capture both positive and negative discretionary accruals as earnings management, we use absolute value of discretionary accruals as the dependent variable. Since the dependent variable (absolute value of discretionary accruals) is truncated, consistent with Klein (2002), we use Tobit model (also known as censored normal
regression model, Breen 1996) and use ‘Proc Lifereg’ function from SAS. The parameters are estimated by maximum likelihood using a Newton-Raphson algorithm.

Model 1:

\[
\text{absPADCA} = \alpha + \beta_1\text{AUIND} + \beta_2\text{DIST} + \beta_3\text{LAG1CA} + \beta_4\text{LEVG} + \beta_5\text{INDLIT} + \beta_6\text{LNMVE} + \beta_7\text{PBRATIO} + \beta_8\text{INSOWN} + \epsilon
\]  

We add an interaction between financial distress and independent audit committees in the regression analyses to test our hypothesis H1:

Model 2:

\[
\text{absPADCA} = \alpha + \beta_1\text{AUIND} + \beta_2\text{DIST} + \beta_3\text{LAG1CA} + \beta_4\text{LEVG} + \beta_5\text{INDLIT} + \beta_6\text{LNMVE} + \beta_7\text{PBRATIO} + \beta_8\text{INSOWN} + \beta_9(\text{DIST} \times \text{AUIND}) + \epsilon
\]  

where:

- \(\text{absPADCA}\) A proxy for earnings management. It is the absolute value of the performance-matched discretionary current accruals.
- \(\text{DIST (Loss/Negative)}\) = 1 for firms in financial distress, otherwise 0. A firm is considered as distressed if its operating cash flow has been negative for two consecutive years and/or it incurred losses for two consecutive years.
- \(\text{DIST (Altman Z-score)}\) An alternative proxy for financial distress. It equals 1 for firms in financial distress, otherwise 0. A firm is considered as distressed if its Altman Z-score is smaller than 1.81\(^4\).
- \(\text{AUIND}\) An indicator variable which equals to 1 for firms with 100% independent audit committees, otherwise 0. (Expected sign “-”)
- \(\text{DIST} \times \text{AUIND}\) The interaction term between financial distress indicator and
audit committee independence indicator. It equals to 1 for firms in financial distress and with independent audit committee, otherwise 0. (Expected sign “-”)

\[ LAGICA \] Last year’s current accruals. current accruals equals net income before extraordinary items (Compustat data item 123) plus depreciation and amortization (Compustat data item 125) minus operating cash flows (Compustat data item 308) scaled by beginning of year total assets. (Expected sign “-”)

\[ LEVG \] A firm’s total assets (Compustat data item 6) less stockholders’ equity of common shareholders (Compustat data item 60) divided by total assets. (Expected sign “+”)

\[ INDLIT \] = 1 for firms in a high litigation industry, and otherwise 0. High litigation industries are industries with SIC codes of 2833–2836 (Pharmaceutical), 3570–3577 (Computer), 3600–3674 (Electrical and Telecommunication), 5200–5961 (Retailer and Wholesaler), and 7370–7374 (Programming and Software), 0 otherwise. (Expected sign “+”)

\[ LNMVE \] Natural logarithm of a firm’s market value of equity. A firm’s market value of equity is calculated as its price per share at fiscal year end (Compustat data item 199) times the number of shares outstanding (Compustat data item 25). (Expected sign “-”)

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INSOWN = 1 for firms with percentage of institutional ownership higher than the sample average, otherwise 0. Institutional ownership is calculated as the percent of a company’s aggregate number of shares held by institutions to common shares outstanding. (Expected sign “-”)

PBRATIO Price to book ratio. Market value at the fiscal year-end divided by book value of common equity. (Expected sign “+”)

We construct a dummy variable (AUIND1) indicating partial independence of audit committee, which equals 1 if the percentage of independent members on an auditor committee is larger than 70% but smaller than 100%. This indicator of partial independence is added to Model 1 (equation 5) to form Model 3:

Model 3:

\[
absPADCA = \alpha + \beta_1 AUIND + \beta_2 AUIND1 + \beta_3 DIST + \beta_4 LAG1CA + \beta_5 LEVG + \beta_6 INDLIT + \beta_7 LNMVE + \beta_8 PBRATIO + \beta_9 INSOWN + \varepsilon
\] (7)

AUIND and AUINDI respectively reflect full and partial independence of audit committees. The simultaneous inclusion of AUIND and AUINDI in Model 3 runs the “horse race” between full independence and partial independence of audit committees, which makes our results more conclusive (DeFond and Francies 2005).

We next develop Model 4 by adding the interaction term between AUIND and \( DIST \), and the interaction term between AUINDI and \( DIST \):
Model 4:

\[
\text{absPADCA} = \alpha + \beta_1 \text{AUIND} + \beta_2 \text{AUIND1} + \beta_3 \text{DIST} + \beta_4 \text{LAG1CA} + \beta_5 \text{LEVG} \\
+ \beta_6 \text{INDLIT} + \beta_7 \text{LNMVE} + \beta_8 \text{PBRATIO} + \beta_9 \text{INSOWN} \\
+ \beta_0 (\text{DIST} \times \text{AUIND}) + \beta_1 (\text{DIST} \times \text{AUIND1}) + \varepsilon
\] (8)

3. Sample Selection and Data Collection

We start the sample selection process by identifying the firms for which data on audit committees are available on the 2002 version of the Corporate Library data base, and we identify a sample of 1740 firms. As a second step, we delete the firms belonging to the financial sector with two digit SIC 60-69 (n=292), and the firms with missing financial and audit committee data (n=272). This process resulted in a sample of 1172 firms. In the third step, we classify the sample into financially distressed and non-distressed firms. The firms are identified as financially distressed firms if they have experienced losses for the years 2000 and 2001, and/or negative operating cash flows for these two years. As a result of this process, we identify 228 financially distressed firms and 944 as non-distressed firms. Under the alternative proxy of financial distress, i.e. Altman Z-score, 322 firms are classified as financially distressed and 850 firms are classified as financially non-distressed. The number of sample firms at different stages of the selection process is given in Table 1 (Panel A).

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Table 1
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The number of fully and partially independent audit committees for the total sample as well as for financially distressed and financially healthy firms is provided in Panel B of Table 1. The results show that 74.6% (n=874) of the sample firms have 100%
independent audit committees; 9.5% (n=111) of them have audit committees with proportions of independent members between 70% and 100%; whereas 15.9% (n=187) have audit committees with proportions of independent members lower than 70%. The percentage of financially distressed firms with fully, partially and non independent audit committees is 77.2%, 5.3%, and 17.5% respectively, whereas it is 73.9%, 10.5%, and 15.6% respectively for financially non-distressed firms. The distributions of financially distressed and non-distressed firms with fully, partially and non independent audit committees are similar when Z-score distress criterion is used.

V. DISCUSSION OF RESULTS
1. Descriptive Statistics.

Descriptive statistics on the total sample as well as on sub-samples of financially distressed firms and non-distressed firms are provided in Table 2. All continuous variables are winsorized at 1 percentile and 99 percentile.

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Table 2
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Panel A shows that the average (median) discretionary current accruals for the full sample are -2.4% (-1.6%), and 33.6% of firms have positive discretionary current accruals (POSITIVE = 1 if PADCA > 0). The sample firms’ average market value is 4.588 billion; the mean leverage is 53.1%; the mean price to book ratio is 2.309. The size of audit committees varies from 2 to 8, with an average size of 3.782, and a median size of 3 members. The annual meeting frequency varies from 1 to 16 times, with an average
meeting frequency of 6.594 and a median frequency of 6. Descriptive statistics on
discrete variables suggest that 19.5% of sample firms are financially distressed (27.5%
with Altman Z-score distress criterion); 31.8% are in the high litigation risk industries
(i.e., Pharmaceutical, Computer, Electrical and Telecommunication, Retailer and
Wholesaler, Programming and Software). Finally, 43.3% of the sample firms hold a
percentage of institutional ownership higher than the sample average of 10.12%.

Panel B contains t-test results on the differences between the means of continuous
variables, and z-test results on the differences in the proportions of discrete variables on
financially distressed firms and financially non-distressed firms. As expected, financially
distressed firms compared to financially non-distressed firms have a significantly higher
magnitude of discretionary accruals, higher leverage, smaller market value of equity and
lower growth measured in price to book ratio. The audit committee size in the distressed
firms is significantly smaller than that in financially non-distressed firms. Untabulated
results show that partial correlation between audit committee size and financial distress is
no longer significant after controlling for firm size (market value). Therefore the smaller
audit committee size in distressed firms is primarily driven by their smaller firm size. On
average, audit committees meet significantly more frequently in financially distressed
firms than financially healthy firms. The test results on the proportions of discrete
variables suggest that there is no statistically significant difference between financially
distressed sample and financially non-distressed sample firms in terms of percentage of
firms with 100% independent audit committees, and the percentage of firms using
positive discretionary accruals. However, compared to the financially non-distressed
firms, financially distressed firms are more likely to fall into high-litigation-risk
industries and are less likely to have a higher-than-average percentage of institutional ownership. Finally, compared to financially non-distressed firms, fewer financially distressed firms have audit committees with the proportion of independent members between 70% and 99%. However, this difference is not observed when the firms are classified based on the Altman Z-score criterion (Untabulated).

2. **Univariate Test Results**

We conduct t-tests on the means of absolute values of performance-matched discretionary current accruals (PADCA) between financially distressed and non-distressed firm. We also conduct nonparametric Wilcoxon rank-sum test to examine whether distribution of PACDA differs between the two groups. Table 3 contains the results of univariate analyses.

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</thead>
</table>

Consistent with the findings of prior studies on financially distressed firms (e.g. Jaggi and Lee 2002) we find that, on average, financially distressed have significantly higher current discretionary accruals (both positive and negative current discretionary accruals) than financially non-distressed firms (Panel A, Table 3). The Wilcoxon rank-sum test results are similar to the t-test results.

The comparative results of distressed firms with 100% and less than 100% independent audit committee members (Panel B of Table 3) show that discretionary accruals are significantly lower for distressed firms with 100% independent audit committees compared to the firms with less than 100% independent audit committees.
The results for financially non-distressed firms also show that discretionary accruals are lower for firms with 100% independent audit committee members compared to the firms with less than 100% independent audit committee members, but the difference is statistically insignificant. These results thus suggest that monitoring of earnings management is more effective when 100% audit committees are independent for financially distressed firms, where managers have a strong motivation to manipulate the reported earnings. These results are consistent with our hypothesis H1.

Panel C of Table 3 compares the magnitude of discretionary accruals between the firms with high or low frequency of audit committee meetings, where a firm is classified as a high meeting frequency firm when its audit committee meets more than 6 times (sample median) a year, otherwise it is classified as a low meeting frequency firm. We do not observe significant differences in discretionary accruals between high and low meeting frequency firms for the total sample firms. The results on the distressed sample also do not show a significant difference in discretionary current accruals between high and low meeting frequency firms. We, however, find significantly larger discretionary accruals in financially non-distressed firms when it is a high meeting frequency firm.

3. Regression Results
(a) Earnings Management, Audit Committee Independence, and Financial Distress

We perform regression tests (Models 1 and 2) on the total sample of 1,172 firms, by including the control variables that may have an impact on the use of discretionary accruals. The regressions results are presented in Table 4.
The regression results of Model 1 based upon equation 5 (Panel A) show that the dummy variable for financial distress (DIST) is significantly positive, indicating that financially distressed firms are associated with higher discretionary accruals. The dummy variable for fully independent audit committees (AUDIND) is significantly negative, indicating that these committees are more effective in monitoring earnings management than non-independent audit committees. The regression results of Model 2 based upon equation 6 show that the coefficient for the interaction term DIST and AUDIND is significantly negative, as expected. These results thus show that the negative association between independent audit committees and discretionary accruals is especially strong when the firms are in financial distress. These findings support our hypothesis H1.

Panel B of Table 4 presents results on financial distressed firms based on the Altman Z-score distress criterion. These results are similar to those reported in Panel A of the table.

The results on control variables, consistent with our expectations and prior research findings, show that last year’s current accruals (LAGICA) has a significant negative coefficient, indicating reversal of accruals. As expected, the firms in high litigation risk industries (INDLIT) have higher magnitude of discretionary accruals. The firms with larger size, measured in log of market value of equity (LNMVE), have higher absolute values of discretionary accruals. Firms with higher growth, measured by the
price to book ratio \( (PBRATIO) \), have higher absolute values of discretionary accruals. Institutional ownership variable \( (INSOWN) \), as expected, has a negative sign, but not significant. Finally, consistent with Butler et al. (2004) and Kothari et al. (2006), there is a significant negative association between \( LEVG \) and absolute values of discretionary accruals.

(b) \textbf{Earnings Management, Fully and Partially Independent Audit Committee}

And financial distress

To test our hypothesis H2, we perform regression tests on the total sample of 1,172 firms using Models 3 and 4, and the results are contained in Table 5.

\begin{table}[h]
\centering
\begin{tabular}{|c|c|}
\hline
\textbf{Table 5} & \\
\hline
\end{tabular}
\end{table}

The Model 3 results based on equation 7 show that the coefficients for \( AUIND \) as well as for \( AUIND1 \) are negative and statistically significant. The regression results of Model 4 based on equation 8 show that the coefficient for both interaction terms, \( (DIST \times AUIND) \) and \( (DIST \times AUIND1) \), are negative and statistically significant. The results contained in Panel B based on the Altman Z-score distress criterion are similar to the results contained in Panel A. These results thus support our hypothesis H2 that there is no difference in the monitoring effectiveness of fully and partially independent committees. These results suggest that relaxation of the requirement of 100% independence of audit committee will not jeopardize its effectiveness in monitoring earnings management.
4. **Analysis on the Frequency of Audit Committee Meetings**

Another related interesting question is whether a higher frequency of audit committee meetings is associated with higher monitoring effectiveness of earnings management. Based on a small sample of 110 firms (282 firm-year observations) from years 1992-1995, Xie et al. (2002) document a negative association between the frequency of audit committee meetings and level of discretionary accruals, suggesting that a higher frequency of audit committee meetings results in more effective monitoring. Bedard et al. (2004), however, based a sample of 300 firms from year 1996, find no significant association between the audit committee meeting frequency and earnings management. In this study, we examine whether there is an association between the frequency of audit committee meetings and earnings management, especially for financially distressed firms. In the absence of any theory with regard to the association between meeting frequency and earnings management and given inconclusive empirical evidence on this association, we do not expect any significant association between the frequency of audit committee meetings and earnings management, especially for financially distressed firms. We develop the following models to test the impact on the association between earnings management and frequency of audit committee meetings, especially for financially distressed firms.

**Model 5:**

\[
\begin{align*}
\text{absPADCA} &= \alpha + \beta_1 \text{AUINTD} + \beta_2 \text{AUINTD1} + \beta_3 \text{DIST} + \beta_4 \text{LAG1CA} + \beta_5 \text{LEVG} \\
&\quad + \beta_6 \text{INDLIT} + \beta_7 \text{LNMVE} + \beta_8 \text{PBRATIO} + \beta_9 \text{INSOWN} \\
&\quad + \beta_{10} (\text{DIST} \times \text{AUINTD}) + \beta_{11} (\text{DIST} \times \text{AUINTD1}) + \beta_{12} \text{AUMEET} \\
&\quad + \beta_{13} (\text{DIST} \times \text{AUMEET}) + \varepsilon
\end{align*}
\]  

(9)
Further, we retest the association between earnings management and frequency of audit committee meetings by including the variable of audit committee size in the analyses.

Model 6:

\[
\text{absPADCA} = \alpha + \beta_1 \text{AUIND} + \beta_2 \text{AUIND} \times \text{DIST} + \beta_3 \text{LAG1CA} + \beta_4 \text{LEVG} \\
+ \beta_5 \text{INDLIT} + \beta_6 \text{LNMVE} + \beta_7 \text{PRATIO} + \beta_8 \text{INSOWN} \\
+ \beta_{10} (\text{DIST} \times \text{AUIND}) + \beta_{11} \text{DIST} \times \text{AUIND} + \beta_{12} \text{AUMEET} \\
+ \beta_{13} (\text{DIST} \times \text{AUMEET}) + \beta_{14} \text{AUSIZE} + \epsilon
\]  

(10)

The regression analysis is performed on the total sample of 1,172 firms, and the results are presented in Table 6.

Table 6

The results of model 5 based on equation 9 show that the variable on the frequency of audit committee meetings (\text{AUMEET}) has a significant positive coefficient, whereas the coefficient for the interaction term between \text{DIST} and \text{AUMEET} is negative, but insignificant. The sum of coefficients of \text{AUMEET} and (\text{DIST} \times \text{AUMEET}) is also insignificant. Similar results are provided by the analyses when the Altman Z-score criterion is used for identifying financially distressed firms. These results show that there is no significant association between the frequency of audit committee meetings and earnings management for financially-distressed firms. These multivariate analysis results are consistent with the univariate analysis results, suggesting that the positive association between audit committee meeting frequency and discretionary accruals is primarily driven by financially non-distressed firms.
5. Additional Tests

We would also like to point out that the results on Model 5 and 6 show that the coefficients of interaction terms between $DIST$ and $AUIND$ and between $DIST$ and $AUIND1$ are significantly negative even after the variables of audit committee size and meeting frequency are included in the analyses.

We perform two additional analyses to evaluate earnings management in financially distressed firms. First, we use the alternative proxy of current discretionary accruals for earnings management. We use REDCA as used by Ashbaugh et al. (2003) and suggested by Kothari et al., (2004). This measure includes lagged ROA in the accrual regression to control for the firm performance. Procedures for calculation of REDCA are discussed in Appendix A of this paper. The results of this test are similar to those reported for PADCA. Therefore, the use of alternative proxy for discretionary accruals did not have significant influence on our results.

Second, we examine whether independent audit committees would be equally concerned with upward adjustment of reported earnings using positive discretionary and downward adjustment of reporting earnings using negative discretionary accruals. Burgstahler and Dichev (1997) document that more firms fall in the range of small positive earnings, which may suggest that these firms use positive discretionary accruals to convert losses into small positive earnings. Additionally, it has been documented that managers may also use small positive discretionary accruals to meet market expectations, proxied by analyst forecasts or previous year’s reported earnings (e.g. Burgstahler and Dichev, 1997). On the other hand, negative discretionary accruals may be used to create “cookie jar” reserves (e.g. Jordan and Clark 2004; Reidl 2004), to achieve earnings
smoothing (e.g. Kirschenheiter and Melumad 2002), or to obtain better terms in renegotiations on contracts (DeAngelo et al. 1994). To examine whether independent audit committees’ monitoring of earnings management in financially distressed firms differs for the use of positive discretionary accruals and negative discretionary accruals, we add a dummy variable to indicate positive discretionary current accruals (\textit{POSITIVE}), all the two-way interactions among positive discretionary accruals, financial distress, and independent audit committees, and three-way interactions among the three variables. Regardless of distress criterion, insignificant coefficients are observed on the three-way interactions among positive discretionary accruals, financial distress, and independent audit committees (results untabulated). These results suggest that independent audit committees are concerned with both positive accruals and negative accruals. This is consistent with Bedard et al. (2004).

VI. CONCLUSION

This study has investigated the association between audit committee independence and earnings management in financially distressed firms, whose managers have a strong incentive to manipulate the reported earnings. Additionally, it investigated whether fully independent audit committees, where 100\% members of audit committees are independent, as required under Sarbanes-Oxley Act, are more effective in monitoring earnings management than partially independent audit committees, where between 70\% and 100\% members of audit committee members are independent. The study is based on a sample of 1,172 firms including 228 financially distressed firms and 944 non-distressed firms contained in Corporate Library Database for year 2002. The firms are considered as
financially distressed if they have negative operating cash flows, and/or losses for two consecutive years. Financial distress is also determined on the basis of Altman’s Z-score. Earnings management is proxied by the performance-adjusted current discretionary accruals model as suggested by Kothari et al. (2005) and used by Ashbaugh et al. (2003).

The findings show that the monitoring effectiveness of earnings management by independent audit committees is stronger for financially distressed firms compared to financially non-distressed firms. The findings show that there is no significant difference in the monitoring effective of fully or partially independent audit committees, especially when the firms are financially distressed. This suggests that some relaxation on the Act’s requirement of full independence does not compromise the committee’s effectiveness in monitoring earnings management. The results also show that independent audit committees are equally concerned with the use of positive and negative discretionary accruals to adjust reported income upward and downward respectively. With regard to the frequency of audit committee meetings, the results show that the association between earnings management and frequency of audit committee meetings is insignificant when the firms are financially distressed. Our findings are robust to alternative measures for financial distress and current discretionary accruals.

The study has some limitations. First, similar to other studies, it employs discretionary accruals as a proxy for earnings management. Interpretation of our findings is based on the assumption that discretionary accruals capture managerial behavior of earnings management. Second, the validity of our findings depends on the accuracy of classification of firms into financially distressed and non-distressed firms. Though, we have used different proxies for this classification, caution is still warranted. The study
has focused on managerial motivation for earnings management when firms are financially distressed. There may, however, be other motivations for earnings management. Therefore, additional research is needed to evaluate the monitoring effectiveness of independent committees when there is some other strong motivation for earnings management, e.g. meeting analyst forecasts.
REFERENCE


Appendix A

Procedures for Calculation of REDCA

The calculation of REDCA is started with estimating the following cross-sectional current accrual regression by each two-digit SIC code:

\[
CA = \alpha_0 + \alpha_1(1/\text{lag1asset}) + \alpha_2(\Delta Rev) + \alpha_3\text{Lag1ROA}
\]  

(11)

Where:

\[
\begin{align*}
CA &= \text{ current accruals, reflected by net income before extraordinary items} \\
&\quad (\text{Compustat date item # 123) plus depreciation and amortization} \\
&\quad (\text{Compustat data item # 125) minus operating cash flows (Compustat data item # 308) scaled by the beginning of year total assets.}
\end{align*}
\]

\[
\text{lag1asset} = \text{ total assets at the beginning of the fiscal year.}
\]

\[
\Delta \text{Re} = \text{ net sales (Compustat data item #12) in year t less net sales in year t-1 scaled by the beginning of the year total assets.}
\]

\[
\text{lag1ROA} = \text{ last year’s return on assets.}
\]

Industries with fewer than 15 firms are deleted. The parameters estimated from equation (11) are used to calculate the expected current accruals (ECA):

\[
ECA = \hat{\alpha}_0 + \hat{\alpha}_1(1/\text{lag1asset}) + \hat{\alpha}_2(\Delta Re) + \hat{\alpha}_3\text{lag1ROA}
\]  

(12)

Where:

\[
\Delta \text{AR} = \text{ accountings receivable (Compustat item #2) in year t less accounts receivable in year t-1, scaled by the beginning of year total assets.}
\]

Discretionary current accruals are calculated as:

\[
\text{REDCA} = \text{CA} - \text{ECA}
\]
The audit committee is considered fully independent when 100% of its members are independent as required under Sarbanes-Oxley act. The audit committee is considered partially independent when the proportion of independent members is between 70% and 99%. The audit committee is considered non-independent when the proportion of independent members is lower than 70%.

Table 1
Sample Selection and Distribution by Independent Audit Committees

Panel A: Sample Selection

<table>
<thead>
<tr>
<th>No. of firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial sample in Corporate Library database for year 2002</td>
</tr>
<tr>
<td>Minus firms in financial sector (two-digit SIC 60-69)</td>
</tr>
<tr>
<td>Minus firms that have missing information for calculating PADCA and other Variables</td>
</tr>
<tr>
<td>Minus firms that have missing information on audit committee</td>
</tr>
<tr>
<td>Final sample</td>
</tr>
</tbody>
</table>

Under distress criterion of loss and negative operating cash flow

| Financially distressed firms | 228 |
| Financially non-distressed firms | 944 |
| Total final sample | 1,172 |

Under distress criterion of Altman Z-score

| Financially distressed firms | 322 |
| Financially non-distressed firms | 850 |
| Total final sample | 1,172 |

Panel B: Sample Distribution by Audit Committee Independence

<table>
<thead>
<tr>
<th>Distress Criterion</th>
<th>Loss/negative operating cash flow</th>
<th>Altman Z-score</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Financially distressed firms</td>
<td>Financially non-distressed firms</td>
</tr>
<tr>
<td></td>
<td>Financially distressed firms</td>
<td>Financially non-distressed firms</td>
</tr>
<tr>
<td>Fully independent audit committees</td>
<td>176 (77.2%)</td>
<td>698 (73.9%)</td>
</tr>
<tr>
<td>Partially independent audit committees</td>
<td>12 (5.3%)</td>
<td>99 (10.5%)</td>
</tr>
<tr>
<td>Non-independent audit committees</td>
<td>40 (17.5%)</td>
<td>147 (15.6%)</td>
</tr>
<tr>
<td>Total</td>
<td>228 (100%)</td>
<td>944 (100%)</td>
</tr>
</tbody>
</table>

1 The audit committee is considered fully independent when 100% of its members are independent as required under Sarbanes-Oxley act.
2 The audit committee is considered partially independent when the proportion of independent members is between 70% and 99%.
3 The audit committee is considered non-independent when the proportion of independent members is lower than 70%.
Table 2
Descriptive Statistics

Panel A: Full Sample (n=1,172)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Median</th>
<th>Std Dev</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Continuous Variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PADCA</td>
<td>-0.024</td>
<td>-0.016</td>
<td>0.076</td>
<td>-0.333</td>
<td>0.228</td>
</tr>
<tr>
<td>absPADCA</td>
<td>0.052</td>
<td>0.031</td>
<td>0.064</td>
<td>0.000</td>
<td>0.345</td>
</tr>
<tr>
<td>LAG1CA</td>
<td>-0.032</td>
<td>-0.018</td>
<td>0.083</td>
<td>-0.406</td>
<td>0.187</td>
</tr>
<tr>
<td>LEVG</td>
<td>0.531</td>
<td>0.537</td>
<td>0.232</td>
<td>0.078</td>
<td>1.193</td>
</tr>
<tr>
<td>MVE</td>
<td>4587.540</td>
<td>1126.28</td>
<td>12593.89</td>
<td>27.799</td>
<td>96278.47</td>
</tr>
<tr>
<td>LNMVE</td>
<td>7.081</td>
<td>7.027</td>
<td>1.560</td>
<td>3.325</td>
<td>11.475</td>
</tr>
<tr>
<td>PBRATIO</td>
<td>2.309</td>
<td>1.787</td>
<td>2.653</td>
<td>-8.438</td>
<td>15.630</td>
</tr>
<tr>
<td>AUSIZE</td>
<td>3.782</td>
<td>3.000</td>
<td>1.003</td>
<td>2.000</td>
<td>8.000</td>
</tr>
<tr>
<td>AUMEET</td>
<td>6.594</td>
<td>6.000</td>
<td>2.654</td>
<td>1.000</td>
<td>16.000</td>
</tr>
<tr>
<td>Discrete variables</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>POSITIVE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUIND</td>
<td>33.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AUINDI</td>
<td>74.6%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIST (Loss/ negative operating cash flow)</td>
<td>19.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DIST (Altman Z-score)</td>
<td>27.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INDLIT</td>
<td>31.8%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>INSOWN</td>
<td>43.4%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Panel B: Subsamples of Financially Distressed and Financially Non-Distressed Firms

<table>
<thead>
<tr>
<th>Variable</th>
<th>Financially -distressed Sample (n=228)</th>
<th>Financially Non-distressed Sample (n=944)</th>
<th>t-test on mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Median</td>
<td>Mean</td>
</tr>
<tr>
<td>Continuous Variables</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PADCA</td>
<td>0.046</td>
<td>0.020</td>
<td>-0.021</td>
</tr>
<tr>
<td>absPADCA</td>
<td>0.086</td>
<td>0.054</td>
<td>0.043</td>
</tr>
<tr>
<td>LAG1CA</td>
<td>-0.082</td>
<td>-0.048</td>
<td>-0.020</td>
</tr>
<tr>
<td>LEVG</td>
<td>0.585</td>
<td>0.571</td>
<td>0.518</td>
</tr>
<tr>
<td>MVE</td>
<td>1371.200</td>
<td>359.059</td>
<td>5364.370</td>
</tr>
<tr>
<td>LNMVE</td>
<td>5.951</td>
<td>5.883</td>
<td>7.354</td>
</tr>
<tr>
<td>PBRATIO</td>
<td>1.275</td>
<td>1.079</td>
<td>2.559</td>
</tr>
<tr>
<td>AUSIZE</td>
<td>3.478</td>
<td>3.000</td>
<td>3.856</td>
</tr>
<tr>
<td>AUMEET</td>
<td>7.180</td>
<td>6.000</td>
<td>6.452</td>
</tr>
</tbody>
</table>
Table 2 Cont.

<table>
<thead>
<tr>
<th>Discrete variables (coded as one)</th>
<th>AUIND</th>
<th>AUIND1</th>
<th>INDLIT</th>
<th>INSOWN</th>
<th>POSITIVE</th>
</tr>
</thead>
<tbody>
<tr>
<td>AUIND</td>
<td>77.2%</td>
<td>73.9%</td>
<td>1.01</td>
<td>(0.31)</td>
<td></td>
</tr>
<tr>
<td>AUIND1</td>
<td>5.3%</td>
<td>10.5%</td>
<td>-2.42</td>
<td>(0.02)</td>
<td></td>
</tr>
<tr>
<td>INDLIT</td>
<td>45.6%</td>
<td>28.5%</td>
<td>4.98</td>
<td>(0.00)</td>
<td></td>
</tr>
<tr>
<td>INSOWN</td>
<td>31.6%</td>
<td>46.3%</td>
<td>-4.02</td>
<td>(0.00)</td>
<td></td>
</tr>
<tr>
<td>POSITIVE</td>
<td>36.0%</td>
<td>33.1%</td>
<td>0.84</td>
<td>(0.40)</td>
<td></td>
</tr>
</tbody>
</table>

P-values are two-tailed.

Results in Panel B are based upon the distress criterion of two-year consecutive loss and/or negative cash flows. Qualitatively similar results (untabulated) are observed under the distress criterion of Altman Z-score.

**PADCA**
Signed discretionary current accruals estimated by controlling for performance under the portfolio match technique.

**absPADCA**
Absolute value of PADCA.

**LAGIC**
Last year’s current accruals. Current accruals equal net income before extraordinary items (Compustat data item 123) plus depreciation and amortization (Compustat data item 125) minus operating cash flows (Compustat data item 308) scaled by beginning of year total assets.

**LEVG**
A firm’s total assets (Compustat data item 6) less stockholders’ equity of common shareholders (Compustat data item 60) divided by total assets.

**MVE**
A firm’s market value of equity in millions. It is calculated as its price per share at fiscal year end (Compustat data item 199) times the number of shares outstanding (Compustat data item 25).

**LNME**
Natural logarithm of a firm’s market value of equity.

**POSITIVE**
= 1 for firms with positive PADCA, 0 otherwise.

**PBRATIO**

**AUIND**
= 1 for firms with fully independent audit committees, otherwise 0. An audit committee is considered to be fully independent when 100% of committee members are independent.

**AUIND1**
= 1 for firms with partially independent audit committees, otherwise 0. An audit committee is considered to be partially independent if the proportion of independent members is between 70% and 99%.

**AUSIZE**
The number of members on an audit committee.

**AUMEET**
The number of meetings held by an audit committee in a given year.

**DIST (Loss & negative operating cash flow)**
= 1 for financially distressed firms, otherwise 0. A firm is considered as financially distressed if it incurs losses for two consecutive years and/or its operating cash flow is negative for two consecutive years.

**DIST (Altman Z-score)**
= 1 for financially distressed firms, otherwise 0. A firm is considered as financially distressed if its Altman Z-score is lower than 1.81.

**INDLIT**
= 1 for firms in a high litigation industry, and 0 otherwise. High litigation industries are industries with SIC codes of 2833–2836 (Pharmaceutical), 3570–3577 (Computer), 3600–3674 (Electrical and Telecommunication), 5200–5961 (Retailer and Wholesaler), and 7370–7374 (Programming and Software), 0 otherwise.
Table 3:
Univariate Analyses Results

**Panel A: Financially Distressed Firms vs. Non-distressed Firms**

<table>
<thead>
<tr>
<th></th>
<th>absPADCA-Mean [ absPADCA-Median] [No. of obs.]</th>
<th>T-test on mean differences (p-value)</th>
<th>Wilcoxon rank-sum test on distribution differences (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Firms with positive PADCA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financially distressed firms</td>
<td>0.057 [0.038] [82]</td>
<td>0.038 [0.019] [312]</td>
<td>2.35 (0.02)</td>
</tr>
<tr>
<td>Financially non-distressed firms</td>
<td>0.037 [0.019] [146]</td>
<td>0.019 [0.008] [632]</td>
<td>6.72 (0.00)</td>
</tr>
<tr>
<td><strong>Firms with negative PADCA</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financially distressed firms</td>
<td>0.103 [0.046] [146]</td>
<td>0.046 [0.033] [632]</td>
<td>6.82 (0.00)</td>
</tr>
<tr>
<td>Financially non-distressed firms</td>
<td>0.068 [0.033] [289]</td>
<td>0.033 [0.028] [632]</td>
<td>6.82 (0.00)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financially distressed firms</td>
<td>0.087 [0.043] [228]</td>
<td>0.043 [0.028] [944]</td>
<td>6.82 (0.00)</td>
</tr>
<tr>
<td>Financially non-distressed firms</td>
<td>0.042 [0.026] [246]</td>
<td>0.026 [0.021] [944]</td>
<td>6.82 (0.00)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Panel B: Firms with 100% Independent Audit Committees vs. Firms with Less Than 100% Independent Audit Committees**

<table>
<thead>
<tr>
<th></th>
<th>absPADCA-Mean [ absPADCA-Median] [No. of obs.]</th>
<th>T-test for means difference (p-value)</th>
<th>Wilcoxon rank-sum test for distribution difference (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Firms with 100% independent audit committee</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financially distressed firms</td>
<td>0.080 [0.109] [176]</td>
<td>0.109 [0.071] [52]</td>
<td>-1.89 (0.06)</td>
</tr>
<tr>
<td>Financially non-distressed firms</td>
<td>0.049 [0.048] [698]</td>
<td>0.048 [0.026] [246]</td>
<td>-1.49 (0.14)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Financially distressed firms</td>
<td>0.049 [0.059] [874]</td>
<td>0.059 [0.031] [298]</td>
<td>-1.99 (0.05)</td>
</tr>
<tr>
<td>Financially non-distressed firms</td>
<td>0.043 [0.032] [874]</td>
<td>0.032 [0.015] [298]</td>
<td>-1.99 (0.05)</td>
</tr>
</tbody>
</table>
Panel C: Audit Committees with High vs. Low Meeting Frequency

<table>
<thead>
<tr>
<th></th>
<th>absPADCA-Mean [ absPADCA-Median] [No. of obs.]</th>
<th>T-test for means difference (p-value)</th>
<th>Wilcoxon rank-sum test for distribution difference (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>audit committee with high meeting frequency</td>
<td>audit committee with low meeting frequency</td>
<td>t-stat.</td>
</tr>
<tr>
<td>Distressed firms</td>
<td>0.077 [0.049] [112]</td>
<td>0.096 [0.066] [116]</td>
<td>-1.52 (0.13)</td>
</tr>
<tr>
<td>Non-distressed firms</td>
<td>0.047 [0.030] [409]</td>
<td>0.041 [0.027] [535]</td>
<td>1.80 (0.07)</td>
</tr>
<tr>
<td>Total</td>
<td>0.053 [0.032] [521]</td>
<td>0.050 [0.031] [651]</td>
<td>0.79 (0.43)</td>
</tr>
</tbody>
</table>

P-values are two-tailed.

Results in Table 3 are based upon the distress criterion of two-year consecutive loss and/or negative cash flows. Qualitatively similar results (untabulated) are observed under the distress criterion of Altman Z-score.

A firm is categorized into high frequency group if its audit committee meets more than 6 times, which is the median for the total sample, otherwise into low frequency group.
Table 4
Regression Results on the Differential Effect of Independent Audit Committees in Monitoring Earnings Management in Financially Distressed firms Compared to Non-distressed Firms

Model 1:

\[ \text{absPADCA} = \alpha + \beta_1 \text{AUIND} + \beta_2 \text{DIST} + \beta_3 \text{LAG1CA} + \beta_4 \text{LEVG} + \beta_5 \text{INDLIT} + \beta_6 \text{LNMVE} + \beta_7 \text{PBRATIO} + \beta_8 \text{INSOWN} + \varepsilon \]

Model 2:

\[ \text{absPADCA} = \alpha + \beta_1 \text{AUIND} + \beta_2 \text{DIST} + \beta_3 \text{LAG1CA} + \beta_4 \text{LEVG} + \beta_5 \text{INDLIT} + \beta_6 \text{LNMVE} + \beta_7 \text{PBRATIO} + \beta_8 \text{INSOWN} + \beta_9 (\text{DIST} \times \text{AUIND}) + \varepsilon \]

<table>
<thead>
<tr>
<th>Predicted sign</th>
<th>Panel A</th>
<th>Panel B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Distress criterion: loss and negative OCF</td>
<td>Distress criterion: Altman Z-score</td>
</tr>
<tr>
<td></td>
<td>Model 1</td>
<td>Model 2</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.091</td>
<td>0.089</td>
</tr>
<tr>
<td>AUIND</td>
<td>-0.009</td>
<td>-0.005</td>
</tr>
<tr>
<td>DIST</td>
<td>0.030</td>
<td>0.046</td>
</tr>
<tr>
<td>LAG1CA</td>
<td>-0.089</td>
<td>-0.086</td>
</tr>
<tr>
<td>LEVG</td>
<td>-0.016</td>
<td>-0.016</td>
</tr>
<tr>
<td>INDLIT</td>
<td>0.013</td>
<td>0.014</td>
</tr>
<tr>
<td>LNMVE</td>
<td>-0.006</td>
<td>-0.006</td>
</tr>
<tr>
<td>PBRATIO</td>
<td>0.001</td>
<td>0.001</td>
</tr>
<tr>
<td>INSOWN</td>
<td>-0.002</td>
<td>-0.002</td>
</tr>
<tr>
<td>DIST×AUIND</td>
<td>-0.021</td>
<td>3.77</td>
</tr>
</tbody>
</table>

N=1,172
Generalized $R^2$ 12.41% 12.69% 11.22% 11.74%
The parameters are estimated by maximum likelihood using a Newton-Raphson algorithm.

**absPADCA**

The absolute value of the performance-matched discretionary current accruals.

**AUIND**

= 1 for firms with independent audit committees, 0 otherwise. An audit committee is considered to be independence if 100% of committee members are independent.

**DIST (Loss and/or negative operating cash flow)**

= 1 for firms in financial distress, 0 otherwise. A firm is considered as distressed if its operating cash flow has been negative for two consecutive years and it incurred losses for two consecutive years.

**DIST (Altman Z-score)**

= 1 for firms in financial distress, 0 otherwise. A firm is considered as distressed if its Altman Z-score is smaller than 1.81.

**LAGICA**

Last year’s current accruals. current accruals equals net income before extraordinary items (Compustat data item 123) plus depreciation and amortization (Compustat data item 125) minus operating cash flows (Compustat data item 308) scaled by beginning of year total assets.

**LEVG**

A firm’s total assets (Compustat data item 6) less stockholders’ equity of common shareholders (Compustat data item 60) divided by total assets.

**LNMVE**

Natural logarithm of a firm’s market value of equity. A firm’s market value of equity is calculated as its price per share at fiscal year end (Compustat data item 199) times the number of shares outstanding (Compustat data item 25).

**PBRATIO**


**INDLIT**

= 1 for firms in a high litigation industry, and 0 otherwise. High litigation industries are industries with SIC codes of 2833–2836 (Pharmaceutical), 3570–3577 (Computer), 3600–3674 (Electrical and Telecommunication), 5200–5961 (Retailer and Wholesaler), and 7370–7374 (Programming and Software), 0 otherwise.

**INSOWN**

1 for firms with percentage of institutional ownership higher than the sample average, 0 otherwise. Institutional ownership is calculated as the percent of a company’s aggregate number of shares held by institutions to common shares outstanding.

**DIST×AUIND**

An interaction term between DIST and AUIND.

---

*Generalized R²* is calculated based upon the following formula given by Allison (1995, pp247-249): 

\[ R^2 = 1 - e^{-\frac{LRT}{n}} \]

where \( LRT = -2\log L(0) - [-2\log L(p)] \), 

\( n \) is the sample size, \( \log L(0) \) is the log-likelihood for a null model with no covariates, and \( \log L(p) \) is the log-likelihood for the fitted model with covariates.
Table 5
Regression Analysis on Audit Committee Independence: Full Independence vs. Partial Independence

Model 3:
\[ \text{absPADCA} = \alpha + \beta_1 \text{AUIND} + \beta_2 \text{AUIND1} + \beta_3 \text{DIST} + \beta_4 \text{LAG\text{CA}} + \beta_5 \text{LEVG} + \beta_6 \text{INDLIT} + \beta_7 \text{LNMVE} + \beta_8 \text{PBRATIO} + \beta_9 \text{INSOWN} + \epsilon \]

Model 4:
\[ \text{absPADCA} = \alpha + \beta_1 \text{AUIND} + \beta_2 \text{AUIND1} + \beta_3 \text{DIST} + \beta_4 \text{LAG\text{CA}} + \beta_5 \text{LEVG} + \beta_6 \text{INDLIT} + \beta_7 \text{LNMVE} + \beta_8 \text{PBRATIO} + \beta_9 \text{INSOWN} \\
+ \beta_{10} (\text{DIST} \times \text{AUIND}) + \beta_{11} (\text{DIST} \times \text{AUIND1}) + \epsilon \]

<table>
<thead>
<tr>
<th>Predicted sign</th>
<th>Panel A</th>
<th>Panel B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Co-efficient</td>
<td>Chi-square</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.095</td>
<td>79.14</td>
</tr>
<tr>
<td>\text{AUIND}</td>
<td>-0.015</td>
<td>9.93</td>
</tr>
<tr>
<td>\text{AUIND1}</td>
<td>-0.017</td>
<td>5.63</td>
</tr>
<tr>
<td>\text{DIST}</td>
<td>0.030</td>
<td>33.77</td>
</tr>
<tr>
<td>\text{LAG\text{CA}}</td>
<td>-0.090</td>
<td>16.08</td>
</tr>
<tr>
<td>\text{LEVG}</td>
<td>-0.015</td>
<td>3.13</td>
</tr>
<tr>
<td>\text{INDLIT}</td>
<td>0.013</td>
<td>10.09</td>
</tr>
<tr>
<td>\text{LNMVE}</td>
<td>-0.005</td>
<td>16.44</td>
</tr>
<tr>
<td>\text{PBRATIO}</td>
<td>0.001</td>
<td>2.84</td>
</tr>
<tr>
<td>\text{INSOWN}</td>
<td>-0.002</td>
<td>0.20</td>
</tr>
<tr>
<td>\text{DIST} \times \text{AUIND}</td>
<td>-0.033</td>
<td>7.70</td>
</tr>
<tr>
<td>\text{DIST} \times \text{AUIND1}</td>
<td>-0.060</td>
<td>7.89</td>
</tr>
</tbody>
</table>

\( N=1,172 \)
\( \text{Generalized R}^2 \) 12.83% 13.62 11.67% 13.00%
Table 5 Cont.
The parameters are estimated by maximum likelihood using a Newton-Raphson algorithm.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>absPADCA</td>
<td>The absolute value of the performance-matched discretionary current accruals.</td>
</tr>
<tr>
<td>AUIND</td>
<td>= 1 for firms with independent audit committees, 0 otherwise. An audit committee is considered to be independent if 100% of committee members are independent.</td>
</tr>
<tr>
<td>AUIND1</td>
<td>= 1 for firms with a partially independent audit committee, 0 otherwise. An audit committee is considered to be partially independent if 70% &lt; the percentage of independent audit committee members &lt; 100%.</td>
</tr>
<tr>
<td>DIST (Loss and/or negative operating cash flow)</td>
<td>= 1 for firms in financial distress, 0 otherwise. A firm is considered as distressed if its operating cash flow has been negative for two consecutive years and it incurred losses for two consecutive years.</td>
</tr>
<tr>
<td>DIST (Altman Z-score)</td>
<td>= 1 for firms in financial distress, 0 otherwise. A firm is considered as distressed if its Altman Z-score is smaller than 1.81.</td>
</tr>
<tr>
<td>LAGICA</td>
<td>Last year’s current accruals. Current accruals equals net income before extraordinary items (Compustat data item 123) plus depreciation and amortization (Compustat data item 125) minus operating cash flows (Compustat data item 308) scaled by beginning of year total assets.</td>
</tr>
<tr>
<td>LEVG</td>
<td>A firm’s total assets (Compustat data item 6) less stockholders’ equity of common shareholders (Compustat data item 60) divided by total assets.</td>
</tr>
<tr>
<td>LNMVE</td>
<td>Natural logarithm of a firm’s market value of equity. A firm’s market value of equity is calculated as its price per share at fiscal year end (Compustat data item 199) times the number of shares outstanding (Compustat data item 25).</td>
</tr>
<tr>
<td>INDLIT</td>
<td>= 1 for firms in a high litigation industry, and 0 otherwise. High litigation industries are industries with SIC codes of 2833–2836 (Pharmaceutical), 3570–3577 (Computer), 3600–3674 (Electrical and Telecommunication), 5200–5961 (Retailer and Wholesaler), and 7370–7374 (Programming and Software), 0 otherwise.</td>
</tr>
<tr>
<td>INSOWN</td>
<td>= 1 for firms with percentage of institutional ownership higher than the sample average, 0 otherwise. Institutional ownership is calculated as the percent of a company’s aggregate number of shares held by institutions to common shares outstanding.</td>
</tr>
<tr>
<td>DIST×AUIND</td>
<td>An interaction term between DIST and AUIND.</td>
</tr>
<tr>
<td>DIST×AUIND1</td>
<td>An interaction term between DIST and AUIND1.</td>
</tr>
</tbody>
</table>
Table 6
Regression Results on Audit Committee Meeting Frequency

Model 5:
\[ \text{absPADCA} = \alpha + \beta_1 \text{AUIND} + \beta_2 \text{AUIND1} + \beta_3 \text{DIST} + \beta_4 \text{LAGICA} + \beta_5 \text{LEVG} + \beta_6 \text{INDLIT} + \beta_7 \text{LNME} + \beta_8 \text{PBRATIO} + \beta_9 \text{INSOWN} + \beta_{10} (\text{DIST} \times \text{AUIND}) + \beta_{11} (\text{DIST} \times \text{AUIND1}) + \beta_{12} \text{AUMEET} + \beta_{13} (\text{DIST} \times \text{AUMEET}) + \varepsilon \]

Model 6:
\[ \text{absPADCA} = \alpha + \beta_1 \text{AUIND} + \beta_2 \text{AUIND1} + \beta_3 \text{DIST} + \beta_4 \text{LAGICA} + \beta_5 \text{LEVG} + \beta_6 \text{INDLIT} + \beta_7 \text{LNME} + \beta_8 \text{PBRATIO} + \beta_9 \text{INSOWN} + \beta_{10} (\text{DIST} \times \text{AUIND}) + \beta_{11} (\text{DIST} \times \text{AUIND1}) + \beta_{12} \text{AUMEET} + \beta_{13} (\text{DIST} \times \text{AUMEET}) + \beta_{14} \text{AUSIZE} + \beta_{15} (\text{DIST} \times \text{AUSIZE}) + \varepsilon \]

<table>
<thead>
<tr>
<th>Panel A</th>
<th>Distress criterion: loss and negative OCF</th>
<th>Panel B</th>
<th>Distress criterion: Altman Z-score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Predicted sign</td>
<td>Co-efficient</td>
<td>Chi-square (p-value)</td>
<td>Co-efficient</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.083</td>
<td>54.61 (0.00)</td>
<td>0.088</td>
</tr>
<tr>
<td>AUIND</td>
<td>-0.008</td>
<td>2.21 (0.14)</td>
<td>-0.007</td>
</tr>
<tr>
<td>AUIND1</td>
<td>-0.008</td>
<td>1.04 (0.31)</td>
<td>-0.005</td>
</tr>
<tr>
<td>DIST</td>
<td>+0.074</td>
<td>23.42 (0.00)</td>
<td>0.073</td>
</tr>
<tr>
<td>LAGICA</td>
<td>-0.006</td>
<td>20.04 (0.00)</td>
<td>-0.005</td>
</tr>
<tr>
<td>LEVG</td>
<td>+0.082</td>
<td>13.22 (0.00)</td>
<td>-0.082</td>
</tr>
<tr>
<td>INDLIT</td>
<td>+0.015</td>
<td>3.06 (0.08)</td>
<td>-0.012</td>
</tr>
<tr>
<td>LNME</td>
<td>-0.012</td>
<td>9.10 (0.00)</td>
<td>0.012</td>
</tr>
<tr>
<td>PBRATIO</td>
<td>+0.001</td>
<td>3.83 (0.05)</td>
<td>0.001</td>
</tr>
<tr>
<td>INSOWN</td>
<td>-0.002</td>
<td>0.22 (0.64)</td>
<td>-0.002</td>
</tr>
<tr>
<td>DIST×AUIND</td>
<td>-0.033</td>
<td>7.83 (0.01)</td>
<td>-0.033</td>
</tr>
<tr>
<td>DIST×AUIND1</td>
<td>-0.058</td>
<td>7.42 (0.01)</td>
<td>-0.058</td>
</tr>
<tr>
<td>AUMEET</td>
<td>?0.002</td>
<td>3.86 (0.05)</td>
<td>0.002</td>
</tr>
<tr>
<td>DIST×AUMEET</td>
<td>?-0.002</td>
<td>2.23 (0.14)</td>
<td>-0.002</td>
</tr>
<tr>
<td>AUSIZE</td>
<td>?-0.003</td>
<td>1.63 (0.20)</td>
<td>-0.003</td>
</tr>
</tbody>
</table>

N = 1,172
Generalized $R^2$ 13.93% 14.05% 13.37% 13.54%
Table 6: Cont.
The parameters are estimated by maximum likelihood using a Newton-Raphson algorithm.

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<td>LNMVE</td>
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</tr>
<tr>
<td>DIST × AUIND</td>
<td>An interaction term between DIST and AUIND.</td>
</tr>
<tr>
<td>DIST × AUIND1</td>
<td>An interaction term between DIST and AUIND1.</td>
</tr>
<tr>
<td>AUSIZE</td>
<td>The number of members on a firm’s audit committee.</td>
</tr>
<tr>
<td>AUMEET</td>
<td>The number of times a firm’s audit committee meets in a year.</td>
</tr>
<tr>
<td>DIST × AUMEET</td>
<td>An interaction term between DIST and AUMEET.</td>
</tr>
</tbody>
</table>
Avoidance of losses and earnings decreases would also provide a strong motivation for earnings management (e.g. Burgstahler and Dichev, 1997). In this study, we however focus on the financial distress situation.

However, Bronson, Carcello, Hollingsworth, and Neal (2005) suggest the benefits of audit committee independence are not realized unless the audit committee is completely independent. Their findings are based upon examining external auditors’ willingness of issuing going-concern opinions to financially distressed firms.

Our inquiry from the Corporate Library indicates that the committee members are defined as independent if the board member is an independent outside director as defined under the Sarbanes-Oxley Act.

Altman (1968) reported that firms with Z-score smaller than 1.81 clearly fall into the bankruptcy group.

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