

An International Analysis of Director Equity Incentives and Earnings Management

Min-Yu (Stella) Liao
Illinois State University

Stephen P. Ferris
University of Missouri

Using data from 29 countries, we find that firms whose directors awarded higher percentage equity-based compensation are associated with greater use of earnings management. Such positive relation persists regardless whether a director serves on the audit committee, or whether a director is an independent or inside director. However, this association is reversed at firms with greater board or audit committee independence. Finally, using a matched sample of ADRs and non-ADRs, we show that although ADRs exhibit less earnings management relative to non-ADRs, having an ADR does not deter the attempt of directors with high equity incentives to manipulate earnings.

INTRODUCTION

The use of equity-based compensation has increased significantly since 1980s (Bergstresser and Philippon, 2006), and the use of stock options in executive compensation packages often represents the largest portion of CEO pay (Hall and Murphy, 2003, Hall and Liebman, 1998). This has raised significant attention among regulators and researchers. The agency theory, which suggests that equity-based compensation improves managers' incentive to maximize shareholder wealth (Maug, 1997), has been used in the literature as the primary driving factor of the rise of equity-based compensation. Supporting this view, studies on executive or director compensation have documented a positive association between firm performance and the use of equity-based compensation (Mehran, 1995; Hall and Liebman, 1998; Palia, 2001; Bryan and Klein, 2004).

The rise of equity-based compensation in executive pay packages, however, has also led researchers and regulators to raise concerns that equity-based compensation may induce managers to increase the short-term stock prices through earnings manipulations. Stein (1989) argues that managers use their accounting discretion to manage earnings in order to keep the short-term stock price high, given that the capital market uses current earnings to predict future earnings when pricing firm equity. Dechow and Skinner (2000) contend that managers have become increasingly sensitive to the level of their firms' stock prices and earnings, given the increased importance of equity-based compensation. Consequently, managers' incentives to manage earnings to maintain and improve those valuations have also increased. Harris and Bromiley (2007) also argue that while managers with an incentive to increase reported earnings might improve real financial performance, managers might also attempt to increase reported performance through misrepresentation of the firm's financial outcomes.

There are several studies that provide empirical evidence supporting the positive relation between executive equity-based compensation and earnings management (Cheng and Warfield, 2005; Bergstresser and Philippon, 2006). These findings are consistent with the notion that managers whose wealth is more sensitive to stock performance are more likely to manipulate earnings in order to increase current earnings or to prevent future earnings disappointments.

It is important to note; however, that this literature is based on an analysis of either exclusively U.S. firms or an analysis of a single country. For example, Ye (2014) examines the impact of independent directors' cash compensation on firms' financial reporting quality using a sample of Chinese listed companies. Iatridis and Kadorinis (2009) find that firms in U.K. tend to use earnings management to improve their financial numbers and subsequently reinforce their compensation and meet and/or exceed financial analysts' earnings forecasts. There is, to our knowledge, no study examining the relation between the use of equity-based compensation and the incidence of earnings management internationally.

This study aims to examine how director compensation affects the incidence of earnings management globally. While there is literature examining director compensation generally, little is known about the relation between director equity incentives and the use of earnings management. For example, Boumosleh (2009) finds that director stock option compensation is associated with higher levels of earnings management. However, Sengupta and Zhang (2015) find the average ratio of equity-based pay to total pay of independent board members to be positively related to a firm's disclosure quality. The evidence presented in the literature is inconsistent, indicating that there are two competing relations between the use of equity-based compensation in director pay packages and the extent to which a firm manipulates its earnings. That is, directors with higher equity incentives might exert more diligent monitoring, work to mitigate agency problems, improve real firm performance, and engage in less use of earnings management (Cordeiro, Veliyath, and Erasmus, 2000; Becher, Campbell, and Frye, 2005; Andreas, Rapp, and Wolff, 2012; Sengupta and Zhang, 2015). Directors with higher equity incentives, on the other hand, might also be induced to increase the short-term stock prices or to avoid future earnings disappointments through earnings management (Stein, 1989; Dechow and Skinner, 2000; Harris and Bromiley, 2007; Boumosleh, 2009).

Using 4,952 firm-year observations from 29 countries, or 11,723 director-year compensation data, we examine the relation between director equity-based compensation and earnings management. We find that firms whose directors awarded greater percentage equity-based compensation exhibit greater use of earnings management. This is consistent with the concern raised by investors and regulators that equity-incentives encourage directors to increase short-term stock prices or to avoid future stock price shocks. We show that a one percentage point increase in the average percentage of director equity-based compensation increases the use of earnings management to a level that approximates 1.7% of the value of a firm's total assets.

We also examine equity incentives of independent and inside directors, or directors with and without audit committee membership. We discover that all directors are motivated by their equity incentives to manipulate earnings, regardless whether a director serves on the audit committee, or whether a director is classified as an independent or inside director. However, this agency problem can be mitigated at firms with greater board (audit committee) independence measured by the proportion of independent directors on a board (audit committee). This suggests that when there are more independent directors on a board (audit committee), the use of equity incentives can mitigate agency problems and improve board monitoring.

Further, we investigate whether firms that cross-list on U.S. stock exchanges exhibit different levels of earnings management relative to firms that do not cross-list. We use propensity score matching approach and align each ADR firm with a non-ADR firm from the same country and industry as well as comparable firm size (total assets). Although we find that ADR firms exhibit less use of earnings management relative to non-ADR firms, we do not find evidence that cross-listing effectively reduces the practice of earnings management when directors are awarded greater percentage equity-based compensation. This implies that the ineffectiveness of monitoring from directors can only be partially mitigated through stronger governance standards. With strong equity incentives, director monitoring is

compromised, and the ineffectiveness cannot be mitigated by stock exchange regulation and listing requirements.

This study contributes to the literature in two ways. First, this study helps resolve the conflicting evidence in the literature regarding whether director equity-based compensation is associated with superior or inferior earnings reporting quality. The literature is not only limited but also inconclusive on the relationship between director compensation and their monitoring in earnings reporting quality (Sengupta and Zhang, 2015; Boumosleh, 2009). While the existing literature has largely focused on the relation between CEO compensation and earnings management, this study uses the compensation structure of directors to identify whether directors with higher percentage equity-based compensation affect a firm's use of earnings management.

Second, the sample used in this study is a considerable expansion of that presented in the existing literature. This study uses a set of international firms to expand our understanding of director compensation outside the U.S. Much of the prior literature on director compensation has used U.S. samples for testing. Expanding samples outside the U.S. sheds light in the compensation literature in a global setting.

The remainder of this study is organized as follows. Section 2 discusses the prior literature. Section 3 contains the hypothesis development. Section 4 describes the choice and measure of earnings management. Section 5 describes data collection and sample construction. We present our empirical findings in Section 6. Section 7 contains the test for robustness. Section 8 provides a brief summary of our findings and a discussion of their importance to the literature.

LITERATURE REVIEW

Regulators and investors have raised concerns that equity incentives may induce managers to take manipulative actions that boost the short-term stock price in order to maximize the value of their compensation. Healy (1985) is the first to empirically test and suggest that managers select the level of discretionary accruals that maximizes the expected value of their bonus awards. Several follow-up studies also document evidence that earnings manipulation is associated with executive bonus plans (Kaplan, 1985; Gaver et al. 1995; Holthausen et al, 1995; Degeorge et al. 1999). Since then, a body of considerable research has examined the relation between executive compensation and the use of earnings management. For instance, Baker et al. (2003) find that high stock option compensation is associated with income-decreasing discretionary accruals in periods leading up to option awards. Bartov and Mohanram (2004) show that managers inflate earnings through discretionary accruals prior to abnormally large stock option exercises. Safdar (2003) finds that earnings are managed upwards during periods in which they exercise options. Burns and Kedia (2003) find that earnings restatements are more common at firms where CEOs have larger option portfolios. Cheng and Warfield (2005) find evidence that managers with high equity incentives are more likely to report earnings that meet or just beat analysts' forecasts. They also find that those managers are less likely to report large positive earnings surprises. Bergstresser and Philippon (2006) find that the use of discretionary accruals to manipulate reported earnings is more pronounced at firms where the CEO's potential total compensation is more closely tied to the value of stock and option holdings. Meek, Rao, and Skousen (2007) document a positive relationship between CEO stock option compensation and discretionary accruals. Harris and Bromiley (2007) also find a positive association between the fraction of CEO compensation in options and the probability of accounting misrepresentation identified by the General Accounting Office.

While the literature has largely focused on executive compensation (see Murphy (1998) for a review), more recently, researchers have turned their attention to how directors are compensated given the importance of the board for protecting and enhancing shareholder wealth. A general conclusion from these studies is that firm and director characteristics explain the variation in compensation structures (Ryan and Wiggins, 2004; Yermack, 2004; Becher, Campbell, and Frye, 2005; Farrell, Friesen, and Hersch, 2008; Andreas, Rapp, and Wolff, 2012), and that director compensation is an important

determinant of firm performance (Cordeiro, Veliyath, and Erasmus, 2000; Perry, 2000; Brick, Palmon, and Wald, 2006).

Nevertheless, the study examining how the structure of director compensation affects a firm's earnings reporting quality is limited and the results are inconsistent. McClain (2012) and Sengupta and Zhang (2015) find the average ratio of equity-based pay to total pay of independent board members to be positively related to a firm's disclosure quality. They conclude that equity-based compensation provides incentives to independent directors to push for better disclosure quality. In contrast, Boumosleh (2009) finds that director stock option compensation is associated with higher levels of earnings management. Archambeault et al. (2008) document a positive relationship between stock option compensation for audit committee members and the incidence of fraudulent or erroneous financial restatement. Cullinan et al. (2008) and Persons (2012) find no association between director stock compensation and the probability of misstatements or fraud. Instead, they show that it is stock option compensation for directors being positively associated with earnings misstatement and fraud. These studies document inconsistent evidence regarding the association between director equity-based compensation and a firm's earnings reporting quality.

Moreover, the literature of the role of board of directors with respect to a firm's financial reporting quality focuses mainly on director independence and the existence or independence of audit committee (Beasley, 1996; Dechow, Sloan, and Sweeney, 1996; Klein, 2002; Xie, DaDalt, and Davidson, 2003; Park and Shin, 2004; Cornett, Marcus, and Tehranian, 2008).

Despite the importance of director monitoring, prior research has focused on executive equity incentives rather than those of the directors. Jensen (1993) contends that boards of directors are ineffective when the board's equity ownership is small. As evidenced that equity incentives can either motivate diligent monitoring or induce manipulative earnings reporting, we believe that it is worth investigating the role of director equity incentives in a firm's earnings reporting quality globally.

HYPOTHESES DEVELOPMENT

Incentive compensation leading to share ownership may make directors better monitors. For example, Perry (2000) finds the use of incentive compensation by boards results in greater CEO turnover following poor performance. Bhagat, Carey, and Elson (1999) find a link between CEO replacement and the equity-holdings of the directors. Furthermore, Hermalin and Weisbach (1998) and Gillette, Noe, and Rebello (2003) develop models where incentive compensation for directors increases their monitoring efforts. Bryan and Klein (2004) hypothesize and document evidence that firms with more agency problems make greater use of option compensation for outside directors. In addition, Fich and Shivdasani (2005) find that investors and analysts react favorably to the adoptions of stock option plans. They interpret this as evidence that such compensation plans provide the alignment of incentives between management and the firm's shareholders, as well as incentives for directors to monitor. Following the notion that compensation structure using either shares or stock options can improve director efforts and monitoring, we investigate whether firms that award greater equity-based compensation to their directors are associated with better earnings reporting quality. Therefore, we hypothesize:

H1a: Firms with directors awarded greater percentage equity-based compensation are associated with less use of earnings management.

However, while incentive compensation schemes motivate directors to improve monitoring and firm performance, directors with incentive compensation might also attempt to increase reported performance through misrepresentation of the firm's financial outcomes (Harris and Bromiley, 2007). By improving reported performance, such activities can elevate stock prices and director compensation, at least in the short term. Consistent with the literature that the use of equity-based compensation in executive pay packages increases the incidence of earnings manipulations (Cheng and Warfield, 2005; Bergstresser and Philippon, 2006), we propose a competing hypothesis in contrast to H1a. That is, we hypothesize:

H1b: Firms with directors awarded greater percentage equity-based compensation are associated with greater use of earnings management.

MEASURING EARNINGS MANAGEMENT

While there is no ideal way to measure corporate earnings management, we elect to use discretionary or abnormal accruals as our proxy. Discretionary accruals can better capture earnings management, as suggested by Dechow, Sloan, and Sweeney (1995) and Teoh, Welch, and Wong (1998) that some accrual adjustments are appropriate and necessary depending on the business conditions faced by the firm in the industry. For example, fixed-asset intensive firms are expected to have high depreciation. This type of accrual is expected by investors. Thus, the discretionary components of accruals are assumed to be managed by the managers. Since discretionary accruals allow managers to conceal their poor performance or smooth their reported earnings, the use of discretionary accruals is inversely associated with earnings reporting quality. The use of accounting accruals as a proxy for earnings management is widely used in the literature, including studies by Healy (1985), DeAngelo (1986), Jones (1991), Dechow, Sloan, and Sweeney (1995), Dechow, Kothari, and Watts (1998), Teoh et al (1998), Dechow and Skinner (2000), Dechow and Dichev (2002) and Kothari et al. (2005).

To begin our estimation of earning management, we follow Dechow, Sloan, and Sweeney (1995) and calculate total accruals as the change in non-cash current assets minus the change in current liabilities excluding the current portion of long-term debt, minus depreciation and amortization as expressed below:

$$Total\ Accruals_{it} = (\Delta CA_{it} - \Delta Cash_{it}) - (\Delta CL_{it} - \Delta STD_{it}) - Dep_{it} \quad (1)$$

In equation (1), $\Delta CA_{i,t}$ represents the change in total current assets for firm i in year t , $\Delta Cash_{i,t}$ denotes change in cash / cash equivalents for firm i in year t , $\Delta CL_{i,t}$ is the change in total current liabilities for firm i in year t , $\Delta STD_{i,t}$ measures the change in short-term debt included in current liabilities for firm i in year t , and $Dep_{i,t}$ are the depreciation and amortization expenses for firm i in year t .

Using this measure for total accruals, we then use the “modified Jones (1991) model” identified below in equation (2) to estimate non-discretionary accruals:

$$\frac{Total\ Accruals_{it}}{Assets_{it-1}} = \alpha \frac{1}{Assets_{it-1}} + \beta_1 \frac{\Delta Sales_{it} - \Delta Receivables_{it}}{Assets_{it-1}} + \beta_2 \frac{PPE_{it}}{Assets_{it-1}} \quad (2)$$

In equation (2), $Total\ Accruals_{it}$ reflects total accruals for firm i in year t , $Assets_{i,t-1}$ denotes total assets for firm i in year $t-1$, $\Delta Sales_{i,t}$ is the change in sales for firm i in year t , $\Delta Receivables_{i,t}$ measures accounts receivables for firm i in year t , and $PPE_{i,t}$ is the property, plant, and equipment for firm i in year t .

Finally, discretionary or abnormal accruals as a fraction of assets, AAC, are then calculated as the difference between total actual accruals and “normal” or non-discretionary accruals as shown in equation (3):

$$AAC_{it} = \frac{Total\ Accruals_{it}}{Assets_{it-1}} - \left(\hat{\alpha} \frac{1}{Assets_{it-1}} + \hat{\beta}_1 \frac{\Delta Sales_{it} - \Delta Receivables_{it}}{Assets_{it-1}} + \hat{\beta}_2 \frac{PPE_{it}}{Assets_{it-1}} \right) \quad (3)$$

Consistent with the existing literature, we use the absolute values of the discretionary accruals, Abs_AAC , as our measure of earnings management since it captures earnings management which both increases and decreases reported income. In this study’s context, directors can benefit from income-increasing abnormal accruals. Directors can also benefit from smoothed earnings by transferring earnings from one period to another. The absolute values of the discretionary accruals measure the total amount of

earnings transfer without being sensitive to the precise timing of when earnings are increased or decreased (Bergstresser and Philippon, 2006).

Additionally, we use an alternative measure of earnings management to ensure that our results are not driven by the choice of variables. Following Kothari, Leone, and Wasley (2005), who argue that performance matching is crucial for estimating accounting accruals, we use their ROA augmented model as presented below in equation (4):

$$\frac{\text{Total Accruals}_{i,t}}{\text{Assets}_{i,t-1}} = \alpha \frac{1}{\text{Assets}_{i,t-1}} + \beta_1 \frac{\Delta \text{Sales}_{i,t}}{\text{Assets}_{i,t-1}} + \beta_2 \frac{\text{PPE}_{i,t}}{\text{Assets}_{i,t-1}} + \beta_3 \frac{\text{ROA}_{i,t-1}}{\text{Assets}_{i,t-1}} \quad (4)$$

where $\text{Total Accruals}_{i,t}$ is total accruals for firm i in year t , $\text{Assets}_{i,t-1}$ denotes total assets for firm i in year $t-1$, $\Delta \text{Sales}_{i,t}$ represents change in sales for firm i in year t , $\text{PPE}_{i,t}$ measures property, plant, and equipment for firm i in year t , and $\text{ROA}_{i,t-1}$ is the return on assets for firm i in year $t-1$. We use the absolute value of ROA augmented abnormal accruals, Abs_AAC2 (ROA augmented), as our second proxy for earnings reporting quality.

SAMPLE AND DATA

Sample Construction and Data Sources

We start with the BoardEx database to identify our sample of firms and directors. BoardEx provides information concerning the demographics, employment history, and compensation of corporate directors from 1999 through 2012. We require that each sample firm has at least three directors for each year reported in BoardEx and that all candidate firms be public. We then use the Compustat Global database to obtain the necessary financial data for these sample firms. All financial variables are winsorized at 1% and 99% level. We require that each country-industry have at least 10 observations for estimating abnormal accruals and that each firm has non-missing accrual components. These filters yield a final sample of 4,952 firm-year observations distributed over 29 countries, or 11,723 director-year observations of equity-based compensation.

Tiered Boards

An important part of any global study of corporate directors is the correct identification of board assignment. This issue occurs because globally the supervision of corporate management is achieved with two different models. Boards of listed companies in the U.S., Canada, and U.K. are based on a one-tier model of oversight. That is, there is only one board that supervises managers and consists of executive and non-executive directors. Other countries, such as the Netherlands, Germany, Austria, Finland, Norway, and Denmark require the use of a two-tier system. In these countries, there is both a management and a supervisory board. The management board is entirely composed of executive directors, and is responsible for setting corporate strategy and overall direction. The supervisory board is entirely composed of non-executive directors, and its main tasks are to appoint and dismiss the members of the management board and to monitor them. There are also countries, such as Belgium, Portugal, France, and Spain, which allow firms to choose between the two systems. (Demb and Neubauer, 1992; Maassen and Bosch, 1999; Jungmann, 2006.)

Our sample consists of independent and inside directors. Although BoardEx does not distinguish between management board and supervisory board directors, the identification of executive or non-executive (i.e. independent) directors implicitly confirms the board to which they belong. Thus, for the analysis concerning the effect of equity-based compensation of independent or inside directors, in those countries where two-tier boards are either required or allowed, we effectively select directors from either the supervisory board or management board given the classification described above.

Director Compensation

BoardEx provides compensation data in various forms. A director's cash compensation comes in the forms of annual salary, bonus, pension, and other annual ad hoc payments such as relocation and fringe benefits. For firms that offer their directors equity-based compensation, BoardEx also provides the value of stocks and options granted for each director. Stock grants are calculated by multiplying the number of shares granted times the closing stock price of the report date. Option values are estimated based on the latest closing stock price using the Black-Scholes option pricing model. Volatility is measured using a 100-day historic volatility. Country average of the option expiry date is used if the actual expiry date is unavailable. Some firms made additional awards that require a performance target to be met before realization of the award. Consistent with Ryan and Wiggins (2004), we include these irregular awards in the analysis. We then calculate the percentage of director equity-based compensation as director equity-based compensation divided by director total compensation.

Sample Summary Statistics

We present our summary statistics of measures of earnings management, percentage of equity-based compensation, as well as board and firm characteristics in Table 1. We provide a list of variable definitions in Appendix. As shown in Table 1, the absolute values of abnormal accruals are, on average, 0.08 using either modified Jones model or ROA augmented model. This indicates that the average level of earnings management is 8% of the firm's total assets. Equity-based compensation accounts, on average, 46% of director total compensation. Presence of audit committee is an indicator variable that equals one if an audit committee exists. Our summary statistics show that 85% of the firms in the sample have an audit committee. The mean board size for our sample firms is 11.85, and 65% of the directors on a board are outside directors. We also note that, on average, CEO has been in the office for 5.76 years.

TABLE 1
SUMMARY STATISTICS

Variable	Mean	Median	Std Dev
<i>Earnings management</i>			
Abs_AAC (Modified Jones Model)	0.075	0.044	0.110
Abs_AAC2 (ROA Augmented Model)	0.079	0.042	0.168
<i>Board characteristics</i>			
% Equity-Based Compensation	0.456	0.424	0.270
Presence of audit committee	0.853	1.000	0.355
Board size	11.849	9.000	7.571
% of independent director	0.654	0.667	0.205
CEO tenure	5.760	4.000	5.246
<i>Firm characteristics</i>			
Firm size (Log of total assets)	6.179	6.120	2.681
Market-to-book ratio	1.756	1.240	2.404
ROA	0.014	0.054	0.297
ABS(Δ NI)	3.619	0.562	37.148
Neg. NI	0.261	0.000	0.439
Leverage	0.576	0.548	1.643

Table 1 also provides useful summary characteristics about the sample firms themselves. The median market-to-book ratio is 1.24 while the median ROA is 0.05. ABS (Δ NI) measures the absolute change in

the previous year's income before extraordinary items divided by total assets. It averages 3.62 in the sample. Neg. NI is a binary indicator variable that equals one if a firm had two or more consecutive years of negative income. The mean value of Neg. NI is 0.26, indicating that 26% of our sample firms had two or more consecutive years of poor performance. Finally, we note that the average debt ratio of our sample firms is 58%.

EMPIRICAL RESULTS

Overall Director Equity-Based Compensation and Earnings Management

In this section, we discuss our empirical analysis of the impact of director equity-based compensation on corporate financial reporting quality. Because the analysis is performed at the firm-year level, we use the average equity-based compensation across all directors from each firm in each year. Consistent with Bergstresser and Philippon (2006), we use the lagged compensation measure. Table 2 presents the “univariate” regression results using only the primary variable of interest, the percentage of director equity-based compensation, as the sole explanatory variable. The dependent variable is the absolute value of abnormal accruals estimated using the modified Jones (1991) model in Column (1), and is the absolute value of abnormal accruals estimated using the ROA augmented model in Column (2). The coefficients are significantly positive in both model specifications. In Column (1), the coefficient of % *director equity-based compensation* is 0.0174, indicating that a one percentage point increase in a firm's average director equity-based compensation increases the use of earnings management by an amount that is 1.7% of total assets. The magnitude is not only statistically significant, but is equal to 23% of the sample mean (0.075).

TABLE 2
UNIVARIATE REGRESSION OF DIRECTOR EQUITY-BASED COMPENSATION AND EARNINGS MANAGEMENT

Dependent variable:	Abs_AAC (Modified Jones Model)	Abs_AAC2 (ROA Augmented Model)
	(1)	(2)
Intercept	-0.0218	-0.0300
% director equity-based compensation _{t-1}	0.0174*** (0.0016)	0.0189*** (<.0001)
N	4,952	4,952
R-square	0.0626	0.0841

Note: All models include country, year, and industry fixed effects. P-values are provided in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

We include country fixed effect to control for the institutional characteristics across countries. We also include industry fixed effect using two-digit SIC code because some industries have greater accounting complexity (Francis and Gunn, 2015). Finally, year fixed effect is included to capture any intertemporal changes of director compensation and a firm's use of earnings management.

TABLE 3
MULTIVARIATE REGRESSION OF DIRECTOR EQUITY-BASED COMPENSATION AND EARNINGS MANAGEMENT

Dependent variable:	Abs_AAC (Modified Jones Model)	Abs_AAC2 (ROA Augmented Model)
	(1)	(2)
Intercept	0.0251	0.0373
% director equity-based compensation t_{-1}	0.0193*** ($<.0001$)	0.0140** (0.0323)
Presence of audit committee	0.0044 (0.3718)	-0.0065 (0.5406)
Log of board size	0.0004 (0.9231)	0.0124** (0.0291)
% of independent director	-0.0331*** ($<.0001$)	-0.0104 (0.4415)
CEO tenure	0.0003 (0.1685)	-0.0003 (0.2413)
Firm size (Log of total assets)	-0.0079*** ($<.0001$)	-0.0137*** ($<.0001$)
Lag Market-to-book ratio	0.0043 (0.1182)	0.0030** (0.0343)
Lag ROA	-0.0218* (0.0660)	0.0033 (0.6627)
ABS(Δ NI)	0.0002*** ($<.0001$)	0.0003*** (0.0030)
Neg. NI	0.0015 (0.5153)	0.0086 (0.1651)
Lag Leverage	0.0434*** ($<.0001$)	0.0149 (0.2292)
N	4,952	4,952
R-square	0.1424	0.1729

Note: All models include country, year, and industry fixed effects. P-values are provided in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

In Table 3, we test the effect of director equity-based compensation on the incidence of earnings management with control variables suggested in the literature that affect a firm's decision to manipulate earnings. The dependent variable is the absolute value of abnormal accruals estimated using the modified Jones (1991) model in Column (1), and is the absolute value of abnormal accruals estimated using the ROA augmented model in Column (2). As shown in Table 3, the coefficients of *% director equity-based compensation* continue to be significantly positive in both model specifications. The results shown in Table 2 and Table 3 combined confirm our hypothesis 1b that directors with higher equity-based compensation are associated with greater use of earnings management.

We also control a number of board and firm characteristics that might be related to the use of earnings management by firms. Dechow et al. (1996) discover that firms with an audit committee are less likely to suffer accounting fraud. Marra, Mazzola, and Prencipe (2011) provide evidence that the existence of audit committees effectively constrains earnings management. Therefore, we include an indicator variable that equals one if a firm has an audit committee. Prior studies, such as Warfield et al. (1995), Dechow et al. (1995), DeFond and Jiambalvo (1994), and Klein (2002), find that a firm's size is negatively associated with earnings management, while the absolute change in the previous years' earnings divided by total

assets ($ABS(\Delta NI)$) is positively associated with earnings management. DeFond and Jiambalvo (1994) and Keating and Zimmerman (1999) contend that poor financial performance adversely affects bond covenants, earnings-based compensation, and the likelihood of executive dismissals. This leads to the conclusion that managers have stronger incentives to manage earnings if their firms suffer from poor performance. Consistent with this view, we use last year's ROA (Lag ROA) to capture past performance. We also follow Klein (2002) and include a binary indicator variable (Neg. NI) which equals one if a firm had two or more consecutive years of negative income as another proxy for past poor performance. We control for last year's leverage (Lag Leverage) because firms closer to violating debt covenants are more likely to make accounting choices that inflate earnings to avoid default (Watt and Zimmerman, 1990). Dechow et al. (2010) also find evidence that more highly levered firms choose income-increasing accounting methods and are more likely to smooth earnings. Consistent with Klein (2002), we also control a firm's past market-to-book ratio since this variable is related to board structure. A list of variable definitions is provided in the Appendix.

We find that larger firms exhibit less use of earnings management. The coefficients on last year's ROA and $ABS(\Delta NI)$ are also consistent with the prior literature showing that firms with poor past performance and higher $ABS(\Delta NI)$ exhibit greater levels of abnormal accruals. Consistent with the literature, we also find that leverage is positively associated with the use of earnings management.

Independent vs. Inside Director Equity-Based Compensation and Earnings Management

An extensive literature provides evidence that the effectiveness of board monitoring is a function of the composition of the board. Weisbach (1988), Borokhovich, et al. (1996), and Cornett et al. (2008) show that board composed largely of outsiders are more effective than boards dominated by insiders. Beasley (1996), Dechow, Sloan, and Sweeney (1996), Klein (2002), Xie, DaDalt, and Davidson (2003), and Cornett, Marcus, and Tehranian (2008) find that earnings management is negatively related to the proportion of independent directors on the board. The literature, however, ignores in its examination of the relation between the compensation scheme of independent and inside directors and the presence of earnings management. Given the importance of the monitoring function offered by independent directors, we decompose the effect of equity incentives into two parts: equity incentives of independent directors and equity incentives of inside directors

Table 4 presents the results concerning the relation between earnings management and the equity incentives of independent or inside directors. To examine the role of equity incentives of independent directors relative to that of inside directors, we follow Jiang, Petroni, and Wang (2010) and jointly examine the association between outside directors and inside directors' equity incentives and earnings management.

TABLE 4
EQUITY INCENTIVES OF INDEPENDENT DIRECTORS AND INSIDE DIRECTORS

Dependent variable:	Abs_AAC (Modified Jones Model)		Abs_AAC2 (ROA Augmented Model)	
Parameter	(1)	(2)	(3)	(4)
Intercept	0.0252	0.0068	0.0356	0.0301
% independent director equity-based compensation $t-1 = a$	0.0186*** (0.0002)	0.0847*** (0.0013)	0.0294*** ($<.0001$)	0.1490*** ($<.0001$)
% inside director equity-based compensation $t-1 = b$	0.0195*** (0.0006)	0.0453*** ($<.0001$)	0.0100*** (0.0032)	-0.0036 (0.7529)
a*c		-0.1138*** (0.0041)		-0.1983*** ($<.0001$)
b*c		-0.0470*** (0.0061)		0.0210 (0.2893)
Presence of audit committee	0.0044 (0.3782)	0.0043 (0.4202)	-0.0058 (0.3753)	-0.0077 (0.2910)
Log of board size	0.0004 (0.9231)	0.0001 (0.9747)	0.0123*** (0.0011)	0.0121*** (0.0021)
% of independent director = c	-0.0330*** ($<.0001$)		-0.0123 (0.3264)	
CEO tenure	0.0003 (0.1652)	0.0003 (0.1316)	-0.0004* (0.0735)	-0.0003* (0.0872)
Firm size (Log of total assets)	-0.0080*** ($<.0001$)	-0.0080*** ($<.0001$)	-0.0134*** ($<.0001$)	-0.0135*** ($<.0001$)
Lag Market-to-book ratio	0.0043 (0.1178)	0.0042 (0.1194)	0.0030 (0.1018)	0.0029 (0.1020)
Lag ROA	-0.0218* (0.0657)	-0.0216* (0.0604)	0.0034 (0.6318)	0.0029 (0.6710)
Abs (Δ NI)	0.0002*** ($<.0001$)	0.0001*** (0.0001)	0.0003*** ($<.0001$)	0.0003*** ($<.0001$)
Neg. NI	0.0016 (0.5322)	0.0011 (0.6413)	0.0082*** (0.0003)	0.0072*** (0.0006)
Lag Leverage	0.0434*** ($<.0001$)	0.0429*** ($<.0001$)	0.0148** (0.0316)	0.0142** (0.0301)
N	4,952	4,952	4,952	4,952
R-square	0.1424	0.1477	0.1737	0.1760

Note: All models include country, year, and industry fixed effects. P-values are provided in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

In Table 4, the dependent variable is the absolute value of abnormal accruals estimated using the modified Jones (1991) model in Columns (1) and (2), and is the absolute value of abnormal accruals estimated using the ROA augmented model in Columns (3) and (4). As shown in Table 4 Columns (1) and (3), both independent directors and inside directors' equity incentives are positively associated with the use of earnings management. This finding is consistent with the wealth of both independent and inside directors being more sensitive to future stock performance, which leads to increased use of earnings management (Cheng and Warfield, 2005).

However, when we interact director percentage of equity-based compensation with board independence measured by the proportion of independent directors on a board, the relation between equity incentives and earnings management is reversed. The coefficients of the interaction terms in Column (2) are significantly negative. This suggests that when there are more independent directors on a board, the use of equity incentives can mitigate agency problems and improve board monitoring, which leads to a better financial reporting quality. A similar pattern can be observed in Column (4), with the interaction term of independent directors' equity incentives and board independence being significantly negative. This further highlights the importance of the monitoring mechanism provided by independent directors.

Audit Committee Equity-Based Compensation and Earnings Management

Often, many of a board's responsibilities are delegated to committees. The audit committee primarily oversees the financial reporting process, and plays an important role in ensuring financial statement accuracy and reporting quality. Dechow, Sloan, and Sweeney (1996) find that the presence of an audit committee is negatively associated with accounting fraud. Klein (2002) report that audit committee independence reduces the use of earnings management. Xie, DaDalt, and Davidson (2003) conclude that firms with active audit committees are less likely to conduct earnings management. Bedard et al. (2004) provide evidence that earnings management is reduced in proportion to the financial expertise of the audit committee members and its independence. Krishnan (2005) determines that independent audit committees are less likely to be associated with internal control problems. Marra, Mazzola, and Prencipe (2011) report that the presence of an audit committee effectively constrains earnings management after the mandatory application of IFRS. In aggregate, these studies establish the importance of an independent and engaged audit committee. In this study, we examine whether the compensation structure of audit committee members compromises their ability to provide adequate monitoring and thus leads to poorer earnings reporting quality.

TABLE 5
EQUITY INCENTIVES OF AUDIT COMMITTEE MEMBERS AND NON-AUDIT COMMITTEE MEMBERS

Dependent variable:	Abs_AAC (Modified Jones Model)		Abs_AAC2 (ROA Augmented Model)	
	(1)	(2)	(3)	(4)
Intercept	0.0426	0.0280	0.0419	0.0231
% audit committee member equity-based compensation $t-1 = a$	0.0100** (0.0147)	0.0614** (0.0282)	0.0183*** (0.0018)	0.0853*** (0.0020)
% non-audit committee member equity-based compensation $t-1 = b$	0.0222*** (0.0010)	0.0246** (0.0295)	0.0116*** (0.0011)	0.0000 (0.9987)
a*c		-0.0606** (0.0318)		-0.0777** (0.0142)
b*c		-0.0028 (0.7622)		0.0119 (0.7008)
% of independent audit committee member = c	-0.0191*** (0.0005)		-0.0242*** (0.0006)	
Log of board size	-0.0008 (0.8362)	-0.0005 (0.8904)	0.0145*** ($<.0001$)	0.0151*** (0.0001)
% of independent director	-0.0243*** ($<.0001$)	-0.0274*** ($<.0001$)	0.0011 (0.8722)	-0.0043 (0.5177)
CEO tenure	0.0004 (0.1134)	0.0004 (0.1241)	-0.0004 (0.1207)	-0.0004* (0.0933)
Firm size (Log of total assets)	-0.0078*** ($<.0001$)	-0.0079*** ($<.0001$)	-0.0137*** ($<.0001$)	-0.0140*** ($<.0001$)
Lag Market-to-book ratio	0.0040 (0.1353)	0.0040 (0.1407)	0.0023 (0.1281)	0.0023 (0.1381)
Lag ROA	-0.0188* (0.0566)	-0.0187* (0.0580)	0.0029 (0.6558)	0.0027 (0.6714)
Abs (Δ NI)	0.0002*** ($<.0001$)	0.0002*** ($<.0001$)	0.0003*** ($<.0001$)	0.0003*** ($<.0001$)
Neg. NI	0.0040* (0.0968)	0.0043* (0.0694)	0.0091*** (0.0022)	0.0093*** (0.0014)
Lag Leverage	0.0412*** ($<.0001$)	0.0408*** ($<.0001$)	0.0136** (0.0451)	0.0132** (0.0397)
N	4,952	4,952	4,952	4,952
R-square	0.1336	0.1340	0.1732	0.1737

Note: All models include country, year, and industry fixed effects. P-values are provided in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

Table 5 presents the results concerning the effect of equity-based compensation on the use of earnings management between audit committee members and non-members. The dependent variable is the absolute value of abnormal accruals estimated using the modified Jones (1991) model in Columns (1) and (2), and is the absolute value of abnormal accruals estimated using the ROA augmented model in Columns (3) and (4). Consistent with Table 4, we jointly examine the relation of earnings management and the equity-based compensation awarded to directors with or without audit committee membership. The results presented in Columns (1) and (3) of Table 5 show that, regardless whether directors serving on the audit committee or not, directors receiving higher percentage equity-based compensation are associated with greater use of earnings management. Yet, consistent with Table 4, when we interact

percentage equity-based compensation of audit committee members with audit committee independence measured by the proportion of independent directors on the committee, the relation between equity incentives and earnings management is reversed. This indicates that although audit committee members awarded greater equity incentives may attempt to boost their compensation value by manipulating earnings, this agency problem is mitigated by increasing audit committee independence. That is, the monitoring and gatekeeping to ensure high quality of financial reporting lies upon the joint effect of audit committee independence and optimal compensation contracting through equity-based compensation.

Combining the results presented in Tables 4 and 5, we find evidence that board or audit committee independence is key to effective monitoring. When there are more independent directors on a board or serve on an audit committee, the use of equity-based compensation effectively improves director efforts in diligent monitoring, which leads to improved earnings reporting quality. These results provide important implications for investors and regulators concerning the effect of director equity-based compensation on earnings management. That is, although equity-based compensation may induce opportunistic actions such as earnings management, equity-based compensation can still be used as means to mitigate agency problems conditional on the level of boards or audit committee independence.

Equity-Based Compensation, American Depository Receipts (ADRs), and Earnings Management

In this section, we examine whether the country level governance can help to mitigate the agency problem that arises from director equity-based compensation to monitor the corporate management of earnings. Leuz et al. (2003) contend that better investor protection results in less earnings management because insiders enjoy fewer private benefits of control and hence have reduced incentives to conceal firm performance. They provide evidence that outside investor protection explains the variation in earnings management across countries. To address these international differences in earnings management due to variations in corporate governance, we examine the use of earnings management for firms that cross-list into the U.S. through ADRs (American Depository Receipts).

Because foreign firms from weak legal regimes that cross-list onto U.S. stock exchanges are required to comply with U.S. disclosure requirements, the bonding hypothesis of Coffee (1999, 2002) and Stulz (1999) implies that cross-listing improves a firm's corporate governance through improved disclosure rules and stricter securities laws. Coffee (1999, 2002) and Stulz (1999) contend that bonding is a mechanism through which foreign firms from countries with weak legal environment commit themselves to provide investors with greater shareholder protection. This bonding hypothesis is based on the difference in the development of investor protection between countries. The improvement in the governance of cross-listing firms is established in the literature with studies such as Reese and Weisbach (2002) and Doidge (2004).

We identify ADRs within our sample firms by using ADR lists from Citibank, Bank of New York, J.P. Morgan, and Deutsche Bank. We then use propensity score matching to align each ADR firm with a non-ADR firm from the same country and industry (two-digit SIC code) of similar firm size (total asset). Using this subset of sample allows us to examine whether the use of earnings management by directors with high equity incentives can be mitigated by cross-listing onto the U.S. exchanges and complying with U.S. corporate governance standards.

In Table 6, we present the results concerning the effect of director equity incentives on earnings management between ADRs and non-ADRs. The dependent variable is the absolute value of abnormal accruals estimated using the modified Jones (1991) model in Columns (1) and (2), and is the absolute value of abnormal accruals estimated using the ROA augmented model in Columns (3) and (4). We introduce an interaction term between director equity-based compensation and the *ADR* indicator variable which equals one if a firm is an ADR and zero otherwise. Although the coefficients of the *ADR* indicator variable are significantly negative, the coefficients of the interaction term between director equity compensation and the *ADR* indicator are not statistically significant. This suggests that although cross-listing can effectively reduce the practice of earnings management, it does not deter directors' attempt to manipulate earnings when directors are awarded high equity incentives. This result is consistent with our

hypothesis 1b that equity-based compensation induces opportunistic actions such as earnings management.

TABLE 6
DIRECTOR EQUITY INCENTIVES AND FOREIGN LISTING WITH ADRS

Dependent variable:	Abs_AAC (Modified Jones Model)		Abs_AAC2 (ROA Augmented Model)	
	(1)	(2)	(3)	(4)
Intercept	0.1329	0.1324	0.0738	0.0730
% director equity-based compensation t_{-1}	0.0088** (0.0196)	0.0163*** ($<.0001$)	0.0099** (0.0128)	0.0118** (0.0200)
ADR	-0.0104** (0.0390)		-0.0026* (0.0586)	
% director equity-based compensation t_{-1} * ADR	0.0160 (0.1507)	0.0008 (0.8656)	0.0016 (0.9080)	-0.0023 (0.7883)
Presence of audit committee	0.0033 (0.6011)	0.0039 (0.5404)	-0.0105 (0.1218)	-0.0104 (0.1357)
Log of board size	-0.0089* (0.0692)	-0.0094* (0.0581)	0.0034 (0.1346)	0.0032 (0.1439)
% of independent director	-0.0124** (0.0220)	-0.0116* (0.0413)	-0.0005 (0.9685)	-0.0003 (0.9826)
CEO tenure	0.0005** (0.0394)	0.0005** (0.0424)	-0.0007 (0.2022)	-0.0007 (0.2048)
Firm size (Log of total assets)	-0.0061*** ($<.0001$)	-0.0064*** ($<.0001$)	-0.0107*** ($<.0001$)	-0.0108*** ($<.0001$)
Lag Market-to-book ratio	0.0023** (0.0310)	0.0023** (0.0318)	-0.0010*** (0.0014)	-0.0010*** (0.0014)
Lag ROA	-0.0144** (0.0216)	-0.0145** (0.0219)	-0.0192** (0.0248)	-0.0192** (0.0251)
Abs (Δ NI)	0.0000*** ($<.0001$)	0.0000*** ($<.0001$)	0.0001*** ($<.0001$)	0.0001*** ($<.0001$)
Neg. NI	0.0103*** ($<.0001$)	0.0105*** ($<.0001$)	0.0180*** ($<.0001$)	0.0180*** ($<.0001$)
Lag Leverage	0.0470*** ($<.0001$)	0.0466*** ($<.0001$)	0.0266*** ($<.0001$)	0.0265*** ($<.0001$)
N	3,868	3,868	3,868	3,868
R-square	0.1680	0.1688	0.2097	0.2098

Note: All models include country, year, and industry fixed effects. P-values are provided in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

The results in Table 6 show that country or exchange governance standards do not constrain the extent to which firms engage in earnings management when their directors are awarded greater equity-based compensation. That is, governance imposed from cross-listing does not help limit the use of earnings management when directors face own equity incentives.

ROBUSTNESS TEST

In this section, we describe the use of an alternative measure of earnings management as a robustness test for the findings. Pomeroy and Thornton (2008) suggest that the use of different financial reporting

quality measures in the audit committee independence literature explains about half of the variation in results across studies. Peek, Meuwissen, Moers & Vanstraelen (2013) find that accruals measured using the modified Jones model exhibit cross-country performance variation. To eliminate the argument that our findings can be explained by the choice of earnings management, we use an alternative approach of DeFond and Park (2001) and Marra, Mazzola, and Prencipe (2011). Specifically, we use their abnormal working capital accruals (AWCA) as presented below in equation (5):

$$AWCA_t = WC_t - \left[\left(\frac{WC_{t-1}}{S_{t-1}} \right) \times S_t \right] \quad (5)$$

where WC_t is non-cash working capital accruals in year t , computed as (current assets – cash and short-term investments) – (current liabilities – short-term debt), S_t denotes total sales in year t .

We then scale AWCA by end-of-the-year total assets. The absolute value of AWCA, Abs_AWCA, is used because the main objective is to measure the extent of earnings management, regardless whether it is income increasing or decreasing. The results are presented in Table 7.

TABLE 7
ROBUSTNESS TEST USING ABNORMAL WORKING CAPITAL ACCRUALS (AWCA)

Dependent variable: Abs_AWCA	(1)	(2)
Intercept	1.6498	1.7143
% director equity-based compensation $_{t-1}$	0.0153** (0.0238)	0.0209*** (<.0001)
Presence of audit committee		0.0093 (0.3646)
Log of board size		0.0045 (0.2982)
% of independent director		-0.0267*** (0.0074)
CEO tenure		0.0001 (0.6829)
Firm size (Log of total assets)		-0.0151*** (<.0001)
Lag Market-to-book ratio		-0.0008*** (0.0096)
Lag ROA		-0.0241*** (<.0001)
Abs (Δ NI)		-0.0001** (0.0104)
Neg. NI		0.0359*** (<.0001)
Lag Leverage		0.1203*** (<.0001)
N	4,952	4,952
R-square	0.0582	0.2223

Note: All models include country, year, and industry fixed effects. P-values are provided in parentheses. *, **, *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively.

As shown in Table 7, the coefficients of director equity-based compensation are significantly positive, indicating that when firms award their directors with greater proportion of equity-based compensation, such firms exhibit greater use of earnings management.

DISCUSSION AND CONCLUSION

This study examines the effect of director equity incentives on a firm's financial reporting quality. The literature has largely focused on the association between CEO compensation and a firm's financial reporting quality. There is, however, little in the existing literature concerning whether director equity incentives influence the use of earnings management. Using a set of international firms drawn from 29 countries, we explore whether directors awarded greater proportion of equity-based compensation are effective in monitoring the use of earnings management. Necessarily, this study directly contributes to the literature regarding the optimal contracting or agency effects associated with the use of equity-based compensation. Importantly, we undertake this analysis globally.

We find that firms whose directors awarded higher percentage equity-based compensation exhibit greater use of earnings management. This is consistent with the notion that equity incentives encourage directors to increase short-term stock prices or to avoid future stock price shocks. Our results suggest that directors who are more sensitive to stock performance are more likely to manipulate earnings, which leads to an increase in current earnings or prevention of future earnings disappointments. This, in turn, means a reduced quality in financial reporting. We show that a one percentage point increase in the average percentage of director equity-based compensation increases the use of earnings management to a level that approximates 1.7% of the value of a firm's total assets.

We also examine director equity incentives by focusing on the incentives of independent and inside directors, or directors with and without audit committee membership. We discover that all directors are motivated by their equity incentives to manipulate earnings, regardless whether a director serves on the audit committee, or whether a director is classified as an independent or inside director. However, this agency problem can be mitigated at firms with greater board (audit committee) independence measured by the proportion of independent directors on a board (audit committee). This suggests that when there are more independent directors on a board (audit committee), the use of equity incentives can mitigate agency problems and improve board monitoring.

Further, we investigate whether firms that cross-list on U.S. stock exchanges exhibit a different pattern of earnings management relative to firms that do not cross-list. We use propensity score matching approach and align each ADR firm with a non-ADR firm from the same country and industry as well as comparable firm size (total assets). Although we find that ADR firms exhibit less use of earnings management relative to non-ADR firms, we do not find evidence that cross-listing effectively reduces the practice of earnings management when directors are awarded greater percentage equity-based compensation. This implies that the ineffectiveness of monitoring from directors can only be partially mitigated through stronger governance standards. With strong equity incentives, director monitoring is compromised, and the ineffectiveness cannot be mitigated by stock exchange regulation and listing requirements.

Finally, we challenge the robustness of our findings by using abnormal working capital accruals (AWCA) as an alternative measure of earnings management. We find that the relation between director equity incentives and earnings management is not sensitive to the method of accrual estimation.

We believe that this study offers new and important evidence regarding the effect of director compensation structure. The literature concerning how director equity incentives influence a firm's financial reporting quality is limited with inconsistent evidence. We show that directors awarded greater equity-based compensation are associated with poorer financial reporting quality and are less effective as managerial monitors.

APPENDIX
LIST OF VARIABLES AND THEIR DEFINITIONS

Variable	Definition
% of independent director	The number of independent directors divided by the number of total directors in each firm
Presence of audit committee	An indicator variable that equals one if a firm has an audit committee.
% of independent audit committee member	The number of independent audit committee members divided by the number of total directors in the audit committee.
Log of board size	Log of total number of directors in each firm.
CEO tenure	CEO's tenure in years as CEO
Firm size	Log of total assets in U.S. dollars for a specific firm.
Market-to-book ratio	The market value of a firm's equity plus the difference between the book value of its assets and the book value of its equity at the end of the year, divided by the book value of the firm's assets at the end of the year.
ROA	A firm's EBIT divided by its total assets
Abs (Δ NI)	The absolute value of the change in net income between years t-1 and t.
Neg. NI	An indicator variable that equals one if the firm had two or more consecutive years of negative income.
Leverage	Total debt divided by last year's total assets.

REFERENCES

- Andreas, J. M., Rapp, M. S., & Wolff, M. (2012). Determinants of director compensation in two-tier systems: evidence from German panel data. *Review of Managerial Science*, 6(1), 33-79.
- Archambeault, D. S., DeZoort, F. T., & Hermanson, D. R. (2008). Audit committee incentive compensation and accounting restatements. *Contemporary Accounting Research*, 25(4), 965-992.
- Baker, T., Collins, D., & Reitenga, A. (2003). Stock option compensation and earnings management incentives. *Journal of Accounting, Auditing & Finance*, 18(4), 557-582.
- Bartov, E., & Mohanram, P. (2004). Private information, earnings manipulations, and executive stock-option exercises. *The Accounting Review*, 79(4), 889-920.
- Beasley, M. S., (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review*, 443-465.
- Becher, D. A., Campbell II, T. L., & Frye, M. B. (2005). Incentive compensation for bank directors: The impact of deregulation. *The Journal of Business*, 78(5), 1753-1778.
- Bedard, J., Chtourou, S.M. and Courteau, L., (2004). The effect of audit committee expertise, independence, and activity on aggressive earnings management. *Auditing: A Journal of Practice & Theory*, 23(2), 13-35.
- Bergstresser, D., & Philippon, T. (2006). CEO incentives and earnings management. *Journal of Financial Economics*, 80(3), 511-529.
- Bhagat, S., Carey, D. C., & Elson, C. M. (1999). Director ownership, corporate performance, and management turnover. *The Business Lawyer*, 885-919.
- Borokhovich, K. A., Parrino, R., & Trapani, T. (1996). Outside directors and CEO selection. *Journal of Financial and Quantitative Analysis*, 31(3), 337-355.
- Boumosleh, A. (2009). Director compensation and the reliability of accounting information. *Financial Review*, 44(4), 525-539.
- Brick, I. E., Palmon, O., & Wald, J. K. (2006). CEO compensation, director compensation, and firm performance: Evidence of cronyism? *Journal of Corporate Finance*, 12(3), 403-423.

- Bryan, S. H., & Klein, A. (2004). Non-management director options, board characteristics, and future firm investments and performance.
- Burns, N., & Kedia, S. (2003). Do executive stock options generate incentives for earnings management? Evidence from accounting restatements, unpublished, University of Georgia and Harvard Business School.
- Cheng, Q., & Warfield, T. D. (2005). Equity incentives and earnings management. *The Accounting Review*, 80(2), 441-476.
- Coffee Jr, J.C., (1999). The future as history: the prospects for global convergence in corporate governance and its implications. *Northwestern University Law Review*, 641-708.
- Coffee Jr, J.C., (2002). Racing towards the top? The impact of cross-listings and stock market competition on international corporate governance. *Columbia Law Review*, 1757-1831.
- Cordeiro, J., Veliyath, R., & Erasmus, E. (2000). An empirical investigation of the determinants of outside director compensation. *Corporate Governance: An International Review*, 8(3), 268-279.
- Cornett, M. M., Marcus, A. J., & Tehranian, H., (2008). Corporate governance and pay-for-performance: The impact of earnings management. *Journal of Financial Economics*, 87(2), 357-373.
- Cullinan, C. P., Du, H., & Wright, G. B. (2008). Is there an association between director option compensation and the likelihood of misstatement? *Advances in Accounting*, 24(1), 16-23.
- DeAngelo, L. E., (1986). Accounting numbers as market valuation substitutes: A study of management buyouts of public stockholders. *The Accounting Review*, 400-420.
- Dechow, P. M., & Dichev, I. D., (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, 77(s-1), 35-59.
- Dechow, P. M., & Skinner, D. J., (2000). Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons*, 14(2), 235-250.
- Dechow, P. M., Kothari, S. P., & Watts, R. L., (1998). The relation between earnings and cash flows. *Journal of Accounting and Economics*, 25(2), 133-168.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P., (1995). Detecting earnings management. *The Accounting Review*, 193-225.
- Dechow, P. M., Sloan, R. G., & Sweeney, A. P., (1996). Causes and consequences of earnings manipulation: An analysis of firms' subject to enforcement actions by the SEC. *Contemporary Accounting Research*, 13(1), 1-36.
- Dechow, P., Ge, W., & Schrand, C., (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, 50(2), 344-401.
- DeFond, M. L., & Jiambalvo, J., (1994). Debt covenant violation and manipulation of accruals. *Journal of Accounting and Economics*, 17(1-2), 145-176.
- DeFond, M. L., & Park, C. W. (2001). The reversal of abnormal accruals and the market valuation of earnings surprises. *The Accounting Review*, 76(3), 375-404.
- DeGeorge, F., Patel, J., & Zeckhauser, R. (1999). Earnings management to exceed thresholds. *The Journal of Business*, 72(1), 1-33.
- Demb, A. and Neubauer, F.F., (1992). The corporate board: Confronting the paradoxes. *Long Range Planning*, 25(3), 9-20.
- Doidge, C., (2004). US cross-listings and the private benefits of control: evidence from dual-class firms. *Journal of Financial Economics*, 72(3), 519-553.
- Farrell, K. A., Friesen, G. C., & Hersch, P. L. (2008). How do firms adjust director compensation? *Journal of Corporate Finance*, 14(2), 153-162.
- Fich, E. M., & Shivdasani, A. (2005). The impact of stock-option compensation for outside directors on firm value. *The Journal of Business*, 78(6), 2229-2254.
- Francis, J. R., & Gunn, J. L. (2015). Industry accounting complexity and earnings properties: Does auditor industry expertise matter. Working paper.
- Gaver, J. J., Gaver, K. M., & Austin, J. R. (1995). Additional evidence on bonus plans and income management. *Journal of Accounting and Economics*, 19(1), 3-28.

- Gillette, A. B., Noe, T. H., & Rebello, M. J. (2003). Corporate board composition, protocols, and voting behavior: Experimental evidence. *Journal of Finance*, 58(5), 1997-2031.
- Hall, B. J., & Liebman, J. B. (1998). Are CEOs really paid like bureaucrats? *The Quarterly Journal of Economics*, 113(3), 653-691.
- Hall, B. J., & Murphy, K. J. (2003). The trouble with stock options. *The Journal of Economic Perspectives*, 17(3), 49-70.
- Harris, J., & Bromiley, P. (2007). Incentives to cheat: The influence of executive compensation and firm performance on financial misrepresentation. *Organization Science*, 18(3), 350-367.
- Healy, P. M., (1985). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics*, 7(1), 85-107.
- Hermalin, B. E., & Weisbach, M. S. (1998). Endogenously chosen boards of directors and their monitoring of the CEO. *American Economic Review*, 96-118.
- Holthausen, R. W., Larcker, D. F., & Sloan, R. G. (1995). Annual bonus schemes and the manipulation of earnings. *Journal of Accounting and Economics*, 19(1), 29-74.
- Iatridis, G., & Kadorinis, G. (2009). Earnings management and firm financial motives: A financial investigation of UK listed firms. *International Review of Financial Analysis*, 18(4), 164-173.
- Jensen, M.C. (1993). "The modern industrial revolution, exit, and the failure of internal control systems", *Journal of Finance*, vol. 48, no. 3, 831-880.
- Jiang, J. X., Petroni, K. R., & Wang, I. Y. (2010). CFOs and CEOs: Who have the most influence on earnings management? *Journal of Financial Economics*, 96(3), 513-526.
- Jones, J. J., (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 193-228.
- Jungmann, C., (2006). The effectiveness of corporate governance in one-tier and two-tier board systems— Evidence from the UK and Germany—. *European Company and Financial Law Review*, 3(4), 426-474.
- Kaplan, R. S. (1985). Evidence on the effect of bonus schemes on accounting procedure and accrual decisions. *Journal of Accounting and Economics*, 7(1-3), 109-113.
- Keating, A. S., & Zimmerman, J. L., (1999). Depreciation-policy changes: tax, earnings management, and investment opportunity incentives. *Journal of Accounting and Economics*, 28(3), 359-389.
- Klein, A., (2002). Audit committee, board of director characteristics, and earnings management. *Journal of Accounting and Economics*, 33(3), 375-400.
- Kothari, S. P., Leone, A. J., & Wasley, C. E., (2005). Performance matched discretionary accrual measures. *Journal of Accounting and Economics*, 39(1), 163-197.
- Krishnan, J., (2005). Audit committee quality and internal control: An empirical analysis. *The Accounting Review*, 80(2), 649-675.
- Leuz, C., Nanda, D., & Wysocki, P. D., (2003). Earnings management and investor protection: an international comparison. *Journal of Financial Economics*, 69(3), 505-527.
- Maassen, G. and Van Den Bosch, F., (1999). On the Supposed Independence of Two-tier Boards: formal structure and reality in the Netherlands. *Corporate Governance: An International Review*, 7(1), 31-37.
- Marra, A., Mazzola, P. and Prencipe, A., (2011). Board monitoring and earnings management pre-and post-IFRS. *The International Journal of Accounting*, 46(2), 205-230.
- Maug, E. (1997). Boards of directors and capital structure: alternative forms of corporate restructuring. *Journal of Corporate Finance*, 3(2), 113-139.
- McClain, G. (2012). Outside director equity compensation and the monitoring of management. *Journal of Applied Business Research (JABR)*, 28(6), 1315-1330.
- Meek, G. K., Rao, R. P., & Skousen, C. J. (2007). Evidence on factors affecting the relationship between CEO stock option compensation and earnings management. *Review of Accounting and Finance*, 6(3), 304-323.
- Mehran, H. (1995). Executive compensation structure, ownership, and firm performance. *Journal of Financial Economics*, 38(2), 163-184.

- Murphy, K.J. (1999). "Executive compensation", *Handbook of labor economics*, vol. 3, 2485-2563.
- Palia, D. (2001). The endogeneity of managerial compensation in firm valuation: A solution. *Review of Financial Studies*, 14(3), 735-764.
- Park, Y. W., & Shin, H.-H., (2004). Board composition and earnings management in Canada. *Journal of Corporate Finance*, 10(3), 431-457.
- Peek, E., Meuwissen, R., Moers, F. and Vanstraelen, A., (2013). Comparing abnormal accruals estimates across samples: An international test. *European Accounting Review*, 22(3), 533-572.
- Perry, T. (2000). "Incentive compensation for outside directors and CEO turnover".
- Persons, O. S. (2012). Stock option and cash compensation of independent directors and likelihood of fraudulent financial reporting. *The Journal of Business and Economic Studies*, 18(1), 54.
- Pomeroy, B. and Thornton, D.B., (2008). Meta-analysis and the accounting literature: The case of audit committee independence and financial reporting quality. *European Accounting Review*, 17(2), 305-330.
- Reese, W.A. and Weisbach, M.S., (2002). Protection of minority shareholder interests, cross-listings in the United States, and subsequent equity offerings. *Journal of Financial Economics*, 66(1), 65-104.
- Ryan, H. E., & Wiggins, R. A. (2004). Who is in whose pocket? Director compensation, board independence, and barriers to effective monitoring. *Journal of Financial Economics*, 73(3), 497-524.
- Safdar, I. (2003). Stock option exercise, earnings management, and abnormal stock returns.
- Sengupta, P., & Zhang, S. (2015). Equity-Based Compensation of Outside Directors and Corporate Disclosure Quality. *Contemporary Accounting Research*, 32(3), 1073-1098.
- Stein, J. C. (1989). Efficient capital markets, inefficient firms: A model of myopic corporate behavior. *Quarterly Journal of Economics*, 104(4), 655-669.
- Stulz, R.M., (1999). Globalization, corporate finance, and the cost of capital. *Journal of Applied Corporate Finance*, 12(3), 8-25.
- Teoh, S. H., Welch, I., & Wong, T. J., (1998). Earnings management and the long-run market performance of initial public offerings. *Journal of Finance*, 53(6), 1935-1974.
- Warfield, T. D., Wild, J. J., & Wild, K. L., (1995). Managerial ownership, accounting choices, and informativeness of earnings. *Journal of Accounting and Economics*, 20(1), 61-91.
- Watts, R.L. and Zimmerman, J.L., (1990). Positive accounting theory: a ten-year perspective. *The Accounting Review*, 131-156.
- Weisbach, M. S. (1988). Outside directors and CEO turnover. *Journal of Financial Economics*, 20, 431-460.
- Xie, B., Davidson, W. N., & DaDalt, P. J., (2003). Earnings management and corporate governance: the role of the board and the audit committee. *Journal of Corporate Finance*, 9(3), 295-316.
- Ye, K. (2014). Independent director cash compensation and earnings management. *Journal of Accounting and Public Policy*, 33(4), 391-400.
- Yermack, D. (2004). Remuneration, retention, and reputation incentives for outside directors. *Journal of Finance*, 59(5), 2281-2308.