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中文摘要：本研究考量經濟誘因所產生之經濟結合 (economic bonding) 對於會計師以及審計委員會獨立性所產生之潛在影響後，探討經理人會利用會計師還是審計委員會來進行盈餘管理。初步實證結果顯示：當經理人欲以裁決性應計來進行盈餘管理時，會利用會計師；反之，若經理人欲以 real earnings management 活動來進行盈餘管理時，會利用審計委員會。本研究的發現將有三個政策性的意涵：(1) 主管機關可能必須考慮針對獨立性喪失較嚴重的監督者，予以額外的規範；(2) 主管機關可以瞭解何種類型的公司會利用何種監督者來進行盈餘管理；(3) 主管機關可以了解管理當局到底是將會計師與審計委員會視為策略性互補或者是策略性替代，來確保財務報導的可靠性。從管制面的角度來看，策略性互補應為沙氏法案立法的主要目的。

中文關鍵詞：會計師獨立性、審計委員會獨立性、盈餘管理、經濟結合、監督效率性

英文摘要：

英文關鍵詞：

Do Managers rely on Auditors or Audit Committees to Cook the Books?

**Hung-Chao Yu
Department of Accounting
College of Commerce
National Chengchi University**

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1. INTRODUCTION

On December 21, 2010, the New York State Attorney General, Andrew Cuomo, filed a lawsuit against Ernst & Young (EY). In his 32-page civil fraud complain, Andrew Cuomo accused that, during 2001 and 2008, EY directly facilitated Lehman Brothers to hide \$50 billion of its highly liquid fixed income securities with an aim to reduce Lehman's balance sheet leverage (i.e., the so-called Repo 105 maneuver), thereby defrauding the investing public. In this complain, Andrew Cuomo pointed out several major auditing issues related to EY. First, EY's audit fees grew up as Lehman's revenues boomed during the seven years when it used the Repo 105 transactions. In fact, EY received more than \$185 million of audit fees from Lehman during this period. Second, before its collapse in September 2008, Lehman was EY's 8th-largest U.S. client by audit fees, and it was in EY's top 15 clients in each of the previous seven years. Third, EY never communicated anything about the Repo 105 transactions to Lehman's audit committee. Finally, Lehman's audit committee was not accused for negligence in this civil litigation.

This *Lehman Brothers vs. Ernst & Young* case deserves great attention by securities regulators and the auditing academics because it involves a breakdown of external auditors and audit committees, two major gatekeepers whose qualifications and responsibilities have been explicitly stipulated in the Sarbanes-Oxley Act (SOX) and subsequent SEC rules. On the one hand, EY is similar to the former Arthur Andersen in that both CPA firms appear to compromise their independence in detecting and reporting material misapplications of GAAP due to high audit fees paid by their clients. This notion is consistent with the argument made by Lynn Turner, former SEC chief accountant, that audit partners "... get extremely scared to death about losing a major client." (Rappaport and Rapoport 2010). On the other hand, Lehman's audit committee not only failed in preventing fraudulent financial reporting resulting from the long-standing Repo 105 maneuver, but also failed in retaining EY as Lehman's auditors and paying increasing audit fees over years. Apparently, Lehman's management relied on its

auditor to successfully play with its audit committee for many years. This contrasts with the 2005 *SEC vs. Del Global Technologies* case, in which Del's former audit committee chairman, David Michael, was sued by the SEC for signing false audit confirmation letters to help Del's management engage in improper revenue recognition and conceal deceptive accounting practices during 1997 and 2000, all of which resulted in fraudulent financial statements. In this case, Del's management relied on its audit committee to successfully play with its auditor, BDO Seidman. Given the stringent rules SOX imposes on the auditors (e.g., Section 201, 203, 206), the audit committees (e.g., Sections 301, 407), and the required communications between them (e.g., Sections 204, 301, 303), it is empirically important to understand whether managers rely on one gatekeeper to fool around the other for the purpose of cooking their books.

This study intends to address a narrower research question related to the empirical issue mentioned above. Specifically, I will investigate managers' decision of relying on auditors or audit committees to cook the books, taking into account the economic bond that may impair these two gatekeepers' independence. This research question bears three policy implications. First, new regulations (e.g., types and disclosure of compensation, and timing of payments) may be needed to the party whose oversight effectiveness is relatively weaker due to relatively stronger economic bond with the managers. Second, the empirical evidence may provide insights into the association between company characteristics and its relative reliance on auditors or audit committees to cook the books. Finally, securities regulators may gain an understanding as to whether managers use auditors and audit committees as strategic substitutes or strategic complements in ensuring the credibility of their financial reporting (Pae and Yoo 2001). From a regulation's perspective, it is desirable that managers regard auditors and audit committees as strategic complements because this is consistent with Sections 204 (i.e., the auditors should report all findings found in the audits to the audit committees) and 301 (i.e., audit committees are responsible for the appointment, compensation, and oversight of the

auditors).

Auditor independence has long been regarded as a cornerstone to the public accounting profession (Abbott et al. 2003; Craswell et al. 2002; Mednick 1997; AICPA 1999; Levitt 2000; SEC 2000, 2003). Driven by Sections 201, 206, and 207 of SOX, recent auditing studies have examined the efficacy of prohibiting nonaudit service provisions (e.g., Ashbaugh et al. 2003; Chung and Kallapur 2003; DeFond et al. 2002; Frankel et al. 2002; Whisenant et al. 2003), restricting the revolving door practice (e.g., Lennox 2005; Menon and Williams 2004), and mandating audit firm rotation (e.g., Geiger and Raghunandan 2002; Johnson et al. 2002; Myers et al. 2003) on the improvement and maintenance of auditor independence. In contrast, audit committee independence also receives much attention by the auditing academics because audit committee independence is associated with stronger monitoring (e.g., Carcello and Neal 2003; Klein 2002a, 2002b; Lennox and Park 2007; Menon and Williams 2004, 2008; Naiker and Sharma 2009), and such strengthened monitoring further improves earnings quality (e.g., Beasley et al. 2009; Bedard et al. 2004; Srinivasan 2005). While prior research has studied the effects of auditor independence and audit committee independence alone on managers' financial reporting quality, few attempts have been made to compare the relative oversight effectiveness of auditors and audit committees when they face financial incentives motivating them to compromise their independence. This study provides a first step to provide some empirical evidence on this issue.

To address the research question, I first use earnings management measures to proxy for both parties' oversight effectiveness in mitigating managers' book-cooking behavior. Earnings management measures can capture auditors' oversight effectiveness because prior studies have found that higher audit quality effectively alleviates managers' earnings management (e.g., Ashbaugh et al. 2003; Becker et al. 1998; Frankel et al. 2002). In addition, earnings management measures may capture audit committees' oversight effectiveness because recent research has shown that stronger oversight functions are associated with higher earnings quality (e.g., Beasley et al. 2009; Bedard et al. 2004;

Klein 2002a; Srinivasan 2005). I adopt five earnings management measures in this study: a traditional measure in which the modified Jones model is used to calculate the performance-adjusted discretionary accruals (Cohen et al. 2008; Cahan and Zhang 2006; Ferguson et al. 2004; Francis et al. 2005; Ghosh and Moon 2003; Gul et al. 2003; Johnson et al. 2002; Kothari et al. 2005; Myers et al. 2003), a measure that capture managers' real earnings management activities (Cohen et al. 2008; Roychowdhury 2006), the smoothness of earnings (Grant et al., 2009; Lang et al. 2006; McInnis 2010), companies' use of positive discretionary accruals to meet or beat analyst forecasts (Burgstahler and Dichev 1997; Davis et al. 2009; Degeorge et al. 1999; Heninger 2001), and accrual quality (Francis et al. 2005; Dechow and Dichev 2002; Doyle et al. 2007; Srinidhi and Gul 2007). I consider multiple earnings management measures because Xu et al. (2007) indicates that managers usually use multiple methods to manage earnings numbers. Also, recent studies tend to use multiple measures for audit quality (e.g., Carey and Simnett 2006; Lim and Tan 2008).

I then adopt audit fees paid to the auditors and compensation given to the audit committees as measures of the degree of economic bond. I use audit fees to proxy for the economic bond between the managers and the auditors because audit firms generally face increased independence risk as incentives to satisfy clients' demand increase (Johnstone et al. 2001), and audit fees represent the fundamental economic bond between the auditors and clients due to the continuous demand of audit services (DeAngelo 1981). Following Ashbaugh et al. (2003), I use the magnitude of total fees and audit and audit-related fees to capture the economic bond between the managers and the auditors. Similarly, compensation paid to the audit committees also constitutes an economic bond that may threatens audit committees independence (Archambeault et al. 2008; Engel et al. 2010). Following Engel et al. (2010), I examine audit committees' compensation packages under three regimes: cash retainer, stock awards, and option grants. I use the magnitude of total compensation to capture the economic bond between the management and the audit committees. Since Lin and Yu (2010) documents that equity-based (i.e.,

stock plus option) compensation harms audit committees' independence while cash retainer improves independence, I also decompose total compensation into cash and equity-based components to further examine whether managers use different types of compensation to create different levels of economic bond.

The remainder of this research proposal is organized as follows. Section 2 describes the basic research design, including the measures of dependent and independent variables, the econometric models, and the sample selection procedures. Section 3 lists tasks to be finished if this research proposal is approved.

2. RESEARCH DESIGN

2.1 Measures of Earnings Management:

2.1.1 Discretionary accruals

I first use the traditional discretionary accruals to proxy for managers' earning management. I follow Collins and Hribar (2002) by adopting the cash flow statement approach to compute the total accruals (*TACC*). That is, the total accruals equal income before extraordinary items (Compustat item #123) less operating cash flows adjusted for discontinued operations and extraordinary items (#308 – #124). I then estimate the modified Jones model on a cross-sectional basis for each Fama and French (1997) industry with 20 or more firms in year *t*:

$$TACC_{i,t} / A_{i,t-1} = \alpha_1 + \beta_1 (\Delta SALES_{i,t} / A_{i,t-1} - \Delta REC_{i,t} / TA_{i,t-1}) + \beta_2 (PPE_{i,t} / TA_{i,t-1}) + \varepsilon, \quad (1)$$

where

TACC = Operating income less operating cash flows;

$\Delta SALES$ = Change in sales from the previous year to the current year;

ΔREC = Change in accounts receivable from the beginning to the end of the year;

PPE = Year-end property, plant and equipment;

TA = Total Assets at the end of year *t-1*;

ε = the residual term.

I compute the performance-adjusted discretionary accruals based on Cahan and Zhang (2006). That is, for each Fama and French (1997), I divide the sample into deciles based on sample companies' return on assets (*ROA*). I then adjust each discretionary accrual estimated from model (1) by subtracting the median discretionary accruals for the firm's industry-*ROA* deciles. In the statistical analyses, I will use the absolute value of these performance-adjusted discretionary accruals (*DA*) to measure the combined effect of income-increasing and income-decreasing earnings management decisions. Further, I will also run separate analyses for companies with income-increasing and income-decreasing *DA* (Frankel, et al. 2002; Myers et al. 2003) .

2.1.2 Real Earnings Management

To detect real earnings management activities, I will use the proxy developed by Roychowdhury (2006), to measure real earnings management. Roychowdhury (2006) consider a firm's abnormal cash flows, abnormal inventory production, abnormal discretionary expenditures as three indicators of real activities manipulations. Following Cohen et al. (2008), I use a summary measure combining these three components. First, I calculate abnormal cash flows as residuals of predicted regression model (2-1), which is estimated by year and industry identified using two-digit SIC code:

$$\frac{CFO_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{SALES_{i,t-1}}{Assets_{i,t-1}} + k_3 \frac{\Delta SALES_{it}}{Assets_{i,t-1}} + k_4 \frac{\Delta SALES_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{it} \quad (2-1)$$

where *CFO* is cash flow from operations. *SALES* are annual sales revenues (Compustat data item12) and *Assets* are total assets (Compustat data item 6). Furthermore, abnormal discretionary expenses are estimated as the residuals from the following industry-year regression (2-2):

$$\frac{DISX_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{SALES_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{it} \quad (2-2)$$

where *DISX* are discretionary expenses during the year, which is defined as the sum of advertising expenses (Compustat data item 45), R&D expenses (Compustat data item 46) and SG&A (Compustat

data item 189). *SALES* are annual sales revenues (Compustat data item 12) and *Assets* are total assets (Compustat data item 6). Finally, abnormal production costs are estimated as the residuals from the following industry-year regression (2-3):

$$\frac{PROD_{it}}{Assets_{i,t-1}} = k_1 \frac{1}{Assets_{i,t-1}} + k_2 \frac{SALES_{i,t-1}}{Assets_{i,t-1}} + k_3 \frac{\Delta SALES_{it}}{Assets_{i,t-1}} + k_4 \frac{\Delta SALES_{i,t-1}}{Assets_{i,t-1}} + \varepsilon_{it}, \quad (2-3)$$

where *PROD* are production costs, defined as the sum of costs of goods sold (Compustat data item 41) and change in inventory during the year (Compustat data item 3). I thus compute *REM_Index* as the sum of the three standardized individual components, (i.e., - standardized abnormal cash flows + standardized abnormal production costs - standardized abnormal discretionary expenses). Higher levels of *REM_Index* imply higher levels of real earnings management.

2.1.3 Accrual quality

I measure accrual quality *ACCQUAL* by the absolute values of the accrual estimation errors employed by Francis et al. (2005) and Doyle et al. (2007), which is a modification of the original Dechow and Dichev (2002) model:

$$TCA_t = \beta_0 + \beta_1 CFO_{t-1} + \beta_2 CFO_t + \beta_3 CFO_{t+1} + \beta_4 \Delta REV_t + \beta_5 PPE_t + \varepsilon_t, \quad (3)$$

where

$$TCA = (\Delta CA - \Delta Cash - (\Delta CL - \Delta STDebt));$$

ΔCA = change in current assets (COMPUSTAT #4);

$\Delta Cash$ = change in cash balance (COMPUSTAT #1);

ΔCL = change in current liabilities (COMPUSTAT #5);

$\Delta STDebt$ = change in short-term debt included in current liabilities;

OCF = operating cash flow from the cash flow statement (COMPUSTAT #308);

ΔRev = change in revenues (COMPUSTAT #12);

PPE = gross value of property, plant, and equipment (COMPUSTAT #7).

All changes are between period t and period $t - 1$ unless otherwise specified and all variables are scaled by the average total assets.

2.2 First-Stage Auditor Choice Model

Because an auditor choice decision is usually endogenously determined by the audit committee, I adopt Heckman's (1979) two-stage estimation procedure to control for the self-selection bias. In the first stage, I estimate the following probit model of auditor choice:

$$\begin{aligned} BIGN_t = & \alpha_0 + \beta_1 SIZE_t + \beta_2 ROA_t + \beta_3 M\&A_t + \beta_4 GROWTH_t \\ & + \beta_5 INDSHARE_t + \beta_6 SUBSID_t + Fixed\ Effects + \varepsilon_t, \end{aligned} \quad (4)$$

where

BIGN = 1 if a company is audited by a Big N auditor in year *t* and 0 otherwise;

SIZE = Natural log of total assets at end of year *t*;

ROA = Return on assets, defined as net income before extraordinary items divided by total assets;

M&A = 1 if the company experiences a merger or acquisition in the preceding two years and 0 otherwise;

GROWTH = $(SIZE_t - SIZE_{t-1}) / SIZE_{t-1}$;

INDSHARE = Auditor's market share in the client's industry, based on the percentage of the square root of total assets that the auditor audits for all companies in the client's industry;

SUBSID = Square root of a company's total number of subsidiaries;

Fixed Effects = Dummy variables controlling for fixed effects of industries and calendar years;

ε = the residual term.

In estimating model (4), the dependent variable, *BIGN*, is a dummy variable which equals one if a company is audited by a Big N auditor during the sample period, and zero otherwise. The independent variables include major determinants of auditor choice documented in prior studies. For example, I include *SIZE*, *ROA*, and *M&A* because Chaney et al. (2004) reports that companies choosing the Big N are usually larger, more profitable, and involving more merger and acquisition activities. In addition, I include *GROWTH* because prior studies have shown that companies with higher growth opportunities

are more likely to switch to the Big N (e.g., Francis and Wilson 1988; Healy and Lys 1986). Variable *INDSHARE* is included because auditors who are industry experts are capable of providing high quality audit (e.g., Balsam et al. 2003; Beasley and Petroni 2001; Hogan and Jeter 1999). Finally, *SUBSID* is considered because companies having more complex operations generally require larger auditing firms with more resources (Hay et al. 2006; GAO 2003).

2.3 Second-Stage Earnings Management Model:

At the second stage, I focus on companies audited by the Big N to ensure that all sample firms are subjected to homogenous audit quality, thereby reducing possible spurious correlations between the test variable and the dependent variable due to non-Big N's lower audit quality. To examine the effects of the manager-auditor economic bond on managers' earnings management behavior, I include a test variable *FEES* in the following model (5-1):

$$EM\ Measure_{i,t} = \alpha_0 + \alpha_1 FEES_{i,t} + \alpha_2 SIZE_{i,t} + \alpha_3 MB_{i,t} + \alpha_4 LEVERAGE_{i,t} + \alpha_5 OCF_{i,t} + \alpha_6 OVERVALUED_{i,t} + \alpha_7 LEADER + \alpha_8 SHAREDECR_{i,t} + \alpha_9 SHAREINCR_{i,t} + \alpha_{10} Lambda_{i,t} + \varepsilon, \quad (5-1)$$

where

EM Measures = *DA* and *REM_Index*;

FEES = The natural log of total fees or audit and audit-related fees paid by a company for year *t*'s audit;

SIZE = Natural log of total assets at the end of year *t*;

MB = Market value to book value of equity at the end of year *t*;

LEVERAGE = Total debt dividend by total assets at the end of year *t*;

OCF = Cash flows from operating activity deflated by beginning total assets;

OVERVALUED = Each firm's extent of equity overvaluation, measured by its annual abnormal return in year *t*;

LEADER = 1 if the successor (or incumbent) auditor's industry expertise falls into the classification presented in Hogan and Jeter (1999), and 0 otherwise;

SHAREDECR = 1 if the company has a decline of more than 10 percent of total outstanding shares during the year and 0 otherwise;

SHAREINCR = 1 if the company has a increase of more than 10 percent of total

outstanding shares during the year and 0 otherwise;
 λ = Inverse Mills ratio variable from model (4) regression;
 ε = the residual term.

I also include several control variables that have been found in prior studies to have significant impacts on managers' earnings management decisions (e.g., DeFond and Jiambalvo 1994; Frankel et al. 2002; Matsumoto 2002). For example, I consider company size (denoted by *SIZE*) because larger companies generally face greater political costs and, therefore, have less flexibility and weaker incentives to overstate earnings (Watts and Zimmerman 1978). In addition, I control for companies' financial leverage (denoted by *LEVERAGE*) because empirical evidence shows that managers use discretionary accruals to avoid the violation of debt covenants (e.g., DeFond and Jiambalvo 1994; Dichev and Skinner 2002). Also, companies with growth opportunity have stronger incentives to avoid negative earnings surprises (Matsumoto 2002) or to have more discretion in terms of accounting choices (Smith and Watts 1992). Similar to Frankel et al. (2002), I use the market-to-book ratio (denoted by *MB*) to control for firms' growth opportunity. Further, prior research has suggested that firms with strong operating cash flows (denoted by *OCF*) are less likely to employ discretionary accruals to boost earnings (Becker et al. 1998; DeFond and Park 1997).

Jensen (2005) indicates that, when firms are overvalued (i.e., stock prices are higher than their underlying values), managers face high pressure to meet increasingly unrealistic earnings targets. Therefore, they have strong incentives to manage reported performance to try to justify the inflated stock prices. I follow Kothari et al. (2006) by measuring *OVERVALUED* in the following ways. I first compute capitalization quintile cutoffs at the end of April for the sample firms in each year. Based on these cutoffs, I assign all sample firms into size quintile portfolios. Each of these five portfolios is then divided into quintile portfolios based on book-to-market ratio, where book values are taken as of previous fiscal year end and market values are as of the end of the following April. This procedure

yields 25 "benchmark" portfolios. Annual abnormal return for each firm-year is calculated as one-year buy-and-hold return (i.e., twelve months starting on May 1 to ensure that the market has full information about firms' prior year performance) less average annual return of the corresponding benchmark portfolio. Consistent with Jensen's (2005) definition, this annual abnormal return serves as the measure of *OVERVALUED*.

To control for auditor's industry leadership, I follow Hogan and Jeter (1999) by using an indicator variable *LEADER*, which equals one if an auditor's industry expertise falls into the classification presented in Hogan and Jeter (1999), and zero otherwise. Additionally, I include an indicator variable *SHAREINCR* because Rangan (1998) and Teoh et al. (1998) show that managers have incentives to use income-increasing discretionary accruals before seasoned equity offers. Moreover, Becker et al. (1998) shows that managers have incentive to reduce earnings using income-decreasing accruals before share repurchases. Therefore, I also include an indicator variable *SHAREDECR* to control for larger decreases in outstanding shares. Finally, *Lambda* represents the inverse Mills ratios obtained from model (4).

Since variables affecting accrual quality are slightly different from those affecting the other four earnings management measures, I include variable *FEES* into the following model (5-2):

$$ACCQUAL_{i,t} = \alpha_0 + \alpha_1 FEES_{i,t} + \alpha_2 SIZE_{i,t} + \alpha_3 LOSS_{i,t} + \alpha_4 OPCYCLE_{i,t} + \alpha_5 SALESVLT_{i,t} + \alpha_6 LEADER_{i,t} + \alpha_7 Lambda_{i,t} + \varepsilon_{i,t}, \quad (5-2)$$

where

ACCQUAL = The absolute value of the residuals estimated in model (3);

FEES = Natural log of total fees or audit and audit-related fees paid by a company for year *t*'s audit;

SIZE = Natural log of total assets at the end of year *t*;

LOSS = 1 if operating income is less than zero in year *t*, and 0 otherwise;

OPCYCLE = Operating cycle for the firm, measured by $360/(\text{sales}/\text{average account receivables}) + 360/(\text{cost of goods sold}/\text{average inventory})$, where sales is

COMPUSTAT #12, cost of goods sold is COMPUSTAT #41, account receivables is COMPUSTAT #2, and inventory is COMPUSTAT #3;
SALESVLT = Volatility in sales revenue (in millions) measured by the standard deviation in quarterly sales for 20 quarters prior to year t;
LEADER = 1 if the successor (or incumbent) auditor's industry expertise falls into the classification presented in Hogan and Jeter (1999), and 0 otherwise;
LOSS = 1 if operating income is less than zero in year t, and 0 otherwise;
Lambda = Inverse Mills ratio variable from model (4) regression;
 ε = the residual term.

Following Dechow and Dichev (2002), I consider operating cycles (denoted by *OPCYCLE*) and sales volatility (denoted by *SALESVLT*) because longer operating cycles and greater volatility in operating environment (proxied by sales volatility) are generally associated with higher estimation errors of *ACCRUAL_QUALITY*.

To examine the effects of the manager-audit committee economic bond on managers' earnings management behavior, I replace *FEES* by *COMPENSATION* in models (5-1) and (5-2), giving rise to the following models (5-3) and (5-4):

$$\begin{aligned}
 EM\ Measure_{i,t} = & \alpha_0 + \alpha_1 COMPENSATION_{i,t} + \alpha_2 SIZE_{i,t} + \alpha_3 MB_{i,t} + \alpha_4 LEVERAGE_{i,t} \\
 & + \alpha_5 OCF_{i,t} + \alpha_6 OVERVALUED + \alpha_7 LEADER + \alpha_8 SHAREDECR_{i,t} \\
 & + \alpha_9 SHAREINCR_{i,t} + \alpha_{10} Lambda_{i,t} + \varepsilon,
 \end{aligned} \tag{5-3}$$

$$\begin{aligned}
 ACCQUAL_{i,t} = & \alpha_0 + \alpha_1 COMPENSATION_{i,t} + \alpha_2 SIZE_{i,t} + \alpha_3 LOSS_{i,t} + \alpha_4 OPCYCLE_{i,t} \\
 & + \alpha_5 SALESVLT_{i,t} + \alpha_6 LEADER_{i,t} + \alpha_7 Lambda_{i,t} + \varepsilon_{i,t},
 \end{aligned} \tag{5-4}$$

where

COMPENSATION = Natural log of total compensation (including cash retainer, stock awards, and option grants), cash retainer, and equity-based compensation (including stock awards and option grants);

All other variables are the same as those defined in models (5-1) and (5-2).

To test whether managers rely on auditors or audit committees to manage earnings, I will compare the economic significance of *FEES* and *COMPENSATION* using the estimated coefficients $\hat{\alpha}_1$'s from

models (5-1)~(5-4). I will then use the Voung (1989) test to examine whether the difference in the adjusted R^2 between the auditor models (i.e., (5-1) and (5-2)) and the audit committee models (i.e., (5-3) vs. (5-4)) are statistically significant. To empirically estimate the z statistic for the Voung tests, I will follow Dechow's (1994) procedures. Using models (5-1) vs. (5-3) as an example, I will first estimate the residuals of these two models for each observation i , denoted by e_i^{CPA} and e_i^{AC} , respectively. I then compute the residual sum of squares (RSS) of these residual terms, denoted by RSS_{CPA} and RSS_{AC} , respectively. Plugging RSS_{CPA} and RSS_{AC} into the following equation gives rise to m_i for each observation i :

$$m_i = \frac{1}{2} \log \left[\frac{RSS_{CPA}}{RSS_{AC}} \right] + \frac{n}{2} \left[\frac{(e_i^{CPA})^2}{RSS_{CPA}} - \frac{(e_i^{AC})^2}{RSS_{AC}} \right]. \quad (6)$$

The z statistic can be obtained by multiplying the t statistic obtained from regressing m_i on unity by $((n-1)/n)^{1/2}$. Because a positive (negative) z statistic implies that the residuals produced by the auditors' regression (i.e., model (5-1)) are larger (smaller) in magnitude than those from the audit committee regression (i.e., model (5-3)), a positive (negative) and significant z statistic thus indicates that managers rely on audit committees (auditors) to manage earnings.

Note that the Voung test is a non-nested model selection technique testing the null hypothesis that both the auditors' and the audit committees' models are equally close to explaining managers' earnings management behavior against the alternative hypothesis that one model is closer than the other. Therefore, models (5-1) vs. (5-3) and models (5-2) vs. (5-4) are set up as competing models to explain earnings management. In other words, my model setting implicitly assumes that auditors and audit committees exercise their oversight duties independently.

2.4 Data and Sample Selection:

To control for the potential effects of omitted variables on the statistical analyses and ensure that auditors and audit committees are both subjected to the SOX provisions, I focus on the S&P 1,500

companies during fiscal year 2006 and 2009. First, each company's auditor will be identified using the *Audit Analytics* database. Second, I hand-collect audit committees' compensation packages, background, and membership overlapping information from sample companies' Form DEF 14A using the EDGAR database. Similar to Adams and Ferreira (2008), I exclude meeting fees from my compensation variables because they are viewed as an opportunity cost of attending a meeting and, thus, are not similar to annual compensation. Third, I obtain financial information for all companies from the COMPUSTAT annual industrial and research files. Companies with missing data will be eliminated. Finally, to control for outlier problem, I trim observations that fall in the top and bottom 1 percent of the empirical distribution for both the dependent and independent variables (Bulter et al. 2004; Fan and Wong 2005).

3. EMPIRICAL RESULTS

The basic empirical results are reported in Tables 1~3. A complete set of tables are available upon request from the author after 1 year.

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Table 1
Sample Selection

2006-2009 S&P 1,500 hand-collected director compensation with fiscal year ended 12/31.	3,008
Less: Number of firm-observations not in Audit Analytics	(11)
Number of firm-observations not in CRSP	(244)
Number of firm-observations not in Compustat	(435)
Trim observations that fall in the top and bottom 1% of the empirical distribution for both the dependent and independent variables	(23)
Year-Industry combinations with less than 8 observations	<u>(306)</u>
Final Sample	<u>1,989</u>

Table 2
Descriptive Statistics

Variable	N	Mean	Std Dev	Min	Q1	Median	Q3	Max
DA	1,989	-0.01	0.07	-0.52	-0.04	0.00	0.03	0.39
REALEM	1,954	0.00	0.27	-1.31	-0.14	0.01	0.13	1.43
ACCQUAL	1,989	0.02	0.15	-0.89	-0.03	0.02	0.09	1.30
BIG4	1,989	0.95	0.23	0.00	1.00	1.00	1.00	1.00
ROA	1,989	0.05	0.10	-0.92	0.02	0.05	0.10	0.80
LOSS	1,989	0.16	0.37	0.00	0.00	0.00	0.00	1.00
M&A	1,989	0.19	0.39	0.00	0.00	0.00	0.00	1.00
GROWTH	1,989	0.01	0.03	-0.17	0.00	0.01	0.02	0.41
INDSHARE	1,989	0.29	0.15	0.00	0.18	0.30	0.39	0.65
FEES	1,989	14.76	0.97	12.24	14.06	14.66	15.40	18.09
CASH	1,989	2.48	0.23	0.00	2.47	2.51	2.54	2.63
EQUITY	1,989	11.83	2.90	0.00	11.82	12.53	13.04	15.21
SIZE	1,989	7.73	1.54	4.00	6.58	7.59	8.76	12.51
MB	1,989	2.79	3.01	0.14	1.43	2.07	3.23	71.95
LEVERAGE	1,989	0.23	0.21	0.00	0.06	0.22	0.35	3.16
OCF	1,989	0.12	0.09	-0.71	0.07	0.11	0.17	0.82
OVERVALUE	1,989	0.00	0.35	-1.38	-0.20	-0.04	0.14	4.11
LEADER	1,989	0.12	0.32	0.00	0.00	0.00	0.00	1.00
SHAREDECR	1,989	0.03	0.17	0.00	0.00	0.00	0.00	1.00
SHAREINCR	1,989	0.10	0.30	0.00	0.00	0.00	0.00	1.00

Table 3
Economic Bonding Effect between Audit Committees and Auditors

Variable	First Stage		Second Stage																	
	Auditor Choice		DA						REM_Index						ACCQUAL					
	Coeff.	P> t	AC_Cash	Auditor	AC_Equity	AC_Cash	Auditor	AC_Equity	AC_Cash	Auditor	AC_Equity	AC_Cash	Auditor	AC_Equity						
Intercept	6.753	0.97	0.035	0.23	0.155	0.00	0.052	0.05	0.087	0.44	0.164	0.31	0.122	0.24	0.130	0.02	0.154	0.06	0.069	0.17
SIZE	-0.801	0.03	-0.002	0.17	0.005	0.03	-0.001	0.33	-0.003	0.50	0.000	0.96	-0.003	0.52	-0.002	0.31	0.002	0.62	-0.003	0.27
ROA	10.111	0.01																		
M&A	0.834	0.33																		
GROWTH	-10.746	0.37																		
INDSHARE	104.900	0.00																		
FEES				-0.012	0.00					-0.004	0.73					-0.008	0.21			
CASH			0.001	0.90					0.019	0.44					-0.030	0.03				
EQUITY						-0.002	0.00					0.000	0.98						0.000	0.79
LOSS														-0.123	0.00	-0.121	0.00	-0.122	0.00	
MB			-0.001	0.36	0.000	0.42	-0.001	0.37	-0.010	0.00	-0.010	0.00	-0.010	0.00	-0.004	0.00	-0.004	0.00	-0.004	0.00
LEVERAGE			-0.017	0.04	-0.020	0.02	-0.016	0.06	0.106	0.00	0.105	0.00	0.106	0.00	-0.009	0.59	-0.011	0.49	-0.009	0.55
OCF			-0.178	0.00	-0.188	0.00	-0.178	0.00	-1.078	0.00	-1.083	0.00	-1.080	0.00	0.110	0.00	0.109	0.01	0.115	0.00
OVERVALUE			-0.022	0.00	-0.022	0.00	-0.023	0.00	-0.006	0.74	-0.006	0.73	-0.006	0.73	-0.009	0.31	-0.009	0.31	-0.009	0.31
LEADER			0.008	0.16	0.009	0.12	0.009	0.15	0.020	0.35	0.020	0.35	0.020	0.35	-0.001	0.92	-0.001	0.95	-0.001	0.92
SHAREDECR			-0.009	0.36	-0.009	0.34	-0.007	0.44	-0.014	0.70	-0.013	0.71	-0.013	0.71	-0.118	0.00	-0.120	0.00	-0.120	0.00
SHAREINCR			-0.005	0.34	-0.005	0.31	-0.005	0.35	-0.008	0.70	-0.008	0.69	-0.008	0.70	0.119	0.00	0.119	0.00	0.119	0.00
LAMBDA			0.001	0.91	0.000	0.99	0.001	0.96	0.102	0.04	0.102	0.04	0.102	0.04	-0.027	0.30	-0.028	0.28	-0.027	0.30
Fixed Effects	Included		Included		Included		Included		Included		Included		Included		Included		Included		Included	
N	1,989		1,989		1,989		1,989		1,954		1,954		1,954		1,989		1,989		1,989	
F-Stat			4.14		4.50		4.41		10.12		10.10		10.10		15.88		15.76		15.70	
Pseudo/Adj. R ²	0.327		0.052		0.058		0.057		0.141		0.140		0.140		0.212		0.211		0.210	
Vuong Test (Z-Stat)				1.562		0.336				-0.312		0.154				-0.588		0.575		

How Do Companies React to Restatements? – Evidence from Audit Committee Compensation*

Hung-Chao Yu**
Department of Accounting
College of Commerce
National Chengchi University
hju@nccu.edu.tw

Yu-Chun Lin
Department of Accounting
College of Commerce
National Chengchi University
95353503@nccu.edu.tw

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**Corresponding author: Department of Accounting, College of Commerce, National Chengchi University, No. 64, Sec. 2, Tze-nan Rd., Wenshan District, Taipei 11605, TAIWAN, R.O.C.; (O) 011-886-2-2938-7693; (F) 011-886-2-2938-7113; Email: hju@nccu.edu.tw.

How Do Companies React to Restatements?

– Evidence from Audit Committee Compensation

Abstract

This study documents that companies react to financial reporting failures reported in restatements by adjusting cash and equity-based (including stocks and options) compensation paid to their audit committees. Such adjustments enhance audit committees' independence and, therefore, their oversight effectiveness. We first show that larger equity-based compensation (especially restricted stocks and long-term options) are more likely to be associated with higher restatements likelihood. We then show that restating companies reduce (increase) the amounts and portions of equity-based (cash) compensation specifically for audit committees but not for CEOs and other board members. Based on the extent of economic bond stocks and options create to the audit committees, we further decompose equity-based compensation into strong (including restricted stocks and long-term options) and weak (including unrestricted stocks and short-term options) economic bond groups. The empirical results show that restating companies reduce more amounts and portions of strong bonding compensation only. Overall, these provide evidence that companies perceive equity-based compensation to be insidious to audit committees' independence and reduce such incentives following restatements. Finally, we show that the SEC's 2006 Rule mandating public disclosures of board compensation encourages restating companies to reduce larger amounts and portions of equity-based compensation, possibly because this Rule creates a vehicle by which restating companies can signal their determination to enhance the quality of financial reporting through the improvement of audit committee independence.

JEL classification: M41, G14

Keywords: Audit committee, Compensation, Economic bond, Restatements.

Data Availability: The data used in this paper are available from public filings and databases.

1. INTRODUCTION

Restatements have received much attention by securities regulators and the auditing academics because restatements by themselves represent an acknowledgement that companies' financial statements are not in accordance with GAAP (Baldwin and Yoo 2005; Burks 2011; Desai et al. 2006; GAO 2006; Grothe et al. 2006; Lev et al. 2008; Palmrose et al. 2004; Palmrose and Scholz 2004; PCAOB 2007; Scholz 2008). Based on this notion, the Public Oversight Board's Panel of Audit Effectiveness (2000) and GAO (2002) suggest the use of the number of restatements as an indicator of corporate financial reporting quality. Using restatements announced before the passage of Sarbanes-Oxley Act (SOX), prior research has documented negative economic consequences such as downward market reactions (e.g., GAO 2003; Hennes et al. 2008; Lev et al. 2008; Palmrose et al. 2004), increased cost of equity capital (e.g., Hribar and Jenkins 2004) and going-concern risk (e.g., Palmrose and Scholz 2004), and decreased future earnings (e.g., Ahmed and Goodwin 2007) and efficiency in analyzing financials due to investor confusion (CIFR 2008; Paulson 2007; Scholz 2008).¹

More recent studies turn attention to actions restating companies take to respond to the credibility impairment of their financial statements. For example, Desai et al. (2006) and Files et al. (2009) report that restatements are often followed by higher CEO/CFO turnovers. Cheng and Farber (2008) shows that the portions of extant and newly hired CEOs' option compensation decline in the two years following restatements. Wilson (2008) indicates that restating companies tend to dismiss their auditors to obtain higher audit quality. Farber (2005) and Srinivasan (2005) find that outside directors are more likely to be discharged following restatements. Different from these studies, we test whether restating companies reduce equity-based compensation (i.e., stocks and options) paid to their audit committees (ACs) with an aim to improve independence, therefore increasing ACs' oversight effectiveness.²

¹Burks (2011) uses stock returns and trading volumes to show that investors are not confused by post-SOX restatements.

²While prior research generally uses the insider vs. outsider dichotomy to proxy for audit committee independence, we extend this view by examining the objectivity of audit committee members (who are all outside directors) in overseeing

Our research question is important for three reasons. First, changing CEO/CFO or discharging outside directors following restatements could be practically infeasible to most restating companies because qualified candidates for serving CEO/CFO and outside directors are generally limited due to regulatory requirements on their expertise and independence. This infeasibility problem becomes more prominent after SOX in light of the ever-increasing numbers of restatements from 613 companies in 2004 to 1,195 companies in 2005 and 1,876 companies in 2006 (Audit Analytics 2007; GAO 2006; Grothe et al. 2006; PCAOB 2007). Moreover, even though restating companies are more likely to reduce the proportions of CEOs' option compensation, such reduction may not necessarily lead to improved financial reporting quality because CEOs generally do not play a governance role in companies' financial reporting processes. Also, the extent of reduction in options may be restricted due to the frequent occurrence of restatements after SOX and the passage of the revised SFAS No. 123 in December 2004, which requires the expense of option grants to employees.

Second, dismissing incumbent auditors also appears to be less feasible to many restating companies because auditor changes usually incur huge switching costs (Blouin et al. 2007). Importantly, prior studies have shown that new successor auditors are less capable of detecting clients' earnings management (e.g., Ghosh and Moon 2003; Johnson et al. 2002; Myers et al. 2003) and frauds (e.g., Carcello and Nagy 2004), and tend to issue wrong audit opinions when clients have going concern problems (e.g., Geiger and Raghunandan 2002). On the other hand, if restating companies dismiss their incumbent auditors with an aim to signal improvement in financial reporting quality (Plitch and Wei 2004), it appears that only changes from non-Big4 to Big 4 can achieve such signaling goal. This is because auditing literature has consistently documented that Big 4 are associated with higher audit quality than non-Big 4 (e.g., Becker et al. 1998; Behn et al. 2008; Craswell et al. 1995; Davidson and Neu 1993; DeAngelo 1981; DeFond and Jiambalvo 1991; Francis et al. 1999; Khurana

companies' financial reporting process when their compensation types create conflicts that may induce them to compromise independence.

and Raman 2004; Mansi et al. 2005; Palmrose 1986, 1988). Since the other three types of auditor dismissals (i.e., changes within Big4, changes within non-Big4, and changes from Big4 to non-Big4) may not create the desired signaling value to the restating companies, the efficacy of dismissing incumbent auditors after restatements could be weakened.³

Finally, ACs have long been regarded as a vital mechanism to enhance the transparency and integrity of financial reporting (COSO 1992; Public Oversight Board 1993; Blue Ribbon Committee 1999). SOX further expands ACs' responsibilities to assure that financial statement accurately portray companies' economic activities (Laux and Laux 2009). Effective ACs impose greater demand on internal monitoring (Carcello and Neal 2003; Klein 2002a, 2002b) and external auditors in detecting misstatements, leading to improved earnings quality (Beasley et al. 2009; Bedard et al. 2004; Srinivasan 2005) and less likelihood of restatements (Abbott et al. 2004). Therefore, enhancing ACs' oversight effectiveness appears to be a more feasible and less costly way to increase financial reporting quality than changing CEO/CFO and auditors.⁴

Two research questions are examined in sequence to ascertain the credibility of our prediction that restating companies reduce stocks and options paid to their ACs. The first research question tests whether equity-based compensation threatens AC independence, resulting in higher likelihood of oversight failure reported in restatements. We focus on equity-based compensation because the National Association of Corporate Directors (NACD 2001, 2003) currently promotes the use of such type of compensation for directors (Archambeault et al. 2008; Magilke et al. 2009). Also, large U.S. companies have increased the use of stocks and options to compensate their non-executive directors, of which ACs are formed (Taub 2005; Winikoff 2006). Since there is an increasing disparity between

³Recent studies report that upgrade (downgrade) auditor changes account for less than 9% (more than 50%) of all auditor dismissals occurred after SOX (e.g., Carver et al. 2011; Ettredge et al. 2007; Owens-Jackson et al. 2008).

⁴Audit committees have been discussed and examined by securities regulators, practitioners, and auditing academics in the past decade (e.g., Abbott et al. 2004; Beasley et al. 2009; Carcello and Neal 2003; Carcello et al. 2011; DeFond et al. 2005; Dhaliwal et al. 2010; Karamanou and Vafeas 2005; Klein 2002a, 2002b; Krishnan 2005; Srinivasan 2005). See DeZoort et al. (2002) for a comprehensive review of early research in audit committees.

cash vs. equity-based compensation in recent years (Winikoff 2006), regulators and the press have expressed serious concerns as to whether equity-based compensation impairs AC independence (e.g., Barrier 2002; Millstein 2002; *New York Times* 2007; Financial Reporting Council 2003; *Wall Street Journal* 2006). Archambeault et al. (2008) addresses this issue by showing that both short-term and long-term options are associated with higher restatement likelihood. Our study differs from Archambeault et al. (2008) in that, instead of focusing on options alone using pre-SOX restatements, we consider the differential effects of cash, stocks, and options and examine how these three components' dollar amounts, relative weights, and specific provisions associated with stocks (i.e., restricted vs. non-restricted) and options (i.e., short-term vs. long-term) affect ACs' independence using post-SOX restatements. Based on a sample of 2,381 S&P 500 companies announcing restatements during 2003 through 2009,⁵ we find that the larger the amounts and portions of restricted stocks and long-term options in the compensation packages, the higher the restatement likelihood.⁶ Notably, companies paying more cash or having a larger portion of cash in the compensation packages are less likely to incur restatements.

Our second research question tests whether restating companies react to restatements by reducing the amounts and/or relative weights of equity-based compensation to enhance AC independence. We apply the differences-in-differences method (Bertrand and Mullainathan 1999, 2003; Low 2009) to a sample of 1,804 S&P 500 companies announcing restatements between 2003 and 2009. The empirical results indicate that restating companies increase the amounts of cash and decrease the amounts and portions of equity-based compensation for ACs only. There are no significant changes in amounts and

⁵Prior studies have investigated equity-based compensation in areas such as the differential incentive effects of stocks and options on managers' behavior (e.g., Carpenter 2000; Ross 2004), short-term and long-term compensation on the monitoring of the boards (e.g., Dalton et al. 2003; Hillman and Dalziel 2003), and the choice between stocks and options (e.g., Kadan and Swinkels 2008). We do not explore or consider these issues. Rather, we regard stocks and options as two major components of equity-based compensation and test whether they individually harm audit committee independence.

⁶Hennes et al. (2008) classifies restatements as either errors or irregularities and reports that market reaction to restatements due to irregularities is more negative than restatements due to errors. While market participants may perceive errors and irregularities differently, it is the audit committees' responsibility to oversee both types of misstatements. Therefore, we do not distinguish errors and irregularities reported in the restatements.

portions of cash and equity-based compensation paid to the CEOs and board members other than the ACs and CEOs following restatements. These findings provide evidence that restating companies adjust compensation packages specifically for their ACs. This is consistent with recent trend that many companies set differentiating compensation levels among audit, compensation, and nomination committees to reflect their different workloads (Koors 2006; Tovar and Newbury 2010). Also, the increase in cash payments following restatements is consistent with Engel et al.'s (2010) finding that companies pay more cash to their ACs because of the increased demand for monitoring (which, in our context, results from the occurrence of restatements).

To provide sharper evidence that restating companies perceive that equity-based compensation really jeopardizes ACs' independence and are more willing to reduce its amounts and portions, we focus on equity-based compensation and decompose it into two sub-groups: *strong economic bond* and *weak economic bond*. Since restricted stocks (which are not fully transferable until certain conditions are met in the future) and long-term options (which cannot be exercised within 1 year) tend to tie AC members' wealth for a longer period, they may create stronger economic bond that is more likely to harm ACs' independence. This classification is also consistent with our finding that larger amounts and portions of restricted stocks and long-term options are associated with higher restatements likelihood. In contrast, we classify unrestricted stocks and short-term options as having weaker economic bond. We then run differences-in-differences regression on these two sub-groups and find that restating companies reduce larger amounts and portions of strong economic bond equity compensation only. No significant changes are found in weak economic bond equity compensation following restatements.

As a supplementary test, we examine whether restating companies' adjustments of equity-based compensation are more prominent after the SEC's 2006 Mandatory Compensation Disclosure Rule. Because this Rule mandates all companies to publicly disclose their boards' compensation, it provides

restating companies a good chance to “visibly” signal the improvement of their financial reporting quality through the changes of amounts and portions in cash and equity-based compensation. We use 2006 as the cut-off year and run differences-in-differences regressions on the pre-2006 and post-2006 groups. The empirical results show that the amounts and portions increase in cash and decrease in strong economic bond equity-based compensation, regardless of this disclosure Rule. However, the amounts of weak economic bond equity-based compensation also increase after 2006. These suggest that the SEC’s disclosure Rule appears to indirectly enhance ACs’ independence by motivating restating companies to reduce larger amounts and portions of equity-based compensation.

In practice, AC members mostly have their own full-time jobs. Therefore, the compensation they receive for serving on the ACs may not constitute a major portion in their total wealth. This raises the concern as to whether AC compensation creates a first-order effect on restatement likelihood. This concern can be addressed by the following explanation. Since SOX extends ACs’ workload and liabilities, companies have to pay sufficiently high compensation to motivate AC members to exert sufficiently high effort to fulfill their oversight role. If the compensation level cannot create a first-order effect on financial reporting quality, ACs will become merely a specious mechanism without any real monitoring substance.

The remainder of this paper is organized as follows. Section 2 discusses relevant literature and develops the hypotheses to be tested. Section 3 describes the sample selection procedure and research design. Section 4 reports the empirical results and their policy implications. The paper concludes with a summary of findings in Section 5.

2. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

2.1 Association between Equity-based Compensation and Audit Committee Independence:

While prior studies have examined ACs in various aspects, few attempts have been made to examine the association between ACs’ compensation and their independence. Because of a lack of

theory in the literature that can explain this association, predicting the signs of stocks and options is not as straightforward as it might seem. Specifically, even though the agency theory suggests that equity-based compensation aligns board directors' monitoring incentives with the shareholders (e.g., Dalton et al. 2003; Hillman and Dalziel 2003; Monks and Minow 2001), this prediction may not be applicable to ACs because the conflicting roles ACs play to manage business operations and oversee board decisions simultaneously (Ezzamel and Watson 1997; Magilke et al. 2009). Two recent studies have examined AC compensation issues from different perspectives. Archambeault et al. (2008) tests whether options for ACs are associated with pre-SOX restatement likelihood and finds a positive relation for both short-term and long-term options. They argue that their results emerge because short-term options induce AC members' short-term orientation that possibly undermines their independence, while long-term options are highly uncertain that the payoffs may be too small to induce AC members to monitor financial reporting effectively. In contrast, Engel et al. (2009) finds that firms are more likely to structure AC compensation toward a fixed pay when there is a high demand for monitoring. Notably, the level of AC compensation increases after SOX.

Prior studies agree that it is the strength of the economic bond between the auditors and the firms that reduces auditor independence (e.g., DeAngelo 1981; Beck et al. 1988; Magee and Tseng 1990). Since the logic for maintaining auditor independence is the same as that for ACs (Magilke et al. 2009), it seems rational to apply this economic bond notion to the ACs. If high economic bond harms auditor independence, it seems reasonable to infer that high economic bond also harms audit committee independence because audit committee members' wealth is tied closely with firms' reported performance. Based on this economic bond notion, we predict that equity-based compensation increases the economic dependence of audit committees on the managers and, thus, creates vested interests to the audit committees in that they may sacrifice their oversight objectivity. If high economic bond harms auditor independence, it seems reasonable to infer that high economic bond also harms AC

independence. Based on this economic bond notion, we predict that equity-based compensation increases the economic dependence of ACs on the managers because AC members' wealth is tied closely with firms' reported performance. Economic bond thus creates vested interests to the ACs in that they may sacrifice their oversight objectivity. Following prior research in auditor independence (e.g., Ashbaugh et al. 2003; Frankel et al. 2002), we use the dollar amounts and percentages of stocks and options in ACs' compensation packages to measure economic bond and predict a positive association between equity-based compensation, especially those with stronger economic bond, and restatement likelihood.

In a recent experimental study, Magilke et al. (2009) finds that students serving as AC members are least biased when there is no stock-based audit committee compensation. This suggests that if the ACs are paid in cash, financial reporting quality shall improve. Furthermore, prior research shows that audit committee independence is associated with stronger monitoring (e.g., Carcello and Neal 2003; Klein 2002a, 2002b) and firms having a higher demand for monitoring of the financial reporting process pay more cash to their audit committees (Engel et al. 2010). Since the AICPA claims that cash-only compensation enhances auditor independence and thus leads to improved financial reporting quality (AICPA 1972), it is reasonable to apply this theory to ACs and assume that increasing the amounts and portions of cash compensation for ACs may improve AC independence. Taken together, the above discussions give rise to the following three sets of hypotheses:

(1) Dollar amount effects:

Hypothesis 1: *The restatement likelihood is positively associated with the amounts of equity-based compensation paid to the audit committees.*

Hypothesis 2: *The restatement likelihood is negatively associated with the amounts of cash compensation paid to the audit committees.*

(2) Economic bond effects:

Hypothesis 3-1: *The association between restatement likelihood and the amounts of*

equity-based compensation is stronger when such compensation creates stronger economic bond to the audit committees.

Hypothesis 3-2: *The association between restatement likelihood and the portions of equity-based compensation is stronger when such compensation creates stronger economic bond to the audit committees.*

(3) Percentage effects:

Hypothesis 4-1: *The restatement likelihood is positively associated with the portions of equity-based compensation in audit committees' compensation packages.*

Hypothesis 4-2: *The restatement likelihood is negatively associated with the portions of cash compensation in audit committees' compensation packages.*

Our study differs from recent studies in the following ways. First, Archambeault et al. (2008) does not consider the differential effects of the amounts and portions of cash, stocks, and options on ACs' oversight effectiveness. This issue is important because regulators will know how to govern ACs' compensation practice only when academic research provides evidence about the relative effects of the three compensation components on ACs' oversight effectiveness. In addition, because ACs' risk (Linck et al. 2009) and conservatism (DeZoort et al. 2008) have both increased after SOX, and the basic nature of restatements has also changed after SOX (Hannes et al. (2010), the adverse effects of options observed in the pre-SOX period may or may not persist in the post-SOX period. Therefore, our test of post-SOX restatements shall provide new evidence that may better capture the association between equity-based compensation and ACs' oversight effectiveness under the new regulatory environment. This is consistent with Carcello et al.'s (2011) suggestion that it is important to have a theoretical motivation for post-SOX studies where similar issues have already been investigated in the pre-SOX period. Second, Engel et al. (2010) does not explicitly test whether and how different types of compensation affect ACs' oversight functions. Our study thus contributes to the auditing literature by providing a first-step understanding of the association between ACs' compensation and their oversight effectiveness, and how such association affects the quality of financial reporting.

2.2 Companies' Actions after Restatements:

Several recent studies use pre-SOX restatements to show that restating companies may change CEO/CFO (e.g., Desai et al. 2006; Files et al. 2009), reduce CEOs' option compensation (e.g., Cheng and Farber 2008), dismiss incumbent auditors (e.g., Wilson 2008), and discharge outside directors (e.g., Farber 2005; Srinivasan 2005) following restatements. However, since pre- and post-SOX restatements tend to be caused by different types of misstatements (Hennes et al. 2008) and there were substantial increases in restatements after SOX, actions taken by restating companies could also change in the post-SOX period. For example, Collins et al. (2005) shows that half of the restating companies take little or no action to penalize their top management in the post-SOX period. Our study contributes to the AC and restatement literature in two aspects. First, we test whether restating companies reduce the amounts and portions of equity-based compensation, especially those creating stronger economic bond, with an aim to enhance AC independence. Second, because restating companies shall have higher demand for monitoring over their financial reporting and Engel et al. (2010) reports that companies demanding more monitoring are more likelihood to pay cash to their ACs, we test whether restating companies will increase the amounts and portions of cash in ACs' compensation packages. We thus form the following three sets of hypotheses:

(1) Increase / decrease dollar amounts:

Hypothesis 5: *Companies restating their financial statements will increase the amounts of cash compensation paid to the audit committees.*

Hypothesis 6: *Companies restating their financial statements will decrease the amounts of equity-based compensation paid to the audit committees.*

(2) Economic bond consideration:

Hypothesis 7-1: *Companies restating their financial statements will decrease more amounts of equity-based compensation when such compensation creates stronger economic bond to the audit committees.*

Hypothesis 7-2: *Companies restating their financial statements will decrease higher portions of equity-based compensation when such compensation creates*

stronger economic bond to the audit committees.

(3) Increase / decrease percentages:

Hypothesis 8: *Companies restating their financial statements will increase the portions of cash compensation in audit committees' compensation packages.*

Hypothesis 9: *Companies restating their financial statements will decrease the portions of equity-based compensation in audit committees' compensation packages.*

3. RESEARCH DESIGN

3.1 Data and Sample Selection:

The original sample consists of 3,500 S&P 500 firm observations during 2003 and 2009. We use restatements coded in Audit Analytics to identify companies that restate their financial statements during the sample period. Five hundred and ninety-five financial institutions (SIC codes 6000-6999) are excluded because of their unique operating environment and accounting practices. Each sample firm's financial data are collected from COMPUSTAT. Three hundred and fifty-one observations are excluded due to incomplete financial data. We then hand-collect ACs' compensation packages and background information from Form DEF 14A using the EDGAR database. One hundred and seventy-three observations are eliminated due to missing compensation data. Three major compensation components are examined: *cash retainer*, which does not include meeting fees; *stock awards*, which include common stock with and without restrictions, deferred stock units, and phantom stock units; *option grants*, which include short-term and long-term stock options. The value of stocks is determined by multiplying the number of shares awarded by the closing price. Following Brick et al. (2006) and Core et al. (1999), we compute the value of options using the 25 percent of their exercise price or the closing market price on the annual meeting date if exercise price is not available. We exclude meeting fees because they are often viewed as opportunity costs of attending meetings (Adams and Ferreirs 2008). Also, an exclusion of meeting fees avoids a potential mechanical relation with the meeting times (Engel et al. 2010), one of the key control variables in our regression models. The above

procedures give rise to a sample consisting of 2,381 firm observations available for testing the association between equity-based compensation and restatement likelihood.

To test our second research question, we further eliminate 220 observations involving duplicate or repeating restatements and 234 observations that do not pay equity-based compensation to their ACs. Prior work indicates that restatements are often followed by substantial turnovers in ACs (e.g., Srinivasan 2005). Instead of controlling for the magnitude of AC turnover in our empirical models, we choose to drop 123 observations that have AC turnovers following restatements. This screening procedure ensures that companies in our sample do not use the discharge of AC members to react to restatements. Therefore, the same AC members will face different compensation packages before and after the restatements, leading to a cleaner sample based on which we can test whether restating companies adjust the amounts and portions of cash and equity-based compensation paid to the same AC members. Note that we add back 173 firm observations that are eliminated in testing our first research question due to missing compensation data. We do so because detailed provision information related to stocks and options is not needed in testing our second research question. These procedures lead to a sample of 1,977 firm observations for testing whether restating companies adjust equity-based compensation paid to their ACs.

Since AC is part of the board of directors, it is possible that restating companies adjust compensation packages for their entire boards rather than for the ACs alone. To control for board compensation structure, we decompose a restating company's total compensation into six distinct categories based on its forms (i.e., cash vs. equity-based) and member types (i.e., AC vs. CEO vs. board members other than AC and CEO). We then use these six compensation categories as the dependent variables to show whether the adjustments in equity compensation is specifically due to ACs or the boards' compensation policy in general. We collect compensation data for CEOs and board members other than ACs and CEOs from EXECUCOMP. Table 1 summarizes the sample selection.

[Insert Table 1 here]

3.2 Test of Association between Equity-based Compensation and Restatement Likelihood:

To examine whether companies offering more equity-based compensation to their ACs are more likely to restate their financial statements, we follow Archambeault et al. (2008), Efendi et al. (2007), and Palmrose et al. (2004) by estimating the following logistic model:

$$\begin{aligned} RESTATED_{i,t} = & \alpha_0 + \beta_1 LnASSET_{i,t} + \beta_2 BIG4_{i,t} + \beta_3 GOING_{i,t} + \beta_4 M \& A_{i,t} \\ & + \beta_5 ZSCORE_{i,t} + \beta_6 ROA_ind_{i,t} + \beta_7 SALESGROWTH_{i,t} + \beta_8 ACSIZE_{i,t} \\ & + \beta_9 MEETINGTIMES_{i,t} + \beta_{10} ACCEXPERTISE_{i,t} \\ & + \beta_{11} CEO \text{ Compensation Variables}_{i,t} \\ & + \beta_{12} Audit \text{ Committee Compensation Variables}_{i,t} + \varepsilon_{i,t} \end{aligned} \quad (1)$$

where the definitions of all the variables are summarized in the Appendix.

In Model (1), we use the dollar values and relative weights of cash, stocks and options in ACs' compensation packages to test how the amounts and portions of various compensation components affect restatement likelihood. We refer to these two constructs as the *magnitude* and *percentage* approaches, respectively. We also introduce industry fixed effects and year fixed effects as controls for unobserved firm-level heterogeneity (Bowen et al. 2010; Linck et al. 2009).

3.2.1 Dependent variable

The dependent variable, *RESTATED*, is a dummy variable that equals 1 if a company's year *t* financial statements are restated and 0 otherwise. Instead of using whether or not companies announce restatements in year *t*, our measure of *RESTATED* provides a more appropriate test of the association between ACs' compensation and restatement likelihood because outside directors serving on year *t*'s ACs are responsible for overseeing year *t*'s financial statements and receive year *t*'s compensation. The use of restatement announcement year will mismatch the year ACs exercise their oversight responsibility and the year they receive compensation. We thus use *RESTATED* to proxy for ACs' oversight effectiveness and predict that equity-based compensation is associated with higher likelihood

of subsequent restatements.

3.2.2 Firm characteristics

In model (1) we include major firm characteristics that are likely to affect the likelihood of restatements. Similar to previous studies (e.g., Dechow et al. 1996; Richardson et al. 2002; Desai et al. 2006), we control for company size (denoted by *LnASSET*) and predict its coefficient to be negative because size might capture firm-specific risk (Fama and French 1995) and larger companies are more likely to be subjected to closer scrutiny by regulators and investors (Balsam et al. 2003; Romanus et al. 2008). Also, controlling for size can potentially mitigate the problem of correlated omitted variables (Myers et al., 2005; Ahmed and Goodwin 2007).

Farber (2005) reports a smaller proportion of brand-name audit firms in fraud companies compared with control companies. Therefore, we include Big 4 CPA firms (denoted by *BIG4*) to control for audit firm quality (Carcello et al. 2011) and predict its coefficient to be negative. In addition, companies receiving going concern opinions are more likely to restate their financial statements afterwards (DeFond and Jiambalvo 1991; Kinney and McDaniel 1989; Sennetti and Turner 1999). Hence, we include going concern opinion as an indicator variable (denoted by *GOING*) and predict its coefficient to be positive.

Empirical evidence has shown that mergers and acquisitions may increase the probability of restatements due to new, difficult, or contentious accounting issues, and possible business integration problems (Kinney et al. 2004; Efendi et al. 2007; Stanley and DeZoort 2007; Carcello et al. 2011). As a result, we control for a company's merger and acquisition activities (denoted by *M&A*) and predict its coefficient to be positive.

Since financial condition usually affects the likelihood of restatement (Abbott et al. 2004; DeFond and Jiambalvo 1991; Kinney and McDaniel 1989), we control for this characteristic using two proxies: *ZSCORE* and *ROA_ind*. We consider *ZSCORE* because Palmrose and Scholz (2004) shows that

companies restating core earnings have higher frequencies of subsequent bankruptcy and Abbott et al. (2004) uses Z scores as an indicator of financially distressed companies. By definition of the Z scores, we predict the coefficient of *ZSCORE* to be negative. We also consider industry-median-adjusted return on assets (denoted by *ROA_ind*) and predict its coefficient to be negative because prior studies show that more profitable companies are less likely to restate due to weaker incentives of manipulating earnings (e.g., Ettredge et al. 2010; Kinney and McDaniel 1989; Loebbecke et al. 1989; Scholz 2008).

We control for three determinants that may influence the oversight effectiveness of ACs: *ACSIZE*, *MEETINGTIMES*, and *ACCEXPERTISE*. We consider *ACSIZE* because larger ACs are perceived to have increased power (Chen and Zhou 2007; Kalbers and Fogarty 1993) and are more likely to challenge top management and internal control personnel in fulfilling their monitoring responsibilities (Goh 2009; Krishnan 2005). We also consider *MEETINGTIMES* to capture ACs' effort (Engel et al. 2010) because more diligent ACs are more likely to effectively exercise their oversight duties (DeZoort et al. 2002) so that they can remain informed of accounting and auditing issues (Raghunandan et al. 2001). Finally, prior research has shown that it is the accounting expertise, rather than the broadly-defined financial expertise, that improves ACs' oversight effectiveness (e.g., Archambeault and DeZoort 2001; Bédard et al. 2004; Goh 2009; Krishnan 2005; Krishnan and Visvanathan 2008; Raghunandan et al. 2001). Recent studies further examine whether narrowly-defined accounting and finance expertise individually contributes to ACs' monitoring activities (e.g., Dhaliwal et al. 2010; Engel et al. 2010; Goh 2009). Following DeFond et al. (2005), we measure *ACCEXPERTISE* by the percentage of AC members having accounting expertise only.⁷ Accounting experts are members who have CPA licenses or with accounting-related experience (e.g., accountants, auditors, controllers, or

⁷Engel et al. (2010) categorizes four types of financial reporting expertise for the selection of audit committee chairs: non-financial director, finance financial expert, general accounting financial expert, and accounting expert with Big4 employment experience. Their classifications of finance and accounting expertise are narrower than those of the proposed and final SEC rules. Because accounting expertise is not a major test variable in our study, we adopt a simplified classification used by DeFond et al. (2005).

chief accounting officers). Since more specialized skills in accounting contribute more to ACs' oversight effectiveness (Agrawal and Chadha 2005; DeFond et al. 2005; McDaniel et al. 2002), we predict the coefficient of *ACCEXPERTISE* to be negative.

3.2.3 CEO compensation variables

We include *STOCK_CEO* and *OPTION_CEO* (measured by the natural logs of stocks and options paid to the CEOs, respectively) under the magnitude approach and predict their coefficients to be positive because recent studies show that CEO equity compensation, especially options, influences the likelihood of restatements (e.g., Efendi et al. 2007; Burns and Kedia 2006; Harris and Bromiley 2007). Similarly, we use *STOCK%_CEO* and *OPTION%_CEO* (measured by the ratios of CEOs' stocks and options to total compensation, respectively) under the percentage approach and predict the same direction of their coefficients.

3.2.4 Audit committee compensation variables

Under the magnitude approach, we use the natural logs of cash (denoted by *CASH_AC*), stocks (denoted by *STOCK_AC*), and options (denoted by *OPTION_AC*) paid to the ACs as our test variables in model (1) to examine the associations between individual compensation components and restatement likelihood.⁸ Hypothesis H1 predicts that the coefficients of *STOCK_AC* and *OPTION_AC* to be positive and hypothesis H2 predicts the coefficient of *CASH_AC* to be negative.

To test whether the extent of economic bond embedded in the equity-based compensation affects ACs' independence, we use specific provisions associated with stocks and options. We decompose *STOCK_AC* into restricted (denoted by *RESTRSTOCK*) and unrestricted (denoted by *UNRESTRSTOCK*) and separate *OPTION_AC* into short-term (denoted by *SHORTOPTION*) and long-term (denoted by *LONGOPTION*). We then replace *STOCK_AC* and *OPTION_AC* by these four

⁸We use skewness and kurtosis statistics to test the normality of the compensation data. Both tests reject the null hypothesis that compensation amounts are normally distributed ($p < 0.01$), and this result is robust to total compensation as well as to various compensation components. To ensure normality for our regression analyses, we use the natural logs to transform the dollar amounts of cash, stocks, and options.

provision-specific variables in model (1) and re-run the analysis. Based on our economic bond notion, restricted stocks and long-term options shall further reinforce the importance of equity-based compensation to AC members' wealth, leading to a higher restatement likelihood. Therefore, hypothesis H3-1 predicts more significant coefficients for *RESTRSTOCK* and *LONGOPTION* than for *UNRESTRSTOCK* and *SHORTOPTION*.

Under the percentage approach, variables *CASH%_AC*, *STOCK%_AC*, and *OPTION%_AC* are the ratios of cash, stocks, and options to total compensation, respectively. We thus replace *CASH_AC*, *STOCK_AC*, and *OPTION_AC* by these three percentage variables in model (1). According to hypotheses H4-1 and H4-2, we predict the coefficients of *STOCK%_AC* and *OPTION%_AC* to be positive and the coefficient of *CASH%_AC* to be negative.

Finally, we test the economic bond effects using the ratios of restricted and unrestricted stocks (denoted by *RESTRSTOCK%* and *UNRESTRSTOCK%*, respectively) and short-term and long-term options (denoted by *SHORTOPTION%* and *LONGOPTION%*, respectively) to total compensation. We replace *STOCK%_AC* and *OPTION%_AC* by these four provision-specific percentage variables in model (1). Hypothesis H3-2 thus predicts that the coefficients of *RESTRSTOCK%* and *LONGOPTION%* are more significant than those of *UNRESTRSTOCK%* and *SHORTOPTION%*.

3.3 Test of Companies' Action after Restatements:

To test our hypotheses H5 ~ H9, we use the differences-in-differences method following Bertrand et al. (2004), Bertrand and Mullainathan (1999, 2003), and Low (2009). Specifically, we adopt the following regression model:

$$\begin{aligned}
\text{Compensation_Variables}_{i,t} = & \alpha_0 + \beta_1 \text{LnAsset}_{i,t} + \beta_2 \text{SALES}_{i,t} + \beta_3 \text{LEVERAGE}_{i,t} \\
& + \beta_4 \text{ROA_ind}_{i,t} + \beta_5 \text{M / B}_{i,t} + \beta_6 \text{indBOARD}_{i,t} \\
& + \beta_7 \text{CEOOWN\%}_{i,t} + \beta_8 \text{CHAIRCEO}_{i,t} + \beta_9 \text{BSIZE}_{i,t} \\
& + \beta_{10} \text{AUDITFEE}_{i,t} + \beta_{11} \text{DIVIDENDS}_{i,t} \\
& + \beta_{12} \text{ANREST}_{i,t} + \beta_{13} \text{ANREST} * \text{POST}_{i,t} + \varepsilon_{i,t}
\end{aligned} \tag{2}$$

where the definitions of all the variables are summarized in the Appendix.

The dependent variables are chosen depending on the hypotheses to be tested. For example, we use *CASH_AC* and *EQUITY_AC* as the dependent variables to test our H5 and H6, respectively. To examine whether restating companies' adjustments in equity compensation is specifically due to ACs and whether such adjustments are the consequence of the decline in CEOs' equity-based compensation following restatements (Cheng and Farber 2008), we also employ compensation paid to the CEOs and board members other than ACs and CEOs as the dependent variables for comparison purpose. Under the magnitude approach, we define *CASH_CEO* and *CASH_OthB* to be the natural logs of cash compensation paid to the CEOs and other board members, respectively. In addition, we measure *EQUITY_CEO* and *EQUITY_OthB* by the natural logs of equity-based compensation paid to the CEOs and other board members, respectively.

Under the percentage approach, we use *CASH%_AC* and *EQUITY%_AC* to test H8 and H9, respectively. Similar to the tests of H5 and H6, we use the portions of compensation paid to the CEOs and other board members as the dependent variables to supplement our tests of H8 and H9. We define *CASH%_CEO* and *CASH%_OthB* to be the ratios of CEOs' and other board members' cash compensation to total compensation, respectively. Also, *EQUITY%_CEO* and *EQUITY%_OthB* are measured by the ratios of equity-based compensation to total compensation for the CEOs and other board members, respectively.

Based on the extent of economic bond tying up AC members' wealth and companies' financials, we further decompose *EQUITY_AC* into two groups: a strong economic bond group (including restricted stocks and long-term options) and a weak economic bond group (including unrestricted stocks and short-term options). To test hypothesis H7-1, we use *S_BOND* (which is the natural log of the sum of restricted stocks and long-term options) and *W_BOND* (which is the natural log of the sum of unrestricted stocks and short-term options) as our dependent variables. To test hypothesis H7-2, we

use *S_BOND%* (which is the ratio of restricted stocks and long-term options to total compensation) and *W_BOND%* (which is the ratio of unrestricted stocks and short-term options to total compensation) as our dependent variables.

Due to a lack of literature that investigates the determinants of ACs' cash and equity-based compensation when restatements occur, we follow Engel et al. (2010) and Linck et al. (2009) by including several control variables that may affect board director compensation. For example, Linck et al. (2009) indicates that, according to the contracting theory (Jensen and Murphy 1990), directors' compensation is affected by their job complexity (which can be measured by firm size), financing activities, and firm performance. We use *LnASSET* and *SALES* to proxy for firm size (Chhaochharia and Grinstein 2009; Engel et al. 2010) and adopt *LEVERAGE* and *ROA_ind* to capture financing activities and performance (Engel et al. 2010; Linck et al. 2009), respectively. Since the changes in compensation could be related to systematic difference in changes to firms' growth opportunities (Chhaochharia and Grinstein 2009), we use the market-to book ratio (denoted by M/B) to control for this effect (Engel et al. 2010; Ryan and Wiggins 2004).

Based on the bargaining theory (Bebchuk et al. 2002; Hermalin and Weisbach 1998), Engel et al. (2010) indicates that directors' compensation is determined by the negotiation process between the boards and the CEOs. To measure boards' negotiation power, Engel et al. (2010) suggests the use of the percentage of independent directors on the boards (denoted by *IndBOARD*). To measure CEOs' bargaining power, Engel et al. (2010) suggests the use of CEO ownership (denoted by *CEOOWN%*) and whether CEOs serve as chairs of the boards (denoted by *CHAIRCEO*). We further consider the number of directors (denoted by *BSIZE*) because Ryan and Wiggins (2004) indicates that board size also affect CEOs' bargaining power. Moreover, Engel et al. (2009) shows that companies are more likely to structure their AC compensation when their demand for monitoring (measured by total audit fees, denoted by *AUDITFEE*) changes. We follow Engel et al. (2010) by including this variable in

model (2). Finally, we capture companies' cash constraints in paying cash compensation by including variable *DIVIDENDS* in the model (Engel et al. 2010; Linck 2009).

Since there is a lack of prior studies and theories that can possibly explain the relations between our dependent and independent variables, we predict no signs for our control variables in model (2).

The differences-in-differences estimator represents the difference between the pre-post, within-subjects differences of the treatment and control groups (Ashenfelter, 1978; Bertrand et al. 2004). *ANREST* is a dummy variable that equals 1 if a company announces a restatement in a given year and 0 otherwise. This variable tests whether there are significant differences in the dependent variables between companies with and without restatements. *POST* is a dummy variable that equals 1 if the year is after the year of restatement announcement and 0 otherwise. Here we use restatement announcement years instead of years being restated because companies adjust ACs' compensation only after restatements are publicly announced.

Our variable of interest, *ANREST*×*POST*, tests whether there are significant changes in dependent variables before and after restatements. When we use *CASH_AC* and *CASH%_AC* as the dependent variables to test hypotheses H5 and H8, respectively, we expect the coefficients of *ANREST*×*POST* to be positive because companies will pay more cash or higher portion of cash to their ACs due to increased demanding for monitoring resulting from restatements. In contrast, when we use *EQUITY_AC* and *EQUITY%_AC* as the dependent variables to test hypotheses H6 and H9, respectively, we expect the coefficients of *ANREST*×*POST* to be negative because companies perceive that equity-based compensation jeopardizes AC independence and decide to reduce such payments to improve ACs' oversight quality. Lastly, hypotheses H7-1 and H7-2 predict that companies will reduce more amounts and portions of stocks and options that create stronger economic bond to the ACs. Therefore, we expect the coefficients of *ANREST*×*POST* to be larger when we use *S_BOND* and *S_BOND%* as the dependent variables than when we use *W_BOND* and *W_BOND%* as the dependent

variables, respectively. Similar to Model (1), we also control for industry and year fixed effects in model (2) for potential unspecified factors.

4. EMPIRICAL RESULTS

4.1 Descriptive Statistics:

Table 2 reports the distribution of the sample restatements. Panel A shows that more than half of the restatements (50.41%) are made to correct financial statements released in the years 2003 and 2004, followed by years 2005 and 2006 (30.08%). Panel B provides the distribution of restatement characteristics. As indicated in this panel, more than half (57.72%) of the restating companies are NYSE-listed. This contrasts with Cheng and Farber's (2008) pre-SOX finding that 55.4% of the restating companies are Nasdaq-listed. In addition, 78.05% of these restatements have negative effect on companies' earnings numbers. Our sample firms are from a broad spectrum of industries, with utilities and computers having the highest percentages of restatements. Finally, the most common reason of restatements involves cost and expense accounts.

[Insert Table 2 here]

Table 3 presents the descriptive statistics and univariate test results for our test and control variables used in models (1) and (2). In most cases, parametric and non-parametric tests results are consistent. Several findings are worth noting. First, companies with and without restatements are similar in size and are equally likely to be audited by Big 4 auditors. Second, restating companies involve less merger and acquisition activities (*M&A*). This univariate test result is not consistent with our prediction. Third, restating companies generally have smaller board size (*BFSIZE*), leading to smaller ACs (*ACSIZE*). While these ACs meet more frequently (*MEETINGTIMES*), they have fewer accounting experts (*ACCEXPERTISE*). Fourth, restating companies use more leverage for financing (*LEVERAGE*). Finally, companies with restatements appear to compensate their ACs using less cash (*CASH_AC*) and stocks (*STOCK_AC*) but more options (*OPTION_AC*), especially the long-term

options (*LONGOPTION*). In terms of relative weights, restating companies tend to give a smaller portion of stocks (*STOCK%_AC*) and a larger portion of options (*OPTION%_AC*) in their compensation packages. However, the portions of restricted stocks (*RESTRSTOCK%*) and long-term options (*LONGOPTION%*) are larger.

[Insert Table 3 here]

To evaluate potential multicollinearity, we analyze variance inflation factors (VIFs) among independent variables. All of the VIFs are between 1.01~1.98 for model (1) and 1.03~2.06 for model (2), which are far below the 10.0 threshold suggested by Neter et al. (1996). Therefore, multicollinearity is not a problem in our analyses.

4.2 Regression Results:

4.2.1 Association between equity-based compensation and restatement likelihood

Adopting the magnitude approach, column A of Table 4 reports that the coefficient of *OPTION_AC* is significantly positive (0.089, $p < 0.10$) while the coefficient of *STOCK_AC* is positive but not significant. Therefore, H1 is only partially supported. Column B of Table 4 further considers specific provisions associated with stocks and options. The results indicate that larger restricted stocks (0.013, $p < 0.01$) and long-term options (0.015, one-tailed $p < 0.10$) are more likely to be associated with higher restatement likelihood. Hence, H3-1 is supported. This conclusion is different from Archambeault et al.'s (2008) pre-SOX result that both short-term and long-term options are associated with more subsequent restatements. In contrast, companies paying more cash (-0.025 and -0.026 in columns A and B, respectively, $p < 0.10$) are less likely to have restatements. This result supports our H2 and confirms Magilke et al.'s (2009) experimental finding that ACs compensated with cash are associated with the lowest level of biased reporting.

[Insert Table 4 here]

Under the percentage approach, the empirical results reported in columns C and D of Table 4 are

similar to those reported in columns A and B. While column C indicates that only the coefficient of *OPTION%_AC* is significant (0.151, $p < 0.10$) in the predicted directions, column D shows that *RESTRSTOCK%* and *LONGOPTION%* have significantly positive coefficients (0.745, $p < 0.10$ and 0.564, one-tailed $p < 0.10$), suggesting that higher portions of restricted stocks and long-term options are associated with higher restatements likelihood. These results partially support H4-1 but fully support H3-2. Note that the coefficient of *CASH%* remains significantly negative only in column D (-0.632, $p < 0.10$). This implies that higher portion of cash payments appears to improve AC independence, leading to less restatement likelihood. Our H4-2 is thus supported.

Table 4 also documents several results related to our control variables. First, companies with higher restatement likelihood involve more merger and acquisition activities (*M&A*) and suffer worse financial conditions (*ROA_ind*). Second, the coefficients of *ACSIZE* are significantly negative. This result is consistent with prior studies' findings that larger ACs appear to have increased power (Chen and Zhou 2007; Kalbers and Fogarty 1993) and are more likely to challenge top management in fulfilling their oversight responsibilities (Goh 2009; Krishnan 2005).⁹ Third, we find no association between *MEETINGTIMES* and restatement likelihood. This result does not support extant auditing literature that uses meeting times to proxy for ACs' diligence.¹⁰ Finally, the significance of the coefficients of *ACCEXPERTISE* is consistent with the commonly-accepted notion that accounting expertise is important to the ACs because their primary duties require a relatively high degree of accounting sophistication. This finding contributes to the growing studies that focus on the controversy of the SEC's broadly-defined financial expertise (e.g., Dhaliwal et al. 2010). We argue that the regulators may need to re-consider narrowing the latitude of financial expertise to ensure ACs' quality

⁹Different from our study, Carcello et al. (2011) defines *ACSIZE* as a dummy variable that equals 1 if there are at least three members in the audit committees. They find that *ACSIZE* is negatively associated with restatement likelihood, which is also consistent with ours.

¹⁰Prior studies have shown that more frequent audit committee meetings are associated with higher frequency of demanding high quality auditors (e.g., Abbott and Parker 2000; Archambeault and DeZoort 2001; Chen and Zhou 2007), lower cost of debt financing (e.g., Anderson et al. 2004), and fewer financial reporting problems that are subjected to the SEC's sanctions (e.g., Abbott et al. 2004; McMullen and Raghunandan 1996).

of overseeing financial reporting process.

Note that columns A and B show no significant association between CEOs' equity compensation (i.e., *STOCK_CEO* and *OPTION_CEO*) and restatement likelihood. This post-SOX result is different from pre-SOX finding that CEOs compensated with high option grants are positively associated with the probability of earnings restatements (e.g., Efendi et al. 2007; Burns and Kedia 2006). In contrast, the significant coefficients of *OPTION%_CEO* in columns C and D (0.087 and 0.120, $p < 0.05$) is consistent with Harris and Bromiley (2007), which uses pre-SOX restatements and shows that CEOs in restating companies receive a higher portion of their compensation in the form of options. Our result also supports Cheng and Farber's (2008) pre-SOX finding that companies may react to restatements by reducing the portions of CEOs' option compensation within 2 years after restatements. Arguably, Cheng and Farber's (2008) findings appear to imply that the grant of options after restatements should be less likely to be associated with restatement likelihood. However, we use after-SOX restatements and document that this association remains significant. This raises the question as to whether restating companies' re-contracting with their CEOs by reducing the portion of options is indeed useful in mitigating restatement likelihood. Cheng and Farber (2008) only examines whether restating companies reduce options as a means to possibly improve future operation performance, but does not examine whether such action can be effective in mitigating future restatements.

4.2.2 Companies' action after restatements

Table 5 reports the differences-in-differences regression results using different compensation measures as the dependent variables. Focusing on the dollar amounts, columns A and D in panel A of Table 5 indicate that the coefficient of *ANREST*×*POST* is significantly positive (0.286, $p < 0.05$) but reverses to significantly negative (-0.165, $p < 0.01$) when we use *CASH_AC* and *EQUITY_AC* as the dependent variables, respectively. The magnitude of these coefficients represents an average of 33.1% dollar amount increase in cash and 15.2% decrease in equity-based compensation, suggesting that

restating companies appear to pay more cash and reduce stocks and options following restatements.

To examine whether restating companies' adjustments in equity compensation is specifically due to ACs and whether such adjustments are due to the decline in CEOs' equity-based compensation following restatements, we use the dollar amounts and portions of cash and equity-based compensation paid to the CEOs and other board members as the dependent variables and re-run model (2). Columns B, C, E, and F in panel A of Table 5 show that the coefficients of $ANREST \times POST$ are not significant at the conventional significance levels.¹¹ Panel A of Table 5 thus supports H5 and H6.

[Insert Table 5 here]

Focusing on the changes in relative weights, columns A and D in panel B of Table 5 report similar results. Here, the coefficient of $ANREST \times POST$ is positive (0.019, one-tailed $p < 0.104$, which is marginally insignificant) but becomes significantly negative (-0.052, $p < 0.01$) when we use $CASH\%_AC$ and $EQUITY\%_AC$ as the dependent variables, respectively. The magnitude of these coefficients represents an average of 1.9% increase in the portion of cash and 5.2% decrease in the portion of equity-based compensation. In contrast, columns B, C, E, and F in panel B of Table 5 show that the coefficients of $ANREST \times POST$ are all insignificant at the conventional levels. Therefore, our H8 and H9 are supported. Taken together, Table 5 provides evidence that restating companies appear to pay more cash and have a larger portion of cash in the compensation packages. Simultaneously, these companies decrease incentives that may adversely affect ACs' independence by giving less stocks and options and reducing the portion of equity-based compensation in the packages. More importantly,

¹¹Note that we use different sample sizes in running model (2) for audit committees, CEOs, and other board members. We use 1,977 firm observations for audit committees because, as shown in Table 1, this sample excludes firm observations that involve audit committee turnovers. Therefore, this sample rules out the possibility that companies use the discharge of audit committee members to react to restatements. Based on the same notion, we exclude firm observations having turnovers in either the CEOs or other board members to ensure that companies do not change their CEOs or board members following restatements. This gives rise to two samples with 2,136 observations for CEOs and 1,899 observations for other board members. We do so for two reasons. First, we do not find substantial turnovers in CEOs in our post-SOX sample. Second, our procedure creates a consistent comparison basis because the same audit committees, CEOs, and other board members will face different compensation packages before and after the restatements.

restating companies do so specifically for their ACs only.

Our finding that companies react to restatements by adjusting the dollar amounts and portions of cash and equity-based compensation specifically for ACs bear two important implications. First, this result is consistent with recent trend that companies provide individualized compensation levels among boards' sub-committees to reflect their different workloads. For example, Tovar and Newbury (2010) reports that board members serving on the AC receive larger cash (\$10,000 median value in 2009) than those serving on the compensation (\$7,500 median value) or nominating committees (\$6,000 median value). Second, the significant increases in dollar amounts and portions of cash are consistent with Engel et al.'s (2010) finding that companies pay more cash to their ACs due to increased demand for monitoring. In our study, such demand results from the occurrence of restatements.

To ensure that restating companies indeed perceive equity-based compensation to be detrimental to ACs' independence and are more willing to reduce such incentives, we further decompose ACs' total equity-based compensation into strong and weak economic bond groups using the specific provisions associated with stocks and options. Note that the significance of the coefficients of *RESTRSTOCK*, *RESTRSTOCK%*, *LONGOPTION*, and *LONGOPTION%* in Table 4 supports our use of restricted stocks and long-term options as the measure of strong economic bond. The dollar amount results reported in columns A and B of Table 6 indicate that the coefficient of *ANREST*×*POST* is significantly negative only when we use *S_BOND* as the dependent variable (-0.172, $p < 0.05$).¹² This represents an average of 15.8% decrease in equity-based compensation with strong economic bond, suggesting that companies only reduce restricted stocks and long-term options paid to their ACs following restatements. Since more significant coefficient does not imply larger decrease in equity-based compensation with strong economic bond, we compute *t* statistic to test whether there is significant

¹²In testing our economic bonding effect, we use 1,804 firm observations. This sample is obtained by subtracting 173 observations that do not have detailed information about the provisions related to stocks and options from the sample we use to test companies' reaction following restatements (i.e., 1,977 in Table 1).

difference in the coefficient of $ANREST \times POST$ between S_BOND and W_BOND . A positive but insignificant $t = 0.2214$ indicates that restating companies appear to reduce more amounts of restricted stocks and long-term options, but the reduced amounts are not significantly larger than those for unrestricted stocks and short-term options. Therefore, hypothesis H7-1 is only qualitatively supported.

[Insert Table 6 here]

Similar to the dollar amount results, columns C and D of Table 6 show that the coefficient of $ANREST \times POST$ is significantly negative only when we use $S_BOND\%$ as the dependent variable ($-0.017, p < 0.10$). This represents an average of 1.7% decrease in the portion of equity-based compensation with strong economic bond. We proceed to conduct the t test and find a positive but insignificant $t = 0.0041$. This implies that restating companies appear to reduce the portions of equity-based compensation that creates strong, rather than weak, economic bond. However, the difference is not substantial. Hypothesis H7-2 is thus not supported.

Taken together, Tables 5 and 6 indicate that companies appear to increase the amounts and portions of cash payments and decrease the amounts and portions of stocks and options, especially those having strong economic bond, after restatements. This compensation-adjusting strategy is important because increasing cash payments not only compensates ACs' losses in stocks and options, but also explicitly inform ACs that companies are concerned about the quality of financial statements and demand higher monitoring. As compared to other actions documented in the literature (e.g., change CEO/CFO, dismiss incumbent auditors, and discharge outside directors), we show that adjusting the amounts and portions of cash and equity-based compensation is also used in practice. More importantly, restating companies actually recognize that equity-based compensation jeopardizes ACs' independence and react by cutting stocks and options that create strong economic bond. Based on our findings, we argue that this action could be more feasible and effective than other actions because this action does not incur costs associated with auditor switching, potential risks due to successor auditors'

unfamiliarity with the clients, new CEO/CFO recruiting, and conflicts between new and old board members. We regard this as the major contribution of our study to the AC and restatement literature.

4.2.3 Effects of SEC's 2006 mandatory compensation disclosures

Executive compensation has come under intense scrutiny in recent years, with numerous controversies over compensation, retirement, and severance packages. In response to investors' criticisms of inadequate and confusing executive compensation information, the SEC adopted new rule on July 26, 2006. As finalized, the Rule mandates US public companies to disclose executive and director compensation in proxy statements for all annual reports filed on or after December 15, 2006, and for Form 8-Ks filed for triggering events that occurred on or after November 7, 2006. Even though executive and director compensation disclosures have been required since 1933, the last substantial revision to the rules was made in 1992. As mentioned in SEC Press Release 2006-123, this new rule is the greatest interest shown in any SEC revision in the commission's 72-year history.

Since this new Rule forces all companies to publicly disclose their boards' compensation information, it provides us with a good chance to test whether restating companies take advantage of this new Rule to signal the improvement of their financial reporting quality. To do this, we use 2006 as the cut-off year and partition the sample into two sub-samples: Pre-2006 and Post-2006. Because boards' compensation information was not publicly available before 2006, we predict that Pre-2006 restating companies will reduce smaller amounts and portions of equity-based compensation and increase smaller amounts and portions of cash payments due to a lack of the signaling effect. In contrast, we predict that Post-2006 restating companies will be more willing to reduce larger amounts and portions of equity-based compensation and increase larger amounts and portions of cash payments because investors can publicly observe these changes and react favorably.

Using the magnitude approach, columns A and B in Panel A of Table 7 show that the coefficients of $ANREST \times POST$ are significant in the correct directions for the Pre-2006 sample (one-tailed $p <$

0.10). For the Post-2006 sample, however, columns D, E, and F in Panel A report that coefficients of *ANREST*×*POST* turn out to be more significant (at least two-tailed $p < 0.10$). The t test indicates that the difference of the coefficients of *ANREST*×*POST* is not significant for *CASH_AC* in the Pre-2006 and Post-2006 periods ($t = 0.2653$). A similar results is found for *S_BOND* ($t = 0.3906$). Notably, we find a significant decrease in the coefficients of *W_BOND* after 2006 ($t = 1.7002$, $p < 0.10$). In contrast, Panel B of Table 7 shows that, when we use the percentage approach, the coefficients of *ANREST*×*POST* are significant only for *S_BOND%* in the Pre-2006 and Post-2006 periods. We run t test and find that the difference of these two coefficients is not significant ($t = -0.7249$).

[Insert Table 7 here]

Overall, Table 7 suggests that the SEC's 2006 Disclosure Rule appears to indirectly enhance ACs' oversight effectiveness by encouraging restating companies to reduce larger amounts and portions of equity-based compensation with strong economic bond, because doing so may signal companies' determination to enhance the credibility of their future financial statements due to the improvement of ACs' independence. This finding is different from Robinson et al. (2011), which shows that disclosure noncompliance identified by the SEC under the 2006 Disclosure Rule is not associated with a reduction in CEO compensation. They conclude that the Disclosure Rule and the SEC's enforcement actions appear not enough to discipline CEO compensation.

4.3 Additional Analyses (results are not tabulated):

4.3.1 Alternative valuation of options

Following Armstrong et al. (2010) and Cheng and Farber (2008), we also use the Black–Scholes model to compute option's values. All of the results reported in Section 4.2 are not sensitive to this alternative valuation method.

4.3.2 Effects of turnovers in audit committees, CEOs, and other board members

In running model (2), we use different sample sizes for ACs, CEOs, and other board members.

One may argue that this sample selection procedure may lead to imprecise comparisons because one sample excluding one type of turnovers may contain the other two types of turnovers. To address this concern, we exclude all three types of turnovers to create a sample in which companies do not change their ACs, CEOs, and other board members following restatements. We apply this reduced sample to model (2) and obtain similar results.

4.3.3 The SFAS No. 123 (R) effect

We also use a reduced sample covering 2005~2009 because SFAS No. 123 (Revision), which was passed on December 2004 and became effective from 2005, may induce companies to reduce their option grants due to the option-expense rule (Brown and Lee 2007; Carter et al. 2007; Darrough and Li 2006). To ensure that our results are not affected by this accounting rule change, we use this reduced sample to re-run all analyses. The major results remain the same.

4.3.4 Controlling for other potential explanatory variables

Prior research suggests that new companies may have difficulties in complying with the SEC's financial reporting requirements (e.g. Abbott et al. 2004). Also, growing companies are associated with higher incidences of financial restatements (e.g., Ashbaugh-Skaife et al. 2007). We control for these two factors by including firm age, which is measured by the natural log of the number of years a company has been included in the COMPUSTAT, and sales growth ratio in our model (1). The results are similar to those reported in Section 4.2.

5. SUMMARY AND CONCLUSIONS

Recent auditing studies in restatements have examined possible actions (e.g., change CEO/CFO, dismiss auditors, and discharge outside directors) restating companies may take to react to the quality impairment of their financial statements. Due to the practical difficulty of these actions to many companies, the efficacy of these actions may be limited.

In this study we show that enhancing AC independence through the adjustment of compensation

components has been used by restating companies with an aim to increase the quality of financial reporting. We test two research questions to prove the existence of this action. The first research question tests whether equity-based compensation jeopardizes AC independence, leading to higher likelihood of oversight failure reported in restatements. The empirical results indicate that larger amounts of restricted stocks and long-term options are associated with higher restatement likelihood. In addition, the higher the portions of restricted stocks and long-term options in the compensation packages, the higher the likelihood of restatements. Based on these findings, we classify these two types of equity-based compensation as having strong economic bond.

Our second research question tests whether the amounts and portions of restating companies' equity-based compensation decrease. We adopt the differences-in-differences method to show that our predictions are generally supported. Notably, restating companies increase the amounts and portions of cash compensation possibly due to the increase in demand for monitoring over financial reporting. To test whether restating companies perceive that equity-based compensation jeopardizes AC independence, we further decompose equity-based compensation into two groups based on their extent of economic bond and find that restating companies reduce more amounts and portions of equity-based compensation with strong economic bond only. Finally, we find some evidence that the SEC's 2006 Disclosure Rule appears to indirectly encourages restating companies to reduce larger amounts and portions of equity-based compensation because these companies may use the public disclosure of board compensation to signal their intent to improve ACs' independence.

Overall, our study not only provides a starting point for developing a theory about the association between equity-based compensation and ACs' independence, but also underscores the practice that restating companies try to enhance ACs' independence through reducing the amounts and portions of equity-based compensation, especially that with strong economic bond.

While we empirically show that restating companies may adjust cash and equity-based

compensation to change AC members' monetary incentives, this finding shall not be construed as companies simply fine-tune their board compensation. We view AC compensation to be unique and different from board compensation because there is a trend that most companies are increasing compensation paid to the most demanding board committees (i.e., audit, compensation, and nomination). Since ACs have long been considered to be the most demanding, the premium provided for services on the ACs is the largest (Koors 2006; Tovar and Newbury 2010).

Some features of our study point to several directions for future research. First, we focus on equity-based compensation as one major source that could jeopardize AC independence. Future research may examine other factors (e.g., tenure of membership, penalties for oversight failures) that may also affect other aspects of ACs. Second, we use restatement likelihood to show that restating companies may use the changes in the composition of cash and equity-based compensation in the compensation packages to improve ACs' independence. Future studies may include other aspects of restatements (e.g., severity, pervasiveness) into our research framework. Finally, based on Hennes et al. (2008), future studies may examine the association between AC equity compensation and the classification of misstatements (i.e., errors or irregularities).

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TABLE 1
Sample Selection Procedures

All S&P 500 firms during fiscal years 2003 to 2009	3,500
Less: financial institutions (SIC codes 6000-6999)	(595)
Less: observations with missing data ^a	(351)
Less: observations without provision and vesting data for equity-based compensation ^b	(173)
Sample used to test the association between audit committees' equity-based compensation and restatement likelihood	<u>2,381</u>
Add: observations without provision and vesting data for equity-based compensation ^c	173
Less: observations having duplicate or repeating restatements	(220)
Less: observations without using equity-based compensation for audit committee members	(234)
Less: observations replacing audit committee member after restatements	(123)
Sample used to test whether companies react to restatements by reducing equity-based compensation	<u>1,977</u>

^aAll sample firms have complete data on COMPUSTAT and CRSP. Audit committee compensation data and other related information are obtained from companies' Form DEF 14A using the EDGAR database.

^bNinety-eight firm-year observations do not have stock option vesting data and exercise prices for audit committee compensation, and 75 firm-year observations do not clearly disclose stock restrictions (e.g., timing of holdings and sales) and portions of restricted stock.

^cThese 173 firm observations are added back because detailed provision information related to stocks and options is not needed in testing whether restating companies adjust equity-based compensation paid to their audit committees.

TABLE 2
Distribution of Restatements

Panel A: Yearly Distribution of Restatements

	A company's earnings number reported in this year is restated ^a							Total
	2003	2004	2005	2006	2007	2008	2009	
N	57	67	42	32	26	12	10	246
% of total	23.17%	27.24%	17.07%	13.01%	10.57%	4.88%	4.07%	100.00%

Panel B: Restatement Characteristics

	Frequency	Percentage of Total
All Restatements	246	100.00%
Exchange Listing		
Nasdaq National Market	54	21.95%
NYSE	142	57.72%
other	50	20.33%
Effect^b		
Positive	54	21.95%
Negative	192	78.05%
Industry^c		
Agriculture	8	3.25%
Mining and Construction	15	6.10%
Food	17	6.91%
Textiles and Printing/Publishing	11	4.47%
Chemicals	5	2.03%

Pharmaceuticals	10	4.07%
Extractive	9	3.66%
Durable Manufacturing	20	8.13%
Transportation	9	3.66%
Utilities	45	18.29%
Retailing	24	9.76%
Services	26	10.57%
Computers	47	19.11%

Panel C: Restatement Reasons^d

Accounting Rule Application Failures	Number
Revenue recognition	71
Merger and Acquisition	63
Cost and Expense	102
Securities Related	38
Investment Issue	45
Classification Issue	67
Foreign, Related Party, Affiliated Issue	52
Stock-based and/or Executive Compensation issues	56
Other	72

^aInstead of using whether or not companies announce restatements in year t , we examine whether a company's year t financial statements are restated in subsequent years. The use of restatement announcement year will mismatch the year audit committees exercise their oversight responsibility and the year they receive compensation.

^bThese restatement effects are identified and collected from Audit Analytics.

^cIndustry membership is determined by the following SIC codes: agriculture (0100-0999), mining and construction (1000-1999, excluding 1300-1399), food (2000-2111), textiles and printing/publishing (2200-2799), chemicals (2800-2824, 2840-2899), pharmaceuticals (2830-2836), extractive (1300-1399, 2900-2999), durable manufacturing (3000-3999, excluding 3570-3579 and 3670-3679), transportation (4000-4899), utilities (4900-4999), retail (5000-5999), services (7000-8999, excluding 7370-7379), computers (3570-3579, 3670-3679, 7370-7379).

^dThese accounting rule application failures are identified and collected from Audit Analytics. Most restatements involve more than one failure.

TABLE 3
Descriptive Statistics

Variables ^a	No Restatements (n = 2,135)					Restatements (n = 246)					Differences	
	Mean	Median	Std. Dev.	Min	Max	Mean	Median	Std. Dev.	Min	Max	t tests ^b	z tests ^b
<i>LnASSET</i>	9.1321	9.0516	1.1673	5.2081	13.5896	9.0526	9.0850	1.2877	6.1102	13.5285	1.000	1.135
<i>BIG4</i>	0.9907	1.0000	0.0962	0.0000	1.0000	0.9878	1.0000	0.1100	0.0000	1.0000	0.434	0.435
<i>GOING</i>	0.4804	0.0000	0.4997	0.0000	1.0000	0.4837	0.0000	0.5008	0.0000	1.0000	-0.099	-0.100
<i>M&A</i>	0.0915	0.0000	0.2883	0.0000	1.0000	0.0407	0.0000	0.1979	0.0000	1.0000	2.693***	2.690***
<i>ZSCORE</i>	4.2072	3.2595	5.9541	-55.4010	88.0500	3.9887	3.1070	3.9658	-10.5630	22.2150	0.561	0.920
<i>ROA_ind</i>	0.0611	0.0617	0.2160	0.0000	0.3499	0.0621	0.0507	0.2040	0.0000	0.3521	-0.069	-0.071
<i>BSIZE</i>	9.5621	10.0000	2.5004	3.0000	21.0000	9.2627	9.0000	2.4906	5.0000	16.0000	1.779*	3.662***
<i>ACSIZE</i>	4.2040	4.0000	1.1138	1.0000	8.0000	3.9512	4.0000	1.2510	1.0000	8.0000	3.327***	3.119***
<i>MEETINGTIMES</i>	8.7988	9.0000	3.2897	0.0000	32.0000	9.2033	9.0000	4.3789	0.0000	38.0000	-1.758*	-1.617
<i>ACCEXPRTISE</i>	0.0896	0.0000	0.1529	0.0000	1.0000	0.0536	0.0000	0.1076	0.0000	0.3333	3.595***	3.322***
<i>SALES</i>	0.9756	0.7945	0.7227	0.0715	5.7449	1.0270	0.8341	0.7166	0.1075	3.6286	-1.057	-1.067
<i>LEVERAGE</i>	0.1940	0.1782	0.1500	0.0000	1.3982	0.2194	0.1794	0.1638	0.0000	1.4042	-2.490**	-0.117
<i>M/B</i>	2.1352	1.8924	2.0548	0.0981	39.265	2.0895	1.8762	2.1200	0.1121	8.9540	0.329	0.334
<i>IndBOARD</i>	0.6523	0.6712	9.5904	0.4620	0.7901	0.3310	0.3720	10.9204	0.4620	0.7582	0.490	0.527
<i>CEOOWN%</i>	0.0197	0.0281	5.8871	0.0007	0.0152	0.0189	0.0271	5.4971	0.0007	0.0149	0.002	0.013
<i>CHAIRCEO</i>	0.6241	1.0000	0.4209	0.0000	1.0000	0.5924	1.0000	0.4209	0.0000	1.0000	1.118	1.203
<i>AUDITFEE</i>	0.8108	0.7828	1.1610	0.4259	1.3240	0.8246	0.7791	1.1492	0.4259	1.3267	-0.176	-0.184
<i>DIVIDENDS</i>	0.4820	0.4528	0.2651	0.0000	1.0000	0.4608	0.4426	0.2561	0.0000	1.0000	0.078	0.082
<i>CASH_AC</i>	11.9272	12.4292	2.4058	0.0000	14.0210	10.9728	12.1507	3.7602	0.0000	14.0535	5.499***	4.947***
<i>STOCK_AC</i>	8.6449	11.9184	5.7079	0.0000	14.8359	7.0887	11.2047	6.1077	0.0000	14.4442	4.020***	3.843***
<i>OPTION_AC</i>	3.7956	0.0000	5.7061	0.0000	15.2072	5.4845	0.0000	6.1491	0.0000	15.1544	-3.008***	-2.901***
<i>UNRESTRSTOCK</i>	0.2757	0.0000	1.4455	0.0000	10.8290	0.6901	0.0000	2.7686	0.0000	13.6877	-0.760	-1.596
<i>RESTRSTOCK</i>	6.6277	11.0021	6.1466	0.0000	14.4442	7.3510	10.9306	5.6329	0.0000	13.9457	-1.889*	1.000
<i>SHORTOPTION</i>	0.6869	0.0000	2.8664	0.0000	15.2072	0.7594	0.0000	2.9882	0.0000	13.3078	0.080	0.073

<i>LONGOPTION</i>	1.6047	0.0000	4.0563	0.0000	15.0705	4.7130	0.0000	5.9939	0.0000	15.1544	-3.653***	-3.817***
<i>CASH%_AC</i>	0.2074	0.0000	0.2810	0.0000	1.0000	0.4614	0.4297	0.3046	0.0000	1.0000	-0.002	0.657
<i>STOCK%_AC</i>	0.2865	0.2725	0.2467	0.0000	1.0000	0.2484	0.1627	0.2731	0.0000	1.0000	2.266**	2.980***
<i>OPTION%_AC</i>	0.1579	0.0000	0.2559	0.0000	1.0000	0.2292	0.0000	0.3089	0.0000	1.0000	-2.791***	-1.962**
<i>UNRESTRSTOCK%</i>	0.0343	0.0000	0.1161	0.0000	0.9484	0.0251	0.0000	0.1203	0.0000	1.0000	1.176	2.653***
<i>RESTRSTOCK%</i>	0.2234	0.1241	0.2587	0.0000	0.8968	0.2522	0.2074	0.2512	0.0000	1.0000	-1.700*	-2.137**
<i>SHORTOPTION%</i>	0.0246	0.0000	0.1146	0.0000	0.9371	0.0367	0.0000	0.1561	0.0000	1.0000	-1.056	-0.044
<i>LONGOPTION%</i>	0.1333	0.0000	0.2420	0.0000	1.0000	0.1925	0.0000	0.2920	0.0000	1.0000	-2.427**	-1.669*

^aThe definitions of all variables are summarized in the Appendix.

^bAsterisks *, **, *** denote two-tailed significance levels at 10%, 5%, and 1%, respectively.

TABLE 4
Test of Association between Audit Committee Compensation and Restatement Likelihood

Variables ^a	Pred. Sign	Magnitude Approach		Percentage Approach	
		(A) RESTATED	(B) RESTATED	(C) RESTATED	(D) RESTATED
<i>Intercept</i>		-5.66 (-0.02)	-4.44 (-0.02)	-6.87 (-0.03)	-6.91 (-0.03)
<i>LnASSET</i>	-	-0.012 (-0.11)	-0.032 (-0.28)	-0.013 (-0.15)	-0.014 (-0.16)
<i>BIG4</i>	-	-0.315 (-0.56)	-0.411 (-0.72)	-0.284 (-0.54)	-0.268 (-0.51)
<i>GOING</i>	+	0.222 (0.80)	0.176 (0.63)	0.356 [#] (1.46)	0.370 [#] (1.51)
<i>M&A</i>	+	0.445* (1.89)	0.509** (1.97)	0.346** (2.11)	0.330** (2.08)
<i>ZSCORE</i>	-	-0.010 (-0.44)	-0.018 (-0.78)	-0.013 (-0.27)	-0.038 (-0.20)
<i>ROA_ind</i>	-	-0.024 [#] (-1.54)	-0.028* (-1.82)	-0.026** (-1.98)	-0.028** (-2.01)
<i>ACSIZE</i>	-	-0.152 [#] (-1.47)	-0.195* (-1.86)	-0.116 [#] (-1.31)	-0.114 (-1.28)
<i>MEETINGTIMES</i>	-	0.059 (1.23)	0.033 (1.14)	0.026 (0.99)	0.027 (1.00)
<i>ACCEXPERTISE</i>	-	-2.716*** (-3.11)	-2.669*** (-3.07)	-2.754*** (-3.62)	-2.735*** (-3.59)
<i>STOCK_CEO</i>		-0.053 (-0.43)	-0.058 (-0.47)		
<i>OPTION_CEO</i>		0.034 (0.35)	0.024 (0.25)		
<i>CASH_AC</i>	?	-0.025** (-2.49)	-0.026* (-1.79)		
<i>STOCK_AC</i>	+	0.049 (0.81)			

<i>OPTION_AC</i>	+	0.089*			
		(1.69)			
<i>UNRESTRSTOCK</i>	+		0.109		
			(0.49)		
<i>RESTRSTOCK</i>	+		0.013***		
			(2.64)		
<i>SHORTOPTION</i>	+		-0.004		
			(-0.06)		
<i>LONGOPTION</i>	+		0.015 [#]		
			(1.48)		
<i>STOCK%_CEO</i>				0.518	0.514
				(1.12)	(1.11)
<i>OPTION%_CEO</i>				0.087**	0.120**
				(2.10)	(2.09)
<i>CASH%_AC</i>	?			-0.662	-0.632*
				(-1.03)	(-1.78)
<i>STOCK%_AC</i>	+			0.717	
				(1.05)	
<i>OPTION%_AC</i>	+			0.151*	
				(1.79)	
<i>UNRESTRSTOCK%</i>	+				0.311
					(0.30)
<i>RESTRSTOCK%</i>	+				0.745*
					(1.88)
<i>SHORTOPTION%</i>	+				0.068
					(0.07)
<i>LONGOPTION%</i>	+				0.564 [#]
					(1.54)
Fixed Effect		Included	Included	Included	Included
N		2,381	2,381	2,381	2,381
pseudo R^2		0.1446	0.1526	0.1544	0.1535
Likelihood Ratio χ^2		197.95***	230.57***	234.65***	219.92***

^aThe definitions of all variables are summarized in the Appendix.

^bAsterisks *, **, *** denote two-tailed significance levels at 10%, 5%, and 1%, respectively.

TABLE 5
Test of Action Taken Following Restatements

Panel A: Magnitude Approach						
Variables ^a	(A) CASH_AC	(B) CASH_CEO	(C) CASH_OthB	(D) EQUITY_AC	(E) EQUITY_CEO	(F) EQUITY_OthB
<i>Intercept</i>	9.134*** (6.43)	4.622*** (5.14)	3.730*** (6.55)	11.381*** (6.17)	4.036*** (9.14)	5.787*** (7.50)
<i>LnAsset</i>	0.135*** (2.97)	0.228*** (4.97)	0.124*** (2.69)	0.093*** (3.32)	0.312*** (8.52)	0.084** (2.20)
<i>SALES</i>	0.047 (0.64)	0.021 (0.86)	-0.080 (-1.02)	-0.077 (-1.56)	0.221*** (3.71)	0.078 (1.12)
<i>LEVERAGE</i>	0.068 (1.06)	0.024 (0.25)	0.246 (0.75)	0.102 (1.25)	0.082* (1.86)	0.116*** (2.99)
<i>ROA_ind</i>	0.036*** (4.97)	0.071*** (2.99)	0.088 (1.24)	-0.096 (-1.09)	0.040 (0.25)	0.077 (0.44)
<i>M/B</i>	0.089*** (3.47)	-0.096 (-0.01)	0.084* (1.91)	0.094*** (3.57)	0.070** (2.04)	0.095* (1.72)
<i>indBOARD</i>	2.081*** (5.71)	0.162 (1.37)	3.275*** (8.88)	-2.912*** (-5.95)	-0.183 (-0.64)	-0.575* (-1.76)
<i>CEOOWN%</i>	-0.042*** (-4.35)	0.046** (2.08)	-0.040 (-0.44)	-0.072 (-1.20)	0.060*** (8.15)	-0.014* (-1.71)
<i>CHAIRCEO</i>	0.176** (2.06)	0.279*** (9.83)	0.073 (0.84)	0.056 (1.07)	0.472*** (6.93)	-0.075 (-0.98)
<i>BSIZE</i>	1.167*** (5.23)	-0.416 (-0.57)	1.227*** (5.47)	0.976*** (7.09)	0.473*** (2.70)	0.144 (0.73)
<i>AUDITFEE</i>	0.048*** (3.27)	0.094 (1.16)	0.024 (0.14)	-0.081 (-0.20)	-0.057*** (-4.63)	-0.024* (-1.75)
<i>DIVIDENDS</i>	0.094*** (2.66)	0.123** (2.32)	0.144* (1.78)	0.292 (0.76)	0.052 (0.37)	0.696 (0.41)
<i>ANREST</i>	-0.165 (-1.26)	-0.081** (-2.02)	0.175 (1.31)	0.161** (1.99)	0.194* (1.85)	0.323*** (2.75)
<i>ANRESTxPOST</i>	0.286**	0.028	-0.156	-0.165***	-0.118	-0.240

	(2.12)	(0.59)	(-0.92)	(-2.89)	(-1.02)	(-1.19)
Fixed Effect	Included	Included	Included	Included	Included	Included
N	1,977	2,136	1,899	1,977	2,136	1,899
Adjusted R^2	0.153	0.350	0.102	0.264	0.178	0.101
F statistics	12.59***	38.97***	7.98***	25.02***	15.47***	6.76***

Panel B: Percentage Approach

Variables ^a	(A) CASH%_AC	(B) CASH%_CEO	(C) CASH%_OthB	(D) EQUITY%_AC	(E) EQUITY%_CEO	(F) EQUITY%_OthB
<i>Intercept</i>	0.184*** (3.34)	0.462*** (8.89)	0.042 (0.81)	0.667*** (6.56)	0.415*** (7.09)	0.994*** (8.55)
<i>LnAsset</i>	-0.015 (-0.25)	-0.017*** (-4.03)	0.037 (0.90)	0.012 (0.34)	0.019** (2.26)	-0.017** (-2.49)
<i>SALES</i>	0.029 (0.40)	-0.020*** (-2.85)	0.028 (0.40)	-0.021 (-0.29)	0.021*** (2.66)	-0.062 (-0.82)
<i>LEVERAGE</i>	-0.026*** (-6.05)	0.043 (0.76)	-0.021*** (-6.18)	0.062 (1.24)	0.052 (0.95)	0.021*** (5.11)
<i>ROA_ind</i>	0.061** (2.20)	0.040 (0.60)	0.081 (1.23)	-0.016 (-1.52)	-0.012*** (-2.85)	-0.064 (-0.10)
<i>M/B</i>	0.057 (1.05)	-0.018*** (-3.14)	0.039 (0.33)	0.026*** (5.92)	0.013*** (3.56)	0.082 (0.83)
<i>indBOARD</i>	0.082** (2.22)	-0.049 (-0.45)	0.067** (2.07)	-0.069* (-1.84)	0.023 (0.63)	-0.061** (-1.98)
<i>CEOOWN%</i>	-0.071 (-0.59)	-0.039*** (-4.47)	-0.022 (-1.42)	0.046 (0.84)	0.010*** (9.20)	0.068 (0.77)
<i>CHAIRCEO</i>	0.053 (0.06)	-0.026*** (-3.34)	0.032 (0.40)	-0.048 (-0.55)	0.005 (0.57)	-0.012 (-1.50)
<i>BSIZE</i>	0.063*** (2.85)	-0.063** (-2.25)	0.071*** (3.64)	-0.063*** (-2.73)	0.023 (1.01)	-0.111*** (-5.24)
<i>AUDITFEE</i>	0.029 (1.63)	0.053*** (3.68)	0.012*** (3.78)	-0.019** (-2.55)	-0.086*** (-5.48)	-0.026* (-1.80)
<i>DIVIDENDS</i>	0.098** (2.11)	0.080** (2.17)	0.083*** (2.94)	0.014 (0.38)	-0.013 (-0.43)	-0.013 (-0.64)
<i>ANREST</i>	0.018	-0.028**	-0.025**	0.056	0.047***	0.058

	(0.62)	(-2.30)	(-2.10)	(0.56)	(3.41)	(0.47)
<i>ANREST</i> × <i>POST</i>	0.019	0.055	0.018	-0.052***	-0.036	-0.010
	(1.26)	(0.40)	(1.13)	(-3.56)	(-0.14)	(-0.61)
Fixed Effect	Included	Included	Included	Included	Included	Included
N	1,977	2,136	1,899	1,977	2,136	1,899
Adjusted R^2	0.198	0.314	0.313	0.226	0.153	0.336
<i>F</i> statistics	17.26***	33.30***	32.28***	20.43***	13.13***	55.36***

^aThe definitions of all variables are summarized in the Appendix.

^bAsterisks *, **, *** denote two-tailed significance levels at 10%, 5%, and 1%, respectively.

TABLE 6
Test of the Economic Bond Effect

Variables ^a	(A)	(B)	(C)	(D)
	S_BOND	W_BOND	S_BOND%	W_BOND%
<i>Intercept</i>	9.801*** (6.09)	8.828*** (7.30)	0.630*** (8.90)	0.372*** (5.29)
<i>LnAsset</i>	-0.153* (-1.65)	0.249*** (3.81)	-0.010* (-1.91)	0.088# (1.56)
<i>SALES</i>	0.061 (0.39)	0.013 (0.13)	0.021 (0.96)	-0.012 (-1.18)
<i>LEVERAGE</i>	-0.152 (-0.98)	0.259* (1.78)	0.021 (1.10)	-0.235 (-1.20)
<i>ROA_ind</i>	0.025* (1.67)	-0.012* (-1.66)	0.015 (0.16)	-0.036 (-0.05)
<i>M/B</i>	-0.078 (-0.87)	0.168*** (2.15)	0.014*** (2.58)	0.015*** (2.77)
<i>indBOARD</i>	-0.685 (-0.91)	-0.843*** (-3.97)	-0.012 (-0.27)	-0.015 (-0.33)
<i>CEOOWN%</i>	0.071 (0.35)	-0.011 (-0.82)	0.015* (1.77)	-0.018* (-1.89)
<i>CHAIRCEO</i>	-0.237# (-1.34)	0.019 (0.20)	-0.010 (-1.01)	0.09 (0.84)
<i>BSIZE</i>	0.263 (0.57)	0.874*** (2.95)	-0.042# (-1.50)	0.057** (2.04)
<i>AUDITFEE</i>	0.051*** (3.03)	-0.030* (-1.76)	0.027 (0.90)	-0.082 (-0.81)
<i>DIVIDENDS</i>	0.141 (0.63)	0.489 (0.83)	0.311 (0.74)	0.123* (1.95)
<i>ANREST</i>	0.661*** (2.62)	0.402** (2.43)	0.036 (0.24)	-0.032 (-0.24)
<i>ANRESTxPOST</i>	-0.172** (-2.50)	-0.245 (-0.76)	-0.017* (-1.69)	-0.018 (-0.09)
Fixed Effect	Included	Included	Included	Included

N	1,804	1,804	1,804	1,804
Adjusted R^2	0.113	0.240	0.116	0.126
F statistics	4.94***	8.23***	6.02***	7.86***

^aThe definitions of all variables are summarized in the Appendix.

^bAsterisks *, **, *** denote two-tailed significance levels at 10%, 5%, and 1%, respectively; pound key # denotes one-tailed significance level at 10%.

TABLE 7
Test of the SEC's 2006 Disclosure Effect

Panel A: Magnitude Approach

Variables ^a	Pre-2006			Post-2006		
	(A) CASH_AC	(B) S_BOND	(C) W_BOND	(D) CASH_AC	(E) S_BOND	(F) W_BOND
<i>Intercept</i>	7.667*** (6.38)	8.941*** (8.22)	7.792*** (7.01)	9.192*** (6.62)	8.610*** (8.37)	10.431*** (8.90)
<i>LnAsset</i>	0.217*** (3.16)	-0.124 (-0.92)	0.282*** (3.00)	0.046 (0.90)	-0.340** (-2.48)	0.068 (0.71)
<i>SALES</i>	0.130 (0.99)	0.033 (0.02)	0.0277 (0.15)	0.089 (1.16)	0.156 (0.76)	-0.058 (-0.45)
<i>LEVERAGE</i>	0.983* (1.74)	0.680** (2.42)	-1.393** (-2.42)	0.331 (0.91)	0.735# (1.39)	0.305 (0.54)
<i>ROA_ind</i>	0.062*** (5.22)	0.060** (2.35)	-0.034 (-0.03)	0.029*** (3.97)	0.016 (0.82)	-0.015* (-1.68)
<i>M/B</i>	-0.271*** (-4.31)	0.028 (0.23)	0.331*** (3.21)	-0.325*** (-6.34)	-0.168 (-1.23)	0.253*** (4.59)
<i>indBOARD</i>	2.239*** (4.20)	-1.202 (-1.15)	-3.479*** (-5.53)	2.132*** (5.19)	0.106 (0.10)	-1.557** (-2.14)
<i>CEOOWN%</i>	-0.052** (-2.51)	-0.059# (-1.46)	-0.078*** (-2.99)	-0.029*** (-3.01)	0.043* (1.70)	0.011 (0.65)
<i>CHAIRCEO</i>	0.265** (2.00)	-0.447* (-1.72)	0.164 (1.19)	0.098 (1.09)	-0.163 (-0.68)	-0.037 (-0.28)
<i>BSIZE</i>	1.169*** (3.46)	0.210 (0.32)	1.160*** (2.63)	1.354*** (5.43)	-0.083 (-0.13)	0.898** (2.01)
<i>AUDITFEE</i>	0.052*** (2.59)	0.086** (2.46)	-0.052 (-0.06)	0.013 (0.95)	0.110*** (3.03)	-0.022 (-0.88)
<i>DIVIDENTS</i>	0.236*** (3.25)	0.341 (0.98)	0.195 (1.06)	0.259** (2.38)	0.028 (0.94)	0.169 (0.77)
<i>ANREST</i>	0.0200 (0.13)	0.540* (1.77)	0.400* (1.95)	-0.174 (-1.00)	1.215*** (2.65)	0.200 (0.71)

<i>ANREST</i> × <i>POST</i>	0.406#	-0.114#	0.274	0.310*	-0.165*	-0.307*
	(1.31)	(-1.37)	(0.91)	(1.66)	(-1.64)	(-1.90)
Fixed Effect	Included	Included	Included	Included	Included	Included
N	897	897	897	907	907	907
Adjusted R^2	0.206	0.225	0.107	0.180	0.109	0.105
<i>F</i> statistics	16.18***	13.64***	5.64***	10.70***	5.96***	5.27***

Panel B: Percentage Approach

Variables ^a	Pre-2006			Post-2006		
	(A) CASH%_AC	(B) S_BOND%	(C) W_BOND%	(D) CASH%_AC	(E) S_BOND%	(F) W_BOND%
<i>Intercept</i>	0.105#	0.843***	0.157*	0.316***	0.521***	0.439***
	(1.41)	(9.14)	(1.70)	(4.75)	(5.34)	(4.91)
<i>LnAsset</i>	0.053#	-0.021**	0.018**	-0.027#	-0.068	0.018
	(1.44)	(-2.47)	(2.57)	(-1.30)	(-0.81)	(0.81)
<i>SALES</i>	0.028	0.064	-0.014	0.013	-0.076	0.0267
	(0.22)	(0.59)	(-0.19)	(1.23)	(-0.06)	(0.06)
<i>LEVERAGE</i>	0.106*	-0.052	0.062	-0.026	-0.038	0.017
	(1.87)	(-0.50)	(0.50)	(-0.69)	(-0.60)	(0.44)
<i>ROA_ind</i>	0.028**	-0.060	0.080	0.027***	-0.014	0.014
	(2.15)	(-0.37)	(0.36)	(3.45)	(-0.12)	(0.12)
<i>M/B</i>	-0.027***	0.021***	-0.020***	-0.043***	0.016**	-0.024**
	(-4.30)	(2.76)	(-2.89)	(-7.74)	(1.99)	(-2.09)
<i>indBOARD</i>	0.036	-0.078	0.010	0.018	0.010	-0.018
	(0.69)	(-0.15)	(0.15)	(0.04)	(0.16)	(-0.76)
<i>CEOOWN%</i>	0.018	-0.020	0.014	-0.043	0.020#	-0.027#
	(0.88)	(-0.78)	(0.78)	(-0.61)	(1.43)	(-1.44)
<i>CHAIRCEO</i>	0.008	-0.012*	0.092	0.053	-0.042	0.012
	(0.60)	(-1.64)	(0.74)	(0.54)	(-0.29)	(0.88)
<i>BSIZE</i>	0.076**	-0.053	0.048	0.075***	-0.048	0.058
	(2.25)	(-1.26)	(1.26)	(2.80)	(-1.23)	(1.24)
<i>AUDITFEE</i>	0.030#	0.016	0.027	0.013	0.049**	-0.012**
	(1.50)	(0.66)	(-0.56)	(0.89)	(2.19)	(-2.19)
<i>DIVIDENTS</i>	0.020***	0.040	0.015	-0.058	0.039	0.180#

	(3.00)	(0.35)	(0.98)	(-0.59)	(1.07)	(1.51)
<i>ANREST</i>	0.092	-0.071	-0.068	0.016	-0.013**	-0.013
	(0.59)	(-1.07)	(-0.37)	(0.88)	(-1.99)	(-0.49)
<i>ANREST</i> × <i>POST</i>	0.025	-0.028#	-0.022	0.043	-0.013*	-0.017
	(0.82)	(-1.45)	(-0.75)	(1.10)	(-1.75)	(-0.82)
Fixed Effect	Included	Included	Included	Included	Included	Included
N	897	897	897	907	907	907
Adjusted R^2	0.197	0.224	0.189	0.218	0.292	0.174
<i>F</i> statistics	9.81***	11.51***	9.89***	11.27***	17.71***	9.20***

^aThe definitions of all variables are summarized in the Appendix.

^bAsterisks *, **, *** denote two-tailed significance levels at 10%, 5%, and 1%, respectively; pound key # denotes one-tailed significance level at 10%.

APPENDIX
Variable Definitions

Variables	Pred. Sign	Definitions
<i>Dependent Variables</i>		
RESTATED		An indicator variable that equals 1 if a company's year t reported earnings is restated, and zero otherwise.
CASH_AC		Natural log of annual cash payment to audit committee, including free and deferred cash but not meeting fees.
CASH_CEO		Natural log of annual cash payment to CEO.
CASH_OthB		Natural log of annual cash payment to other board members, including free and deferred cash but not meeting fees.
EQUITY_AC		Natural log of annual equity-based compensation to audit committee, including stocks and options.
EQUITY_CEO		Natural log of annual equity-based compensation to CEO, including stocks and options.
EQUITY_OthB		Natural log of annual equity-based compensation to other board members, including stocks and options.
CASH%_AC		Ratio of audit committee's cash payment to total compensation.
CASH%_CEO		Ratio of CEO's cash payment to total compensation.
CASH%_OthB		Ratio of other board member's cash payment to total compensation.
EQUITY%_AC		Ratio of audit committee's equity-based compensation to total compensation.
EQUITY%_CEO		Ratio of CEO's equity-based compensation to total compensation.
EQUITY%_OthB		Ratio of other board member's equity-based compensation to total compensation..
S_BOND		Natural log of restricted stocks and long-term options.
W_BOND		Natural log of unrestricted stocks and short-term options.
S_BOND%		Ratio of restricted stocks and long-term options to total audit committee compensation.
W_BOND%		Ratio of unrestricted stocks and short-term options to total audit committee compensation.
<i>Control Variables used in Model (1)</i>		
LnASSET	-	Natural log of a company's total assets.
BIG4	-	An indicator variable that equals 1 if a company's year t financial statements are audited by a Big 4, and 0 otherwise.
GOING	+	An indicator variable that equals 1 if a company receives a going concern opinion in year t , and 0 otherwise.

M&A	+	An indicator variable that equals 1 if there was a merger or acquisition in the year being restated, and 0 otherwise.
ZSCORE	-	The deciles rank of Altman's (1968) Z-score.
ROA_ind	-	The industry-median-adjusted ROA (return on assets).
ACSIZE	-	Number of audit committee members.
MEETINGTIMES	-	The number of yearly audit committee meetings.
ACCEXPERTISE	-	Ratio of the number of audit committee members who are CPA or have accounting-related experience to audit committee size.
STOCK_CEO	+	Natural log of total stock compensation to CEO.
OPTION_CEO	+	Natural log of total option compensation to CEO.
STOCK%_CEO	+	Ratio of CEO's stock compensation to total compensation.
OPTION%_CEO	+	Ratio of CEO's option compensation to total compensation.

Control Variables used in Model (2)

LnASSET	?	The same as that defined in Model (1).
SALES	?	Net sales scaled by total assets.
LEVERAGE	?	Long-term debt divided by total assets.
ROA_ind	?	The same as the above definition.
M/B	?	The market-to-book ratio.
IndBOARD	?	Ration of the number of independent board members to board size.
CEOOWN%	?	CEO's ownership.
CHAIRCEO	?	An indicator variable that equals 1 if the CEO chairs the board.
BSIZE	?	The number of directors in the board.
AUDITFEE	?	Annual audit fees divided by total assets.
DIVIDENDS	?	An indicator variable that equals 1 if a company pays cash dividends.
ANREST	?	An indicator variable that equals 1 if a company announces a restatement.
POST	?	An indicator variable that equals 1 if the year is after the restatement announcement, and zero otherwise.

Audit Committee Compensation Variables

CASH_AC	?	The same as that defined in the dependent variable.
STOCK_AC	+	Natural log of annual stock compensation to audit committee, including common stocks, restricted stocks, deferred stock units and phantom stock units.
OPTION_AC	+	Natural log of annual option compensation to audit committee, including short-term and long-term options.
UNRESTRSTOCK	+	Natural log of total unrestricted stocks.
RESTRSTOCK	+	Natural log of total restricted stocks, including deferred stock units

		and phantom stock units.
SHORTOPTION	+	Natural log of short-term option to audit committee.
LONGOPTION	+	Natural log of long-term option to the audit committee.
CASH%_AC	?	The same as the above definition.
STOCK%_AC	+	Ratio of stocks to total audit committee compensation.
OPTION%_AC	+	Ratio of options to total audit committee compensation.
UNRESTRSTOCK%	+	Ratio of unrestricted stocks to total audit committee compensation.
RESTRSTOCK%	+	Ratio of restricted stocks to total audit committee compensation.
SHORTOPTION%	+	Ratio of short-term options to total audit committee compensation.
LONGOPTION%	+	Ratio of long-term options to total audit committee compensation.

國科會補助計畫衍生研發成果推廣資料表

日期:2013/01/13

國科會補助計畫	計畫名稱: 經理人利用會計師還是審計委員會做假帳?
	計畫主持人: 俞洪昭
	計畫編號: 100-2410-H-004-058- 學門領域: 會計
無研發成果推廣資料	

100 年度專題研究計畫研究成果彙整表

計畫主持人：俞洪昭		計畫編號：100-2410-H-004-058-				計畫名稱：經理人利用會計師還是審計委員會做假帳？	
成果項目		量化			單位	備註（質化說明：如數個計畫共同成果、成果列為該期刊之封面故事...等）	
		實際已達成數（被接受或已發表）	預期總達成數（含實際已達成數）	本計畫實際貢獻百分比			
國內	論文著作	期刊論文	0	0	100%	篇	
		研究報告/技術報告	0	0	100%		
		研討會論文	0	0	100%		
		專書	0	0	100%		
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（本國籍）	碩士生	0	0	100%	人次	
		博士生	0	0	100%		
		博士後研究員	0	0	100%		
		專任助理	0	0	100%		
國外	論文著作	期刊論文	1	2	40%	篇	Yu, H.C. 2011. Legal systems and auditor independence. Review of Accounting Studies 16 (June): 377-411. (國科會 A+ 級期刊).
		研究報告/技術報告	0	0	100%		
		研討會論文	0	0	100%		
		專書	0	0	100%		章/本
	專利	申請中件數	0	0	100%	件	
		已獲得件數	0	0	100%		
	技術移轉	件數	0	0	100%	件	
		權利金	0	0	100%	千元	
	參與計畫人力（外國籍）	碩士生	0	0	100%	人次	
		博士生	0	0	100%		
		博士後研究員	0	0	100%		
		專任助理	0	0	100%		

<p>其他成果 (無法以量化表達之成果如辦理學術活動、獲得獎項、重要國際合作、研究成果國際影響力及其他協助產業技術發展之具體效益事項等，請以文字敘述填列。)</p>	<p>無</p>
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	成果項目	量化	名稱或內容性質簡述
科 教 處 計 畫 加 填 項 目	測驗工具(含質性與量性)	0	
	課程/模組	0	
	電腦及網路系統或工具	0	
	教材	0	
	舉辦之活動/競賽	0	
	研討會/工作坊	0	
	電子報、網站	0	
	計畫成果推廣之參與(閱聽)人數	0	

國科會補助專題研究計畫成果報告自評表

請就研究內容與原計畫相符程度、達成預期目標情況、研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）、是否適合在學術期刊發表或申請專利、主要發現或其他有關價值等，作一綜合評估。

1. 請就研究內容與原計畫相符程度、達成預期目標情況作一綜合評估

達成目標

未達成目標（請說明，以 100 字為限）

實驗失敗

因故實驗中斷

其他原因

說明：

2. 研究成果在學術期刊發表或申請專利等情形：

論文： 已發表 未發表之文稿 撰寫中 無

專利： 已獲得 申請中 無

技轉： 已技轉 洽談中 無

其他：（以 100 字為限）

3. 請依學術成就、技術創新、社會影響等方面，評估研究成果之學術或應用價值（簡要敘述成果所代表之意義、價值、影響或進一步發展之可能性）（以 500 字為限）

This study investigates managers' decision of relying on auditors or audit committees to cook the books, taking into account the economic bond that may impair their independence. This research question bears three policy implications. First, new regulations may be needed to the party whose oversight effectiveness is relatively weaker due to relatively stronger economic bond with the managers. Second, the empirical evidence provides insights into the association between company characteristics and its relative reliance on auditors or audit committees to cook the books. Finally, securities regulators may gain an understanding as to whether managers use auditors and audit committees as strategic substitutes or strategic complements in ensuring financial reporting credibility. From a regulation's perspective, it is desirable that managers regard auditors and audit committees as strategic complements because this is consistent with Sections 204 and 301 of SOX.

While prior research has examined the effects of auditor independence and audit committee independence alone on managers' financial reporting quality, few attempts have been made to compare the relative oversight effectiveness of these two types of gatekeepers when they face financial incentives motivating them to

compromise their independence. This study provides a first step to provide some empirical evidence on this issue.