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THE EFFECT OF AUDIT COMMITTEE INDEPENDENCE ON THE DISTRIBUTION OF EARNINGS LEVELS AND CHANGES

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ABSTRACT

This study investigates whether audit committee independence affects the distribution of earnings levels and changes. We compare the distribution of earnings levels and changes of firms with majority independent audit committees to those of firms with minority independent audit committees. We use the distribution of earnings between the two types of firms to examine whether the high frequency of small earnings increases (and/or profits) relative to small earnings decreases (and/or losses) reported by public firms will be attenuated by the existence of the independent audit committee. We expect that audit committee independence effectively monitors management's discretionary behavior so that firms with majority independent audit committees have smoother earning distributions around zero than firms with minority independent audit committees. Consistent with this expectation, we find that relative to firms with majority independent audit committees, firms with minority independent audit committees (1) report fewer small earnings declines (and/or losses), and (2) report more small earnings increases (and/or profits). These results suggest that the asymmetric pattern of more small earnings increases (and/or profits) than decreases (and/or losses), first documented by Burgstahler and Dichev (1997), can be attributed to earnings management, and the discontinuity of earnings around zero can be attenuated by effective monitoring by an independent audit committee.

Keywords: Audit Committee Independence, earnings management, earnings distribution

1. INTRODUCTION

The earnings distribution is expected to show just as many loss (and/or earnings decrease) firms slightly to the left of zero as profitable (and/or earnings increase) firms slightly to the right of zero. However, previous studies have documented that firms report small declines (and/or losses) in earnings less often than small increases (and/or profits) in earnings (for example, see Burgstahler and Dichev, 1997; and Beatty, Ke, and Petroni, 2002).

However, accounting researchers disagree on why this phenomenon occurs. Although this pattern is consistent with the notion that managers use accounting discretion to avoid small losses and/or earnings decreases (Burgstahler and Dichev, 1997; Degeorge et. al., 1999; Beatty, et. al., 2002; and Beaver et. al., 2003), an alternative explanation is that this pattern simply reflects the underlying distribution of earnings levels and changes (Beaver et. al., 2007). Consequently, competing explanations have been offered to explain why we observe empirical discontinuity around zero in earnings distributions (stated differently, why earnings distributions are not smooth around zero). The purpose of this study is to shed new light on the debate between the two contending explanations of the earnings distribution: the discretionary actions of financial managers and the inherently non-discretionary nature of accounting.

Our study investigates the validity of the earnings management explanation by examining the effect of the independent audit committee on the distribution of earnings levels and changes during 1996-1997. We focus on the distinction between majority and minority independent audit committees because of the suggested difference in the effectiveness of the independent audit committee on the probability of management discretion to manipulate earnings. We argue that management of firms with minority independent audit committees are more likely than those of firms with majority independent audit committees to utilize discretionary accounting assumptions to manage earnings to avoid small earnings declines or losses.

Corporate governance mechanisms constrain improper conduct by financial managers. In this study, we consider one corporate governance mechanism, audit committee independence. Audit committee

independence has been found to affect the use of discretionary accruals by financial managers. We compare the earning distributions of firms with minority independent audit committees to those with majority independent audit committees by investigating the smoothness of the earnings levels and earnings changes around zero for the two types of firms. If firms with majority independent audit committees have smoother earning distributions around zero than the firms with minority independent audit committees, then the findings suggest that managers do act in a discretionary manner by manipulating earnings. Thus, the independent audit committee effectively monitors discretionary management behavior. If the earnings distributions of firms with majority independent audit committees and those of firms with minority independent audit committees are both discontinuous around zero, then the non-discretionary explanation counters the earnings management explanation. We use univariate comparisons and multivariate regression models to statistically test the empirical sample data in this study.

We begin by replicating the analysis of small earnings levels and changes that Burgstahler and Dichev (1997) conducted. Our study shows that firms with minority independent audit committees report more small increases (and/or profits) and fewer small decreases (and/or losses) in earnings than would be expected. We also find evidence that firms with majority independent audit committees report fewer small decreases in earnings than expected. However, we find only weak evidence that firms with majority independent audit committees report fewer small losses and more small profits than expected.

The results of this study exploit a setting to provide further evidence that the unusual pattern of small profits (and/or earnings increases) of publicly held firms is due to earnings management and is not due to the underlying characteristics of the distribution of earnings levels and changes. Our findings should be of interest to the SEC, PCAOB, and AICPA in their ongoing initiatives against earnings management and for audit committee independence. In addition, our study enhances the understanding of the role of the independent audit committee on earnings management through our finding that firms with majority independent audit committees do not exhibit an abundance of small profits in earnings.

We have organized the paper into the following parts. Section II examines prior literature on the distribution of earnings and audit committee independence. Section III describes the research question and design, while Section IV describes the sample, and provides descriptive statistics. Section V presents the results of the empirical tests. Section VI concludes with a summary of the implications and limitations, and offers suggestions for future research.

II. PRIOR LITERATURE REVIEW

The Earnings Management Position on the Distribution of Earnings Levels and Changes

Burgstahler and Dichev (1997) found that during the years of 1977 to 1994, more firms experienced slight earning increases (profits) as opposed to slight earning decreases (losses). Beatty, Ke, and Petroni (2002) documented similar behavior in their analysis of public banks. Under Burgstahler and Dichev's (1997) null hypothesis, the frequency of firms in the intervals slightly to the right and slightly to the left of zero should be similar. They offer a possible explanation for their noted discontinuity of earnings around zero: Managers intentionally manipulate earnings in order to prevent reporting negative earnings (or earnings declines) and to maintain earning patterns.

When firms are in close proximity to avoiding a loss or earnings decrease, financial managers might view the costs of manipulating earnings as low in comparison to the rewards of crossing these thresholds (Jensen and Meckling, 1976; Heath, Larrick, and Wu, 1999). Moral hazard problems will continue to exist in financial reporting because investors use the accounting measures to evaluate managerial performance (Watts, 2003). Financial managers are motivated to introduce bias and noise into the same accounting measures because the measures are used for contracting purposes and impact the managers' welfare.

In addition, Matsumoto (2002) has found that managers of firms with temporary institutional ownership manage earnings to avoid negative earnings surprises. According to Healy and Wahlen (1999), managers are motivated to overstate their firms' earnings to avoid losses so that their firms can meet analyst forecasts, influence investors, and participate in equity offerings. Defond and Jiambalvo (1994) have found that earnings management occurs to preclude debt covenant violations. Gaver, Gaver, and Austin (1995) provide evidence that managers select income-increasing accruals when income falls below bonus plan bounds. Moreover, Caylor (2010) shows that firms strategically recognize revenue to

achieve earnings benchmarks. Hansen (2010) finds that firms just above their earnings benchmark have significantly higher discretionary accruals to meet alternate earnings benchmark goals.

The Accounting Conservatism and Income Tax Code Position on the Distribution of Earnings Levels and Changes

Dechow et. al. (2003) find no significant direct relationship between earnings discontinuity and the boosting of discretionary accruals. Watts (2003) points out that the purpose of conservatism is to constrain the opportunistic behavior and offset managerial biases, Beaver, McNichols, and Nelson (2007) propose that accounting conservatism in financial reporting and the accounting treatment of taxes explain the discontinuous distribution of earnings around zero. Their findings suggest that the magnitude of the discontinuity in the distributions of earnings and earnings changes should not be used to analyze the intensity of earnings management because of the non-discretionary component of earnings management. Profit and loss firms have different characteristics in regards to non-discretionary items.

Profit and loss firms use different accounting treatment of taxes. Profit firms typically make tax payments whereas loss firms utilize carrybacks and carryforwards to receive tax benefits. The effective tax rates for profitable firms decrease net income back towards zero. In contrast, loss firms face lower effective tax rates while using the tax benefit to push net income towards zero or slightly to the right of zero.

The conservative nature of accounting also differs between profit and loss firms. Essentially, there are more transitory items in the earnings of a loss firm. Beaver, McNichols, and Nelson (2007) offer two examples of transitive items: the immediate recognition of losses for asset impairments and restructuring charges. They note that these income-reducing transitive items are more common in loss firms. Nevertheless, recognition of these special items pushes the net income of profitable firms back towards zero while improving the tax benefit of loss firms that ultimately increases the likelihood that income will move upwards towards zero. In addition, Barua et. al. (2010) show that firms manage earnings using discontinued operations. Durtschi and Easton (2005 and 2009) explain that the shapes of the frequency distributions of earnings metrics are not necessarily evidence of earnings management; but they are often affected by averaging, sample selection bias, and scaling.

Audit Committee Independence

The Securities and Exchange Commission recommended that firms implement audit committees in 1940. Their primary duties of the audit committee are to hire and fire external auditors and mediate disputes between external auditors and senior financial managers, who are the agents of the audited firm. The Treadway Commission broadened the description of audit committee duties to include the monitoring of improper conduct by senior management in the preparation of the financial statements (NCFFR, 1987). More recently, the Sarbanes-Oxley Act of 2002 has given the audit committee the responsibility for the accounting and financial reporting process, in addition to overseeing the independent audit of the firm's financial statements. Publicly traded firms listed on the NYSE and NASDAQ exchanges are required to establish and maintain audit committees as of 1978 and 1989, respectively.

In December 1999, the NYSE and NASDAQ mandated that firms listed on their exchanges must have at least three outside directors on the audit committee (Klein, 2002a). The premise is that the presence of outsiders on the audit committee will enable the audit committee to act in a more fair and unbiased manner in settling the disputes between the auditors and financial managers. Regulators expect that independent audit committees will allow firms to provide the best depiction of the intrinsic value of the firm to users of financial information. Section 301 of the Sarbanes-Oxley Act has given more emphasis on the relevance of auditor committee independence by requiring that all audit committee members must be independent of firm management.

Carcello and Neal (2000) examined the relationship between audit committee independence and audit reporting behavior. Their findings suggest that auditors are less likely to issue a going concern opinion to a financially distressed client when the client's audit committee lacks independence from the client's management. Carcello and Neal (2003) also studied the relevance of audit committees and found that audit committees consisting mostly of affiliated insiders are more likely to dismiss external auditors when they render going concern opinions. Carcello et. al. (2008) examined the associations between audit committee financial expertise and earnings management. They find that both accounting and certain types of non-accounting financial expertise reduce earnings management for firms.

Klein (2002b) found a negative relationship between audit committee independence and abnormal accruals. Her findings suggest that audit committees that are independent of firm management more effectively monitor and mitigate earnings management compared to audit committees that lack independence. Cornett et. al. (2009) provide evidence that corporate earnings management at large U.S. bank holding companies is significantly lower when the board is more independent. In addition, Ebrahim (2007) finds that earnings management is negatively related to audit committee independence, and that such negative relation is stronger when the audit committee is more active. Lin and Hwang (2010) conducted a meta-analysis that identifies a negative relationship between audit committee independence and earnings management. However, Ghosh (2010) find no significant relationship between earnings management and audit committee composition, expertise, and ownership.

III. RESEARCH QUESTION AND DESIGN

We agree with the position that financial managers act in a discretionary manner to avoid small losses and earning decreases. We theorize that audit committee independence is an effective corporate governance mechanism that will mitigate discretionary behavior of financial managers to manipulate earnings. Therefore, we expect less discontinuity (more smoothness) around zero for firms with majority independent audit committees.

Beaver, McNichols, and Nelson (2007) predict that the earnings frequency distributions will not be smooth around zero and that there will be more firms slightly to the right of zero because of accounting conservatism and income tax rules. In other words, they propose that earning distributions are discontinuous as a result of the transitive earnings and tax benefit treatment by loss firms. If their assertions are correct, the earnings distributions for firms with minority independent audit committees and for those with majority independent audit committees will both exhibit discontinuity around zero.

However, Beaver, McNichols, and Nelson (2007) indicate that their findings do not rule out earnings management. We argue that the distribution of earnings around zero will be discontinuous for firms with less than majority independent audit committees while firms with majority independent audit committees will experience continuity or smoother earnings distributions around zero. We propose that the presence of an independent audit committee will deter discretionary earnings management behavior. Our prediction is motivated by the empirical evidence that financial managers manipulate earnings and that corporate governance mechanisms such as audit committee independence have been effective in mitigating the discretionary behavior of managers.

Research Design
Univariate Analysis of Small Earnings Changes

Our first set of tests compares earnings levels and small changes in earnings for firms with majority independent audit committees and firms with minority independent audit committees. Similar to Burgstahler and Dichev (1997), we first examine histograms of return on assets (ROA) and the change in return on assets (ΔROA). We calculate ROA as the current year's net income divided by market value at the beginning of the year, and ΔROA as the difference between the current year's net income and the previous year's net income, divided by market value at the beginning of the previous year. Firms' market values are computed as fiscal year closing price multiplied by the number of outstanding common shares.

To test whether the distribution of earnings levels (and changes) around the zero threshold is smooth, we next replicate Burgstahler and Dichev's (1997) primary analysis by calculating the standardized difference for the two intervals adjacent to zero for our sample of firms with majority independent audit committees and firms with minority independent audit committees. The standardized difference for an interval is the difference between the observed and expected number of observations in the interval, divided by the estimated standard deviation of the difference.

For this analysis we consider ROA (ΔROA) as small if the absolute value is less than 0.0025; we therefore focus on ROA (ΔROA) within two intervals: between -0.0025 and 0, and between 0 and 0.0025. The expected number of observations in each interval is the average number of observations in the two immediately neighboring intervals. We calculate the standard deviation of the standardized difference using the entire distribution of earnings levels (and changes).

Logistic Regression Analysis of Small Earnings Levels and Changes for Majority vs. Minority Independent Audit Committee Firms

To test for differences in the management of small earnings levels (changes) between majority independent audit committee firms and minority independent audit committee firms, we also conduct a logistic regression of the sign of small earnings levels (changes) on an indicator variable for majority vs. minority independent audit committee firms. We control for differences between the two types of firms that may affect the sign of the levels (changes) in pre-managed earnings (i.e., the nondiscretionary levels and changes in earnings). Specifically, we estimate the following year fixed-effects model on all firm-years with earnings levels (changes) near zero (i.e., with the absolute value of ROA (ΔROA) less than or equal to 0.005):

(Level Regression)
$$ROAPOS_{it} = \alpha_t + \beta_1 \text{ MINORITY}_i + \beta_2 \Delta ASSET_i + \beta_3 LASSET_i + \varepsilon_{it} \quad (1)$$

(Change Regression)
$$\Delta ROAPOS_{it} = \alpha_t + \beta_1 \text{ MINORITY}_i + \beta_2 \Delta ASSET_i + \beta_3 LASSET_i + \varepsilon_{it} \quad (2)$$

where:
> i = company index;
> t = year index for 1996-1997;
> ROAPOS = dummy variable, taking the value 1 if the firm has ROA in the interval between 0 (exclusive) and 0.005 (inclusive), and 0 otherwise; and
> ΔROAPOS = dummy variable, taking the value 1 if the firm has ΔROA in the interval between 0 (exclusive) and 0.005 (inclusive), and 0 otherwise; and
> MINORITY = dummy variable, taking the value 1 if the firm has minority independent audit committee, and 0 otherwise.

The control variables are the following:
> ΔASSET = first difference in total assets, divided by market value at the end of the previous year;
> LASSET = natural log of total assets;

ΔASSET controls for growth and LASSET controls for firm size. The coefficients on ΔASSET and LASSET should be positive if large and high-growth firms are increasingly more profitable or more likely to manage earnings to avoid reporting a small loss (decline) in earnings.

IV. SAMPLE AND DESCRIPTIVE ANALYSES

Sample

To determine whether a firm has a majority independent audit committee or a minority independent audit committee, we compute the percentage of inside, affiliated, and outside directors on the audit committee. If the percentage of outside directors is greater than the sum of the percentages of inside and affiliated directors for a firm, we define the firm's audit committee as a majority independent audit committee. We define outside directors as individuals with no affiliation with the firm other than serving as directors. Affiliated directors include former employees, relatives of the CEO, and individuals with significant transactions or business relationships with the firm. Inside directors are current officers or employees of the company or of a related entity. We hand-collect data about firms' audit committees from SEC-filed proxy statements. In the proxy statements, firms disclose information about the directors and officers, including biographical background of the directors and officers, significant current or proposed transactions with management, certain business relationships with the firm, current firm shareholdings, and business experience within the last five years.

Our sample period covers 1996 to 1997. We use this sample period because it is prior to 1999 when the NYSE and NASDAQ mandated that firms listed on their exchanges must have at least three

outside directors on the audit committee (Klein, 2002a), and is prior to the Sarbanes-Oxley Act (2002) which required that all audit committee members must be independent of firm management. Initially, we include all U.S. firms in Compustat from 1996 and 1997. We exclude bank and financial institution firm-years and insurance company firm-years. We also remove firm-years with missing audit committee data from the sample. The final sample has 1,678 firm-year observations. Because we scale earnings by lagged market value, we also collected 1995 Compustat data.

Descriptive Statistics

Panel A of Table 1 provides industry analysis about our sample. Panel B of Table 1 shows descriptive statistics on the percentage of inside directors, affiliated directors, and outside directors on the audit committee for the sample. For our sample of firms with majority independent audit committees, the percentage of outside directors on the audit committee is close to ninety percent (89.3 percent) while the percentage of inside and affiliated directors is only 10.7 percent. On the other hand, for our minority independent audit committee firms, almost two thirds of the audit committee members are either inside or affiliated directors (64.6 percent). Panel C of Table 1 presents descriptive statistics, by audit committee type, for each of the study's independent variables, and provides two-sample Wilcoxon rank-sum tests for the differences between majority and minority independent audit committee firms.

Panel C reports that the firms with minority independent audit committees are significantly larger than the firms with majority independent audit committees measured by median assets (the difference is statistically significant at the one percent level). The median assets for the minority independent audit committee firms are $352.9 million, whereas the median assets for the majority independent audit committee firms are only $143.6 million. However, firms with minority independent audit committees have lower asset growth than firms with majority independent audit committees. The median growth in assets for minority independent audit committee firms is only 3.9 percent per year, while the median growth for majority independent audit committee firms is 10.9 percent (the difference is statistically significant at the one percent level).

In addition, compared to the firms with majority independent audit committees, the firms with minority independent audit committees have higher return on assets (4.6 percent vs. 3.0 percent) and change in return on assets (1 percent vs. 0.4 percent). However, the difference is only marginally significant using Wilcoxon rank-sum test. Compared to firms with majority independent audit committees, firms with minority independent audit committees (61 percent vs. 68 percent) are less likely to have a CEO who simultaneously serves as the chairman of the board; but the difference is not statistically significant.

TABLE 1
Descriptive Statistics by Audit Committee Type, 1996-1997
Panel A: Industry Analysis

Industry SIC	1,352 Majority Independent Audit Committee Firms	326 Minority Independent Audit Committee Firms	Total
SIC 0 - 1999	82	23	105
SIC 2000 - 2999	314	73	387
SIC 3000 - 3999	424	98	522
SIC 4000 - 4999	38	10	48
SIC 5000 - 5999	197	42	239
SIC 6000 - 6999	82	25	107
SIC 7000 - 7999	171	43	214
SIC 8000 - 8999	39	9	48
SIC 9000 - 9999	5	3	8
Total	1,352	326	1,678

Panel B: Audit Committee Membership

Director Classification	1,352 Majority Independent Audit Committee Firms (Percent in Audit Committee)	326 Minority Independent Audit Committee Firms (Percent in Audit Committee)	Total
Number of Inside Audit Committee Members	159 (2.3%)	168 (12.2%)	327
Number of Affiliated Audit Committee Members	585 (8.4%)	723 (52.4%)	1,308
Number of Outside Audit Committee Members	6,192 (89.3%)	489 (35.4%)	6,681
Total Number of Audit Committee Members	6,936 (100%)	1,380 (100%)	8,316

Panel C: Descriptive Statistics for all Firm-Years
Mean (Median) [Standard Deviation]

Variable Name[a]	1,352 Majority Independent Audit Committee Firms	326 Minority Independent Audit Committee Firms	Rank-Sum Z for Difference (two-tailed p-value)
ASSETS (millions)	1,820.7 (143.6) [7,714.3]	1,438.9 (352.9) [2,701.4]	4.25 (0.001)***
ΔASSET	0.107 (0.109) [0.508]	0.071 (0.039) [0.227]	2.59 (0.001)
ROA	-0.097 (0.030) [0.317]	0.004 (0.046) [0.135]	1.80 (0.07)*
ΔROA	0.011 (0.004) [0.216]	0.012 (0.010) [0.074]	1.11 (0.11)
CEO	924 / 1,352 (68%)	200 /326 (61%)	1.03 (0.13)

[a] Variable definitions:

ASSETS = total assets;

ΔASSET = first difference in total assets, divided by market value at the end of the previous year; ROA = net income divided by market value at the beginning of the year;

ΔROA = current year's net income less previous year's net income, divided by market value at the beginning of the previous year;

CEO = dummy variable, taking the value 1 if the firm's CEO is the chairman of the board.

On average, firms with minority independent audit committees perform better than majority independent audit committee firms. Thus, it is critical to our interpretation of the incidence of small earnings levels (increases) that our tests adequately control for differences in financial performance. Our tests include controls for asset growth, size, and year.

V. RESULTS

Univariate Tests of Differences of Small Earnings Changes
        We focus on net income in our results reported below. However, we also used earnings before extraordinary items, and obtained qualitatively similar results for these two alternative measures of earnings. Because the earnings observations are drawn from a broad range of firm sizes, we scale (divide) earnings variables. Accounting and finance literature have used a variety of approaches to scaling. In the results reported here, we divide the earnings variable by beginning of the year market value of common equity for year t and the change variable (change in earnings between years t-1 and t) is divided by beginning of the year market value of equity from year t-1. We also calculated the results scaled by beginning of the year total assets, and we find qualitatively similar result for these two alternative scaling variables.
        Earnings management to avoid losses (and declines) will be reflected in unusually low frequencies of small losses (and decreases) and unusually high frequencies of small positive earnings
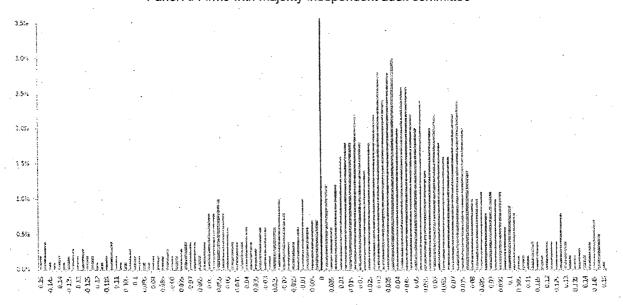
(and increases). Similar to Burgstahler and Dichev (1997), we provide two types of evidence to determine whether earnings management to avoid losses (and/or earnings decreases) exists. First, we present histograms of the frequency distributions of scaled levels of earnings (and earnings changes). Second, we present formal statistical tests suggested by Burgstahler and Dichev (1997).

Figure 1 and Figure 2 show histograms of the scaled earnings level and change variable with histogram interval widths of 0.0025 for the range -0.15 to +0.15. More specifically, Figure 1 plots ROA, and Figure 2 plots ΔROA for firms with majority independent audit committees and for firms with minority independent audit committee. All of the figures show a single-peaked, bell-shaped distribution with an irregularity near zero. In both Figure 1 and Figure 2, there is a large increase in the percentage of observations just to the right of zero, which is consistent with the explanation of earnings management to avoid earnings decreases; earnings changes slightly less than zero occur less frequently than would be expected and earnings changes slightly greater than zero occur more frequently than would be expected. This increase is much more dramatic for minority independent audit committee firms, suggesting that firms with majority independent audit committees and minority independent audit committees differ in their reporting of small losses (and earnings declines) and small profits (and earnings increase).

In Table 2 we report the results of our Burgstahler and Dichev (1997) analysis. Burgstahler and Dichev (1997) construct a test statistic to examine the smoothness of the cross-sectional frequency distributions of earnings levels and earnings changes. The null hypothesis, that the distribution is smooth, is tested by the difference between the actual number of observations in an interval and the expected number of observations in the interval, divided by the estimated standard deviation of the difference.

As predicted, for firms with minority independent audit committees, fewer firms report small negative earnings and small declines in earnings than expected, reported in Panel A and Panel B in Table 2 (standardized difference of -1.36 for earnings levels and -3.63 for earnings changes). We also find more small profits and increases in earnings than expected for firms with minority independent audit committees (standardized difference of 1.70 for earnings levels and 3.31 for changes). However, compared to firms with minority independent audit committees, Table 2 reports weaker evidence for firms with majority independent audit committees. We find that for firms with majority independent audit committees, fewer firms report small negative earnings and small declines in earnings than expected (standardized difference of -0.21 for earnings levels and -3.11 for changes), and more firms report small profits and earnings increases than expected (standardized difference of 1.05 for earnings levels and 2.94 for changes). However, these findings for the majority independent audit committee firms are significantly weaker compared to the minority independent audit committee firms. We do not interpret the

FIGURE 1
The distribution of annual net income divided by beginning of the year market value
Panel A: Firms with majority independent audit committee
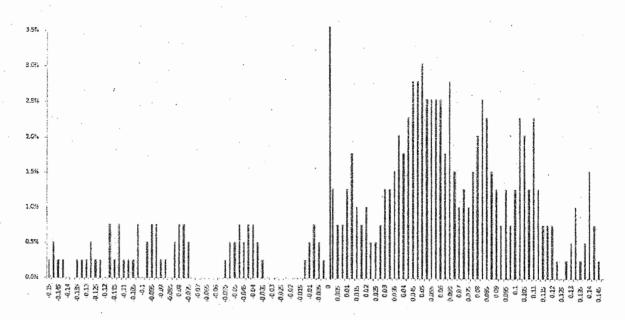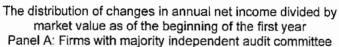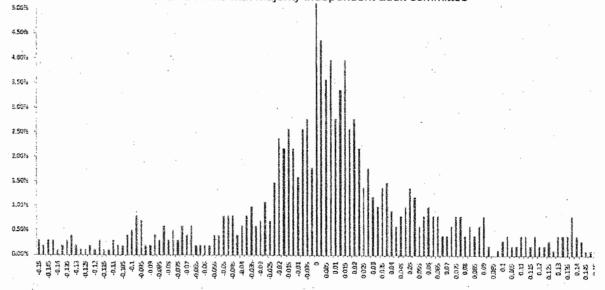
Panel B: Firms with minority independent audit committee

FIGURE 2
The distribution of changes in annual net income divided by
market value as of the beginning of the first year
Panel A: Firms with majority independent audit committee

Panel B: Firms with minority independent audit committee

standardized difference as a t-statistic for assessing significance because the distributions of our earnings levels and changes are not smooth.

TABLE 2

Panel A: Firm-Years with *Levels* in Return on Assets in the Interval Just Below Zero and Just Above Zero by Audit Committee Type, 1996-1997

(Total Observations)	Standardized Difference[a] (Actual Number of Firm-Years in Interval) [Expected Number of Firm-Years in Interval]	
	Interval Just Below Zero (ROA[b] between -0.0025 and 0)	Interval Just Above Zero (ROA between 0 and 0.0025)
Majority Independent Audit Committee Firms (1,352)	-0.21 (12) [14]	1.05 (18) [11]
Minority Independent Audit Committee Firms (326)	-1.36 (2) [5]	1.70 (6) [3]

Panel B: Firm-Years with *Changes* in Return on Assets in the Interval Just Below Zero and Just Above Zero by Audit Committee Type, 1996-1997

(Total Observations)	Standardized Difference[a] (Actual Number of Firm-Years in Interval) [Expected Number of Firm-Years in Interval]	
	Interval Just Below Zero (ΔROA[c] between -0.0025 and 0)	Interval Just Above Zero (ΔROA between 0 and 0.0025)
Majority Independent Audit Committee Firms (1,352)	-3.11 (27) [54]	2.94 (66) [41]
Minority Independent Audit Committee Firms (326)	-3.63 (8) [19]	3.31 (23) [12]

[a] The standardized difference is the difference between the observed and expected number of firm-years in an interval, standardized by the estimated standard deviation of the difference.

[b] ROA is current year's net income divided by market value at the beginning of the previous year.

[c] ΔROA is current year's net income less previous year's net income, divided by market value at the beginning of the previous year.

Logistic Regression Tests of Differences in Small Earnings Levels and Changes

Table 3 reports the logistic regression results for the differential likelihood of reporting small profits (and increases) in earnings and small losses (and declines) across the majority vs. minority audit committee distinction. The analysis includes all 1,678 firm-years with absolute ROA (and ΔROA) no greater than 0.005. Panel B in Table 3 reports that for the change (ΔROA) logistic regression, the coefficient on MINORITY is significantly positive at the level less than 0.05 (we report two-sided statistics throughout the paper). Thus, firms with minority independent audit committees report significantly more small increases and fewer small decreases in earnings than firms with majority independent audit committees do, even after controlling for firm size and asset growth. Firm size and growth do not provide explanatory power. Panel A, however, reports that for the level (ROA) logistic regression, there is no significant evidence of the relationship between minority independent audit committee firms and reporting more small profits and fewer small losses.

TABLE 3

Logistic Model of Earnings Management for Different Types of Audit Committee Firms with Small Earnings Levels and Increases

1996-1997[a] (n = 1,678)[b]

Panel A: Earnings Levels

$$ROAPOS_{it} = \alpha_t + \beta_1 MINORITY_i + \beta_2 \Delta ASSET_i + \beta_3 LASSET_i + \varepsilon_{it}$$

Independent Variable	Coefficient Estimate	Two-Tailed p-value
Intercept	-3.043	0.01
MINORITY	-0.447	0.55
ΔASSET	-0.275	0.63
LASSET	-0.024	0.79

Panel B: Earnings Changes

$$\Delta ROAPOS_{it} = \alpha_t + \beta_1 MINORITY_i + \beta_2 \Delta ASSET_i + \beta_3 LASSET_i + \varepsilon_{it}$$

Independent Variable	Coefficient Estimate	Two-Tailed p-value
Intercept	-2.760	0.01
MINORITY	0.712	0.04
ΔASSET	-0.039	0.93
LASSET	0.056	0.39

[a] Variable Definitions where:

    i = company index;

    t = year index for 1996-1997;

    ROAPOS = dummy variable, taking the value 1 if the firm has ROA in the interval between 0 (exclusive) and 0.005 (inclusive), and 0 otherwise; and

    ΔROAPOS = dummy variable, taking the value 1 if the firm has ΔROA in the interval between 0 (exclusive) and 0.005 (inclusive), and 0 otherwise; and

    MINORITY = dummy variable, taking the value 1 if the firm has minority independent audit committee, and 0 otherwise.

The control variables are the following:

    ΔASSET = first difference in total assets, divided by total assets at the end of the previous year;

    LASSET = natural log of total assets;

VI. CONCLUSIONS

This paper compares earnings levels and small earnings changes around zero in earnings for firms with majority independent audit committees and firms with minority independent audit committees during 1996-1997 to increase our understanding of why firms' reported earnings levels and changes are asymmetric around zero, with more small profits (and/or increases) than losses (and/or decreases) in reported earnings. We argue that corporate governance mechanisms, such as independent audit committees, will abate managers' discretionary earnings management behavior. Thus, we predict that firms with minority independent audit committees are more likely than firms with majority independent audit committees to manage earnings to achieve simple earnings benchmarks, such as small profits and increases in earnings.

Our results support this expectation. We find that firms with minority independent audit committees report significantly fewer small losses (and small declines) and more small profits (and small increases) in earnings than expected. In contrast, we find that firms with majority independent audit committees report only marginally fewer small losses in earnings than expected. Even after controlling for potential differences between the characteristics of firms with majority and minority independent audit committees that may affect firms' earnings manipulation, we find that firms with majority independent audit committees are significantly less likely than minority independent audit committee firms to report small losses (and small declines) in earnings.

This study provides evidence of differences in the earnings streams of firms with majority vs. minority independent audit committees. The study contributes to earnings management literature by validating that the lower-than-expected incidence of small losses (and/or decreases) in earnings of public firms is primarily attributable to earnings management. This study has limitations in that the unidentified and thus uncontrolled differences between firms with majority independent audit committees and firms with minority independent audit committees may affect the observed differences in the asymmetry of earnings levels (changes) around zero.

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