

CORPORATE GOVERNANCE AND EARNINGS MANAGEMENT IN NEW ZEALAND

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Abstract

This paper examines the relation between corporate governance mechanisms and earnings management. Using data collected from New Zealand listed companies for the financial year ending in 2005, the results show that the size of the board of directors is significantly positively associated with earnings management. This suggests that larger boards seem to be ineffective in their oversight duties relative to smaller boards. On the other hand, the independence of the board of directors, the independent role of the board chair and chief executive officer, and the independence of audit committees are not significantly associated with earnings management. Thus, these three corporate governance mechanisms are ineffective at monitoring the discretionary choices of management. The lack of effective corporate governance in New Zealand, particularly with regard to boards of directors, is mainly due to the lack of “experience and skills required to oversee the scale, complexity, and characteristics of finance operations” (Ministry of Economic Development, 2009, p.8).

Keywords: Corporate Governance; Earnings Management; Audit Committee; Board of Directors

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1. Introduction

Following recent financial reporting scandals and corporate collapses, the importance of corporate governance has gained a great deal of attention. Corporate governance is the structures and processes that a company has in place to monitor the actions and decisions of an organization's management. Corporate governance plays an integral role in ensuring integrity in the preparation of financial reports. Earnings management can undermine corporate governance by distorting an organization's profit, in order for managers to obtain private benefits. The effectiveness of corporate governance in minimizing the occurrence of earnings management has become an increasingly debated topic in academic accounting, the accounting profession, and throughout accounting-standards-setting bodies.

In order for managers to convey information regarding the financial performance of their company, standard setters have permitted managers to exercise judgment in selecting reporting methods and making estimates and disclosures so that financial reports provide quality information to users (Healy and Wahlen, 1999). Allowing managers to exercise judgment in the preparation of financial statements can provide opportunities for

them to manipulate earnings to fulfill their personal goals. Generally Accepted Accounting Principles (GAAP) allow managers to exercise judgment in reporting financial statements. This, in turn, provides them with opportunities to structure transactions and present financial reports in a way that may mislead stakeholders as to the true financial performance of a firm (Nelson, Elliot, and Tarpley, 2003). Healy and Wahlen (1999, p. 368) define earnings as follows: “Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reporting accounting numbers.”

The issue of earnings management has become an increasingly debated topic, and, as a consequence, there has been a large amount of pressure put on companies, in particular listed companies, to ensure that they have strong corporate governance mechanisms in place to minimize the risk of fraud and to monitor the actions and decisions of executive management. In 2003, the New Zealand Stock Exchange (NZX) introduced into its listing rules the NZX Corporate Governance Best Practice Code (NZX, 2003a). The

reason for releasing this code was that “Good corporate governance is an important tool in promoting investor confidence in listed companies by providing a framework for transparency and accountability” (NZX, 2003b, p. 3). Strong corporate governance processes and structures should ensure the integrity of financial reporting, so that reliable and accurate profit (or loss) figures are reported to both current and future shareholders.

It is generally accepted that there are a number of factors that will influence the effectiveness of corporate governance in an organization. The first and most important part of any corporate structure is the board of directors. It is widely held that “the board of directors is the highest internal control mechanism responsible for monitoring the actions of top management” (Beasley, 1996, p. 444). As a result of this view, it is important that the board of directors should remain independent of influence from management to ensure that it acts in the best interests of the company’s shareholders. Other mechanisms that may influence corporate governance in an organization include the existence and effectiveness of an audit committee and the existence of an internal audit function (Peasnell, Pope, and Young, 2005).

This paper attempts to investigate the role of corporate governance in constraining the magnitude of earnings management. It examines the relation between corporate governance mechanisms (as measured by board size and independence of board of directors, independent role of the board chair, and independent audit committees) and earnings management (as measured by discretionary accruals) for firms listed on the NZX for the financial year ending in 2005. Prior research in the area of earnings management has for the most part focused on data collected from United States (US), United Kingdom (UK), and Australian listed companies. This study is distinctive due to the smaller size, geographical isolation, and less regulated nature of New Zealand listed companies. The characteristics inherent in New Zealand companies provide a unique setting to examine the association between corporate governance structures and the magnitude of earnings management. The results show that the size of the board of directors is significantly positively associated with earnings management. This suggests that larger boards seem to be ineffective in their oversight duties relative to smaller boards. On the other hand, the independence of board of directors, the independent role of the board chair and chief executive officer (CEO), and the independence of audit committees are not significantly associated with earnings management. Thus, these three corporate governance mechanisms are ineffective at monitoring the discretionary choices of management.

The lack of effective corporate governance in New Zealand has recently been exposed by a significant number of finance and non-finance company collapses in New Zealand since 2007 (Yahanpath, 2010). A concern was raised by the Ministry of Economic Development in 2009 that suggested that boards of the failed finance companies tended to “lack the experience and skills required to oversee the scale, complexity, and characteristics of finance operations...too often directors were not adequately informed, misled or failed to take sufficient interest in the affairs of the company (Ministry of Economic Development, 2009, p.8).

The remainder of this study is organized as follows. Section 2 provides the prior literature and hypotheses development. The research design is developed in section 3, while section 4 reports the results. Section 5 contains the summary and conclusions.

2. Prior literature and hypotheses development

Corporate governance is the procedures, processes, and functions put in place in an organization to monitor or oversee the actions of management. As stated by Davidson et al. (2005), corporate governance plays an important role in the financial reporting process by ensuring financial reporting requirements are complied with, so as to maintain the integrity and credibility of financial statements. Corporate governance and earnings management are interrelated issues, and both have gained a great deal of attention in accounting literature. Earnings management can undermine the corporate governance mechanisms of an organization by interfering with the external financial reporting process in order for managers to obtain private gains. Prior literature (e.g., Klein, 2002a; Xie et al., 2003; Davidson et al., 2005; Bradbury et al., 2006; Garcia Osma and Noguera, 2007; Garcia Osma, 2008; Cornett et al., 2009; Baxter and Cotter, 2009; Kent et al., 2010; Marra et al., 2011; Bekiris and Doukakis, 2011) has looked at a wide range of corporate governance mechanisms and their relationship with earnings management. These include mainly the characteristics of the board of directors (e.g., board leadership, board size, board independence, audit committee independence, executive committee independence, number of board or audit committees meetings). The mechanisms that we examine in the present paper are the size of the board of directors, the independent board of directors, the independent role of the board chair and CEO, and the independent audit committees.

2.1 Board size

Prior literature provides conflicting results about the direction of the relationship between board size and earnings management. Several studies report positive relationships between board size and earnings management (Jensen, 1993; Dechow et al., 1996; Beasley, 1996; Peasnell et al., 2005; Ching et al., 2006; Rahman and Ali, 2006); that is, larger boards are less effective in performing their oversight duties relative to smaller boards. However, other studies report negative relationships (Xie et al., 2003; Bradbury et al., 2006). This suggests that smaller boards are more effective monitors than larger boards. It is worth noting that larger boards may provide more directors on the board with relevant financial skills and expertise (Dalton et al., 1999; Beasley and Salterio, 2001), and may provide better services and be more effective in preventing firm failure (Chaganti and Mahajan, 1985). Given these conflicting results, we hypothesize a positive association between independent directors and earnings management (Davidson et al., 2005). Thus, the following hypothesis is proposed:

H1: Earnings management is positively associated with the size of the board of directors.

2.2 Independent board of directors

Agency relationships exist when principals (owners/shareholders) hire the agents (managers/board of directors) to perform a service on behalf of the principals. In an agency relationship, shareholders often delegate decision-making authority to the board of directors. As a result, agency problems may arise due to the existence of divergent objectives between the principals and agents. There have been a number of studies (e.g., Brickley and James, 1987; Weisbach, 1988; Byrd and Hickman, 1992) supporting the hypothesis that independent directors protect shareholders when there is an agency problem. The board of directors is considered to be the most important governance mechanism in any firm, as it will form the base for which other governance structures are incorporated (Fama and Jensen, 1983). In addition, independent directors are needed in order to monitor and control the actions of directors whose behavior is opportunistic (Jensen and Meckling, 1976). Independent directors are non-executive directors who have no relationship with the company beyond their roles as directors (Davidson et al., 2005). The NZX supported the notion of the independence of board members in its 2003 NZX Corporate Governance Best Practice Code (NZX, 2003a). Under this code “a director should not simultaneously hold the positions of Chief Executive and Chairman of the Board of the same issuer” (NZX, 2003a, p. 4), and should not

have “...any relationship that could interfere with the Director’s ability to act freely in the best interests of the issuer and its shareholders” (NZX, 2003b, p. 8). Although issuers (listed companies) are not strictly required to uphold this code, they must appropriately disclose in their annual reports the extent to which their corporate governance practices are materially different from the principles set out in the code (NZX, 2003a).

Prior research supports the hypothesis that earnings management is constrained in proportion to the number of independent directors on the board (Beasley, 1996; Dechow et al., 1996; Klein, 2002a; Xie et al. (2003); Davidson et al., 2005; Marra et al., 2011; Bekiris and Doukakis, 2011). Dechow et al. (1996) find that firms who manipulate earnings (and were disciplined by the SEC) are more likely to have a high proportion of executive managers present on their board of directors and are more likely to have a chief executive who is also the chairman of the board. Beasley (1996) also finds evidence that the proportion of outside (non-executive) members on the board of directors is statistically lower in those firms that commit financial statement fraud. Klein (2002a) finds that reductions in the independence of the board of directors lead to large increases in abnormal accruals. Xie et al. (2003) find a lower level of earnings management is associated with greater independent outside directors who also improve their monitoring role when they are financially sophisticated. Davidson et al. (2005) find a majority of non-executive directors on the board of Australian firms to be significantly associated with a lower likelihood of earnings management. This evidence has also been supported by Peasnell et al. (2005) with respect to UK firms. Bekiris and Doukakis (2011) provide evidence for an inverse relationship between corporate governance and earnings management using a corporate governance index consisting of 55 individual corporate governance measures on a sample of firms listed on the Athens, Milan, and Madrid stock exchanges. Marra et al. (2011) indicate that board independence and audit committees play an important and effective role in reducing earnings management after the introduction of international financial reporting standards. Although the aforementioned literature has found a negative association between the independent board of directors and earnings management, some others have not. Chtourou et al. (2001), Park and Shin (2004), Rahman and Ali (2006), and Bradbury et al. (2006) have not observed any statistically significant association between the two variables for a sample of US firms, Canadian firms, Malaysian firms, and Singapore and Malaysian firms, respectively. Given these inconclusive results, we hypothesize a negative association between independent directors and earnings

management (Davidson et al., 2005). Thus, the following hypothesis is proposed:

H2: Earnings management is negatively associated with the proportion of independent directors on the board.

2.3 Independent role of the board chair and CEO

The board chair plays an important role between the CEO and the board on decision making by the board. In addition, the relationship between management and the board needs to be smooth and cohesive. This can be facilitated if the roles of the board chair and CEO are clearly separated and if the board chair is an independent director. The separation of the roles of board chair and CEO can also avoid a considerable concentration power in the hands of the CEO (Beasley, 1996). However, prior studies indicate that separating the role of the chair and CEO has no effective monitoring function in restraining earnings management (Davidson et al., 2005; Bradbury et al., 2006; Rahman and Ali, 2006). On the other hand, Dechow et al. (1995) provide evidence that companies are more likely to be subjected to accounting enforcement actions by the SEC for alleged violation of GAAP when their CEO also chairs the board of directors. Hence, it is hypothesized that

H3: Earnings management is negatively associated with the separation of the roles of board chair and CEO.

2.4 Independent audit committees

The audit committee is a subcommittee of the board of directors, which delegates its responsibilities to board committees such as the audit, executive, compensation, and nomination committees. The audit committee is responsible for overseeing the financial reporting process on behalf of the board of directors. It is also responsible for reviewing a company's financial statements, internal accounting controls, and the audit process (Klein, 2002a). Its main purpose is to enhance the creditability of audited financial statements (Bradbury et al., 2006). Audit committees are now a mandatory requirement of companies listed on the New York Stock Exchange (NYSE) and the NASDAQ Stock Market, as well as the requirement that all committee members are non-executive board members (Klein, 2002a). In New Zealand, the NZX Corporate Governance Best Practice Code (NZX, 2003a) placed into its listing rules the requirement for companies to establish an audit committee, as well as recommending that this audit committee should consist of exclusively non-executive directors. However, as with the independence requirements for the board of directors, listed companies can opt out of this requirement, provided

adequate disclosure is made in the annual report as to the non-existence or non-independence of the audit committee (NZX, 2003a). The effectiveness of the audit committee in limiting instances of earnings management may be affected by a number of factors, such as the independence of audit committee members. Other factors that have been identified that may influence the effectiveness of an audit committee are the audit committee size, the frequency of meetings, the number of meetings with the external auditor, and the expertise of the audit committee. However, these additional factors have been tested and were found to provide inconclusive results (Xie, et al., 2003; Choi et al., 2004; Davidson et al., 2005; Vafeas, 2005; Dhaliwal et al., 2006; Rahman and Ali, 2006; Baxter and Cotter, 2009; Kent, 2010).

The present paper looks at the independent audit committee only. In order to function effectively, the audit committee must be independent of the management, as it allows both the internal and external auditors to remain free of interference from corporate management (Vicknair et al., 1993). The independent audit committee has been found to be significantly negatively associated with earnings management in several prior studies (e.g. Klein, 2002a; Abbott et al., 2004; Davidson et al., 2005; Baxter and Cotter, 2009; Kent et al., 2010). These studies indicated that the proportion of non-executives on the audit committee is negatively associated with earnings management, which is aligned with the independence requirements under US and New Zealand stock exchanges rulings. However, there are other studies that have found no significant association between the independent audit committee and earnings management (e.g. Xie, et al., 2003; Peasnell et al., 2005; Yang and Krishnan, 2005; Rahman and Ali, 2006; Garcia Osma and Noguer, 2007). Given these inconclusive results, we hypothesize a negative association between independent audit committees and earnings management. Thus, the following hypothesis is proposed:

H4: Earnings management is negatively associated with the proportion of independent directors on the audit committee.

3. Research design

3.1 Sample

The sample consists of 177 firms listed on the NZX and is based on the financial year January 1, 2005 through December 31, 2005. Both financial and non-financial data items were collected for each individual firm. The firms' annual reports contain all the financial data required to estimate earnings management through the calculation of discretionary accruals. They also contain corporate governance disclosures, which were used to obtain

information regarding the board of directors and audit committees. These annual reports were obtained from either the IRG Datex Information Database, company Web sites, or in hard copy format. Consistent with prior research, companies that are classified under banking, insurance, or financial services are excluded from the sample (Davidson et al., 2005; Klein, 2002a; Peasnell et al., 2005). As identified by Davidson et al. (2005), companies classified under banking and financial services are likely to have a higher degree of corporate governance imposed through regulation, as well as distinctive working capital structures that makes it difficult to measure accruals. Companies

classified under financial services have “fundamentally different accruals processes that are not captured by the modified-Jones model” (Peasnell et al., 2005, p. 1324). Also excluded from the original sample are companies that are registered outside New Zealand. The majority of these listed companies are overseas investment trusts and equity funds that also have distinctive working capital structures, and thus it is again difficult to measure accruals. Finally, companies with insufficient information regarding corporate governance or financial information are also excluded. The sample selection process is summarized as follows:

Original NZX listed companies		177	
Less: Banks, investment and finance companies	28		
Less: Overseas investment trusts and equity funds	33		
Less: Missing data	<u>21</u>	<u>82</u>	
Final sample			95

Thus, 95 firms are included in the final sample, which is further divided into sector and

industry group according to the NZX classification system, as shown in Table 1.

Table 1. Sample classified by sector and industry group

Sector	Industry	Sample firms	Sample (%)
Primary	Agriculture & Fishing	5	
	Mining	4	
	Forestry & Forest Products	1	
	Building Materials & Construction	<u>3</u>	
		13	13.68%
Energy	Energy	7	7.37%
Goods	Food & Beverages	3	
	Textiles & Apparel	3	
	Intermediate & Durables	<u>12</u>	
		18	18.95%
Property Services	Property	9	9.48%
	Transport	4	
	Ports	5	
	Leisure & Tourism	4	
	Consumer	17	
	Media & Telecommunications	<u>5</u>	
		35	36.84%
Investment	Investment	<u>13</u>	13.68%
	Total Sample	95	100.00%

3.2 Measurement of the variables

3.2.1 Earnings management

The dependent variable is earnings management. Prior literature has measured it using a number of different techniques [1]. One of the most commonly used measures of earnings management normally focuses on accruals and more specifically the discretionary component of total accruals. A number of different models have been developed that attempt to separate total accruals into their discretionary and non-discretionary components. The most commonly used are the Jones (1991) and the modified-Jones (Dechow et al., 1995) models. This study adopts a cross-sectional version of the

modified-Jones model which estimates a firm's non-discretionary accruals (NDAC) as a function of the changes in revenues adjusted by the change in accounts receivables, and the level of property, plant, and equipment (Dechow et al., 1995) [2]. The rationale is that a firm's working capital requirements depend on revenues, while its depreciation (and perhaps deferred taxes) accruals depend on the level of property, plant, and equipment (Subramanyam, 1996). To compute the non-discretionary accruals, we first estimate ordinary least squares regressions of total accruals on the change in revenues and the gross level of property, plant, and equipment (PPE) from the Jones (1991) model in Equation 1 below.

$$TAC_{ij,t}/TA_{ij,t-1} = \alpha_j[1/TA_{ij,t-1}] + \beta_{1j}[\Delta REV_{ij,t}/TA_{ij,t-1}] + \beta_{2j}[PPE_{ij,t}/TA_{ij,t-1}] + \varepsilon_{ij,t} \quad (1)$$

where

$TAC_{ij,t}$	=	total accruals for company i in industry j in year t ,
$TA_{ij,t-1}$	=	total assets for company i in industry j in year $t-1$,
$\Delta REV_{ij,t}$	=	change in revenues for company i in industry j in year t ,
$PPE_{ij,t}$	=	gross property, plant and equipment for company i in industry j in year t ,
$\varepsilon_{ij,t}$	=	error term for company i in industry j in year t .

This equation estimates the parameters for normal business operations for all companies in an industry for which the NDAC can be calculated. The portion (or residual) of total accruals that cannot be explained by these normal operating activities is said to be the discretionary component of total accruals (Jones, 1991; Dechow et al., 1995; Becker et al., 1998; Davidson et al., 2005).

As explained by Jones (1991, p. 212), all terms in the total accruals expectation model are scaled by last-year total assets (TA_{t-1}) to reduce heteroscedasticity because "lagged assets are assumed to be positively associated with variance of the disturbance terms." Jones found that the error terms from the expectation model when calculated using unscaled data were highly correlated with lagged assets. Total accruals (TAC) in Equation 1 are calculated using the cash flow approach, a method that has been widely used in previous research [3]. Under this approach, a company's TAC are calculated as the difference between the net income (earnings) before extraordinary items

and net cash flows from operations for the financial year [4]. It is noted that the original Jones (1991) model did not adjust the change in revenues by the change in accounts receivables, and, as a result, it assumed that all of a company's revenues in the estimation period were free from management manipulations (Dechow et al., 1995). However, by adjusting the change in revenues for the change in accounts receivable, the modified-Jones model shown in Equation 2 below implicitly makes the assumption that changes in credit sales are to some extent due to managers exercising discretion in the timing of reporting the revenues (Dechow et al., 1995). That is, there is a possibility that managers could have manipulated credit sales by changing credit terms.

Using the estimates from the regression parameters in Equation 1, $\hat{\alpha}_j$, $\hat{\beta}_{1j}$ and $\hat{\beta}_{2j}$, we estimate the NDAC using the modified-Jones model as displayed in Equation 2 below:

$$NDAC_{ij,t} = \hat{\alpha}_j[1/TA_{ij,t-1}] + \hat{\beta}_{1j}[(\Delta REV_{ij,t} - \Delta REC_{ij,t})/TA_{ij,t-1}] + \hat{\beta}_{2j}[PPE_{ij,t}/TA_{ij,t-1}] \quad (2)$$

where

$NDAC_{ij,t}$	=	non-discretionary accruals for company i in industry j in year t ,
$TA_{ij,t-1}$	=	total assets for company i in industry j in year $t-1$,
$\Delta REV_{ij,t}$	=	change in revenues for company i in industry j in year t ,
$\Delta REC_{ij,t}$	=	change in receivables for company i in industry j in year t ,
$PPE_{ij,t}$	=	gross property, plant and equipment for company i in industry j in year t ,
$\varepsilon_{ij,t}$	=	error term for company i in industry j in year t .

$\hat{\alpha}_j$, $\hat{\beta}_{1j}$ and $\hat{\beta}_{2j}$ are industry-specific coefficients which are estimated using a cross-sectional version of the model developed by Jones (1991) as displayed in Equation 1.

We then calculate the discretionary accruals, $DAC_{ij,t}$, as the remaining portion of total accruals, $TAC_{ij,t}$, as follows:

$$DAC_{ij,t} = TAC_{ij,t}/TA_{ij,t-1} - NDAC_{ij,t} \quad (3)$$

This study is concerned with instances of income increasing as well as income decreasing earnings management. Consistent with prior research, the absolute value (or magnitude) of discretionary accruals is used as the measure for the dependent variable, earnings management (Becker et al., 1998; Davidson et al., 2005).

3.2.2 Corporate governance variables

Corporate governance is the independent variable that includes board size, independence of board of directors, independent role of the board chair and CEO, and independence of audit committee.

Board size

This is measured as the number of directors on the board.

Independence of board of directors

The board of directors is considered to be the most important governance mechanism, as it will form the base for which other governance structures are incorporated. To test the belief that board independence is negatively associated with earnings management, a measure of board independence needs to be established. We first use a dummy variable for board independence with a value of 1 if the board is composed of a majority of non-executive directors, and 0 otherwise (Model 1).

In addition to this measure, this study looks at two other important features of board independence. The literature highlighted the importance of having outside or non-executive directors on the board, and, as such, this study measures independence of board of directors as the proportion of non-executive directors occupying the board. This is calculated by dividing the number of non-executive directors by the number of directors that are present on the board of directors (Model 2). The other definition of independence of board of directors is the independence of directors as defined under the NZX listing rules. Under this definition, independent board of directors is measured as the proportion of board members who have no relationship with the company outside that of their role as a director. This is calculated by dividing the number of independent board of directors (information on that is required to be disclosed in annual reports) by the total board size (Model 3).

Independent role of the board chair and CEO

This is a dummy variable with a value of 1 if the roles of the board chair and CEO are separated, and 0 otherwise.

Independence of audit committee

The most commonly used measure for audit committee independence has focused on the number of non-executives who are members of this

committee. This measure has also been found to be the most effective measure of audit committee independence. Accordingly, we measure audit committee independence as the proportion of non-executive (or outside) directors who are members of the audit committee to the size of the audit committee. This measure will be presented under the additional analysis section. We also measure audit committee independence similar to that of Davidson et al. (2005). Model 4 employs a dummy variable with a value of 1 if the audit committee is composed solely of non-executive directors, and 0 otherwise. Model 5 employs a dummy variable with a value of 1 if the audit committee is composed of a majority of non-executive directors, and 0 otherwise.

3.2.3 Control variables

As discussed by Bartov et al. (2001) a large amount of earnings management research fails to control for the effect of other factors that may be correlated with either earnings management or corporate governance. Control variables need to be included in the regression model to ensure that earnings management that occurs as a result of weak corporate governance identified is not earnings management that is the result of other confounding factors. Consistent with research by Klein (2002a) and Davidson et al. (2005), the absolute change in net income before extraordinary items scaled by last year total assets (ABSCH) is included in the regression as a company's earnings performance has been found to be positively associated with instances of earnings management. Leverage (LEV) is another control variable. It is measured as the ratio of total liabilities to total assets. It has been found to be positively associated with earnings manipulations when a firm is close to breaching debt covenants (Klein, 2002a; Bartov et al., 2001; Davidson et al., 2005). Another control variable is the market-to-book ratio (MKTBK) representing growth opportunities (Park and Shin, 2004). This is measured as the market value of shareholders' equity divided by the book value of equity. The final control variable is firm size (SIZE) and is measured by the natural log total assets. It is found to be negatively associated with earnings management as larger firms are more carefully monitored by the market and other stakeholders, making them more difficult to engage in earnings management (Klein, 2002a; Bartov et al., 2001; Xie et al., 2003; Park and Shin, 2004; Davidson et al., 2005; Rahman and Ali, 2006; Marra et al., 2010).

The summary of the measurement of the variables is shown below.

<i>Dependent Variable</i>	<i>Measured as</i>	<i>Represented by</i>
Earnings Management	Absolute value of discretionary accruals scaled by lagged total assets, estimated using Dechow et al. (1995) model	ABSDAC

<i>Corporate Governance Variables</i>	<i>Measured as</i>	<i>Represented by</i>	<i>Expected sign of relationship</i>
Board Size	Number of directors on the board	BDSIZE	+
Independence of Board of Directors	<i>Model 1:</i> Dummy variable with a value of 1 if the board is composed of a majority of non-executive directors, and 0 otherwise <i>Model 2:</i> Proportion of non-executive directors on the board of directors <i>Model 3:</i> Proportion of independent directors on the board of directors	BDIND	-
Independent Role of the Board Chair and CEO	Dummy variable with a value of 1 if the roles of board chair and CEO are separated, and 0 otherwise	INDCHAIR	-
Independence of Audit Committee	<i>Model 4:</i> Dummy variable with a value of 1 if the audit committee is composed solely of non-executive directors, and 0 otherwise <i>Model 5:</i> Dummy variable with a value of 1 if the audit committee is composed of a majority of non-executive directors, and 0 otherwise	ACIND	-
Control Variables			
Leverage	Ratio of total liabilities to total assets	LEV	+
Market-to-Book Ratio	Market value of shareholders' equity divided by the book value of equity	MKTBK	?
Absolute Change in Net Income	Absolute change in net income before extraordinary items between t and $t-1$ divided by total assets	ABSCH	+
Size	Natural log of total assets	SIZE	-

Now that all the variables to be used in this study have been defined and measured, the following section provides an outline of the regression model that is used to test the hypotheses.

$$DAC = \alpha + \beta_1 BDSIZE + \beta_2 BDIND + \beta_3 INDCHAIR + \beta_4 ACIND + \beta_5 LEV + \beta_6 MKTBK + \beta_7 ABSCH + \beta_8 SIZE + \varepsilon \quad (4)$$

where DAC is the absolute value of discretionary accruals estimated using the cross-sectional modified-Jones (i.e., Dechow et al., 1995) model; the remaining variables are as previously defined, and ε is an error term. For the sake of brevity, we do not display the subscripts for firm i , industry j , and time t .

3.3 Statistical tests

The following regression model is used to test the hypotheses:

4. Results

4.1 Descriptive statistics

Table 2 displays the descriptive statistics for the variables that were used in the regression model. Panel A displays the financial variables that were used to calculate discretionary accruals. It shows that the average firm has reported total assets of \$453.3 million, net income of \$31.4 million, and cash flow from operations of \$49.5 million. The average firm has reported negative total accruals equal to 4.8% of lagged total assets. Panel B

displays the continuous regression variables. It shows the number of directors on board is approximately 5.8, the proportion of non-executive directors on the board of directors is 81%, and the proportion of independent directors on the board of directors is lower at 60%. The average absolute value of discretionary accruals calculated using the modified-Jones model is approximately 8% of lagged total assets. The average absolute change in net income was approximately 7% of last-year total assets, while the average company had a leverage ratio 0.44. Previous research has demonstrated that these two variables are positively associated with the occurrence of earnings management (Klein, 2002a; Klein 2002b; Davidson et al., 2005). The

average market-to-book ratio is approximately 2.9. This ratio has been found in prior research to be positively associated with the independence of board of directors (Klein, 2002b; Davidson et al., 2005). Panel C displays the dummy variables used in the regression model. It shows 94% of firms having a majority of non-executive directors on the board. The same percentage of firms has separated the role of the board chair and CEO. Panel C also shows 90% of firms having an audit committee composed solely of non-executive directors, and 100% of firms having an audit committee composed of a majority of non-executive directors. Some 96% of audit committee members are non-executives (not reported).

Table 2. Descriptive statistics of variables

Panel A: Financial Variables					
Variable	Mean	Standard Deviation	Minimum	Median	Maximum
Total assets (\$'000)	453,261	996,719	1,075	112,707	7,421,000
Net income (\$'000)	31,372	108,740	-27,724	9,123	919,000
Cash flow from operations (\$'000)	49,537	203,919	-32,795	7,559	1,703,000
Total Accruals	-0.0480	0.1481	-1.1183	-0.0199	0.1652
Discretionary accruals	-0.0519	0.1430	-1.1587	-0.0264	0.1164
Panel B: Continuous Regression Variables					
Absolute discretionary accruals (DAC)	0.0800	0.1292	0.0011	0.0524	1.1587
Board size (BDSIZE)	5.8316	1.5097	3	6	12
Proportion of non-executive directors on the board of directors (BDIND: Model 2)	0.8100	0.1544	0.5000	0.8333	1.0
Proportion of independent directors on the board of directors (BDIND: Model 3)	0.6013	0.2299	0.2000	0.5714	1.0
Leverage (LEV)	0.4429	0.3359	0.0003	0.4046	2.5414
Market-to-book ratio (MKTBK)	2.8773	2.9680	-4.0982	2.0654	15.1002
Absolute change in net income (ABSCH)	0.0726	0.1333	0.0000	0.0260	0.6365
Natural log of total assets (SIZE)	18.3280	2.0078	13.8878	18.5403	22.7276
Panel C: Dummy Regression Variables					
	Firms	Percentage			
Board of directors					
Composed of a majority of non-executive directors (BDIND: Model 1)	95	94%			
Independent role of the board Chair (INDCHAIR)	95	94%			
Audit committee					
Composed solely of non-executive directors (ACIND: Model 4)	88	90%			
Composed of a majority of non-executive directors (ACIND: Model 5)	88	100%			

Table 3. Pearson correlation analysis of variables
(p-value, two-tailed)^a

	DAC	BDSIZE	BDIND Model 1	BDIND Model 2	BDIND Model 3	INDCHAIR	ACIND Model 4	ACIND Model 5	LEV	MKTBK	SIZE
DAC	1										
	(-)										
BDSIZE	0.151	1									
	(0.142)	(-)									
BDIND_ model 1	-0.075	0.244**	1								
	(0.468)	(0.017)	(-)								
BDIND_ model 2	-0.218**	0.056	0.539***	1							
	(0.033)	(0.591)	(0.000)	(-)							
BDIND_ model 3	-0.044	-0.293***	0.164	0.455***	1						
	(0.673)	(0.003)	(0.113)	(0.000)	(-)						
INDCHAIR	0.029	0.005	-0.061	0.029	-0.071	1					
	(0.781)	(0.964)	(0.555)	(0.783)	(0.493)	(-)					
ACIND_ model 4	-0.294***	0.056	0.212**	0.368***	0.280***	-0.076	1				
	(0.003)	(0.589)	(0.039)	(0.000)	(0.005)	(0.462)	(-)				
ACIND_ model 5	-0.010	0.324***	0.092	-0.013	-0.179	0.114	-0.091	1			
	(0.924)	(0.001)	(0.373)	(0.898)	(0.082)*	(0.271)	(0.379)	(-)			
LEV	0.238**	0.013	-0.234**	-0.205***	-0.070	-0.122	-0.210**	0.043	1		
	(0.020)	(0.899)	(0.022)	(0.045)	(0.502)	(0.238)	(0.041)	(0.680)	(-)		
MKTBK	0.048	0.002	0.054	-0.068	-0.127	0.052	-0.291***	0.006	-0.010	1	
	(0.641)	(0.987)	(0.602)	(0.511)	(0.219)	(0.616)	(0.004)	(0.957)	(0.925)	(-)	
SIZE	-0.211**	0.547***	0.231**	0.103	-0.072	-0.063	0.275***	0.352***	0.128	-0.124	1
	(0.040)	(0.000)	(0.024)	(0.321)	(0.487)	(0.541)	(0.007)	(0.000)	(0.218)	(0.233)	(-)

*** Significant at 0.01 level, ** Significant at 0.05 level, * Significant at 0.10 level

^a SPSS computes the exact correlation regardless of whether they are continuous or dummy variables (Davidson et al., 2005).

Table 3 provides a Pearson correlation analysis between the dependent and independent variables in the regression model [5]. Most corporate governance variables are not significantly related to discretionary accruals, a proxy for earnings management. Board size is positively related to DAC but not significant. Leverage is significantly positively related to DAC, while firm size is significantly negatively related to DAC. As illustrated in Table 3, there is no multicollinearity among the independent variables. The highest correlation for the independent variables is between board size and firm size, with a coefficient of 0.547 which is less than 0.80 or 0.90. In addition, none of the independent variables has a variance inflation factor greater than 10, confirming that collinearity presents no concern for this study. It is noted that ACIND_Model 4 is significantly related to BDIND (Models 1 to 3). As a result, we do not include both the independence of board of directors (BDIND) and the independence of audit committee (ACIND) in the same regression (see Models 1, 2, and 3 in Table 4) but provide additional robustness tests under additional analysis in section 4.3.

4.2 Multivariate results

The results of the multivariate analysis of Equation 4 are shown in Table 4. Models 1, 2, and 3 do not include the independence of audit committee (ACIND) in the same regression with the independence of board of directors (BDIND), as the audit committee is a subcommittee of the board and thus the variables are not independent (Bradbury et al., 2006). This is further supported by the significant correlation between the two variables, as shown in Table 3. In Model 1, BDIND is a dummy variable taking the value of 1 if the board is composed of a majority of non-executive directors, and 0 otherwise. In Model 2, BDIND is measured as a proportion of non-executive directors on the board of directors. In Model 3, BDIND is measured as proportion of independent directors on the board of directors. Models 4 and 5 do not include BDIND in the same regression with ACIND for the same reason explained above; that is, we replace BDIND with ACIND. In Model 4, ACIND is a dummy variable taking the value of 1 if the audit committee is composed solely of non-executive directors, and 0 otherwise. In Model 5, ACIND is a dummy variable taking the value of 1 if the audit committee is composed of a majority of non-executive directors, and 0 otherwise. However, we also include both ACIND and BDIND in the same regression to provide additional robustness tests under additional analysis in section 4.3. The results in Table 4 indicate that board size (BDSIZE) in Models 1 to 5 is positively significantly related to DAC, a proxy for earnings management, thus supporting Hypothesis 1. These results are

consistent with the findings of Jensen (1993), Dechow et al. (1996), Beasley (1996), Peasnell et al. (2005), Ching et al. (2006), and Rahman and Ali (2006). That is, larger boards are ineffective in their monitoring function to constrain earnings management relative to smaller boards and are susceptible to the CEO's control over board matters. On the other hand, smaller boards may mitigate the possibility of free riding by individual directors when the board becomes too large.

There is no significant relationship between BDIND and DAC in Models 1 [6] to 3, thus rejecting Hypothesis 2. This finding is in contrast to that found by several studies (Beasley, 1996; Dechow et al., 1996; Klein, 2002a; Xie et al. (2003); Davidson et al., 2005; Marra et al., 2011; Bekiris and Doukakis, 2011) that show a lower level of earnings management is associated with more-independent boards of directors. That is, an independent board of directors is negatively associated with earnings management. However, the result of our study is similar to other studies that do not find any statistically significant association between the two variables (Chtourou et al., 2001; Park and Shin, 2004; Rahman and Ali, 2006; Bradbury et al., 2006).

Earnings management as measured by DAC is not associated with the separation of the independent role of the board chair and CEO (INDCHAIR), as shown in Table 4. This is consistent with prior studies that show that separating the role of the chair and CEO has no effective monitoring function in restraining earnings management (Davidson et al., 2005; Bradbury et al., 2006; Rahman and Ali, 2006). Hypothesis 3 is thus not supported.

The result also shows no significant negative relationship between ACIND and DAC in Models 4 and 5, suggesting no effectiveness of the independent audit committee in constraining earnings management. Hypothesis 4 is thus not supported. This is consistent with studies by Xie et al. (2003), Peasnell et al. (2005), Yang and Krishnan (2005), Rahman and Ali (2006), and Garcia Osma and Nogueira, (2007). Klein (2002b) found that although it is important to have independent audit committees, often the non-executives lack the involvement and inside knowledge to detect subtle earnings manipulations. Nevertheless, the result is in contrast with that found by Klein (2002a), Abbott et al. (2004), Davidson et al. (2005), Baxter and Cotter (2009), and Kent et al. (2010), where independent audit committee has been found to be significantly negatively associated with earnings management.

In summary, the insignificant relationship between DAC and other corporate governance variables (BDIND, INDCHAIR, and ACIND) may be due to the inability of the independent board of directors and the audit committee in performing

their oversight duties to constrain earnings management and the dominance of the CEO over board matters.

Finally, among the control variables, we find only firm leverage (LEV) and size (SIZE) to be significantly positively and negatively related to DAC, respectively. This suggests that a firm with high leverage is more likely to engage in earnings management. The result is consistent with prior studies that have found leverage to be positively associated with earnings manipulations when a firm is close to breaching debt covenants (Klein, 2002a;

Bartov et al., 2001; Davidson et al., 2005). In addition, the negative relation between SIZE and DAC suggests that larger firms are more carefully monitored by the market and other stakeholders, making it more difficult for them to engage in earnings management. This finding is consistent with those found by prior studies (Klein, 2002a; Bartov et al., 2001; Xie et al., 2003; Park and Shin, 2004; Davidson et al., 2005; Rahman and Ali, 2006; Marra et al., 2010).

Table 4. Multiple Regression Results of DAC and Corporate Governance Mechanisms Variables

Both the Independence of Board of Directors (BDIND) and the Independence of Audit Committee (ACIND) are not included in the same regression. One-tailed coefficient p-values are reported in parenthesis when prediction is as predicted, otherwise two-tailed.

$$DAC = \alpha + \beta_1 BDSIZE + \beta_2 BDIND + \beta_3 INDCHAIR + \beta_4 ACIND + \beta_5 LEV + \beta_6 MKTBK + \beta_7 ABSCH + \beta_8 SIZE + \varepsilon$$

Variable	Expected Sign	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept		0.350** (0.024)	0.415*** (0.008)	0.326** (0.037)	0.357** (0.018)	0.352** (0.021)
BDSIZE	+	0.032*** (0.001)	0.032*** (0.001)	0.034*** (0.000)	0.031*** (0.001)	0.032*** (0.001)
BDIND	-	0.003 (0.953)	-0.131 (0.122)	0.039 (0.487)		
INDCHAIR	-	0.021 (0.700)	0.025 (0.652)	0.023 (0.672)	0.016 (0.771)	0.020 (0.714)
ACIND	-				-0.074 (0.113)	0.004 (0.941)
LEV	+	0.115*** (0.004)	0.103*** (0.007)	0.117*** (0.002)	0.098** (0.011)	0.115*** (0.001)
MKTBK	?	-0.000 (0.903)	0.000 (0.809)	-0.000 (0.975)	0.000 (0.570)	-0.000 (0.905)
ABSCH	+	0.025 (0.827)	0.063 (0.591)	0.019 (0.868)	0.056 (0.629)	0.025 (0.829)
SIZE	-	-0.029*** (0.001)	-0.027*** (0.001)	-0.030*** (0.000)	-0.024*** (0.005)	-0.029*** (0.001)
Adjusted R ²		0.169	0.192	0.174	0.193	0.169
F statistic		3.735	4.188	3.825	4.209	3.735
p-values		0.001	0.001	0.001	0.000	0.001

*** Significant at 0.01 level, ** Significant at 0.05 level

4.3 Additional analysis

Additional sensitivity tests are performed to see if our results are robust to different specifications. We now include both of the independent variables, the independence of board of directors (BDIND) and the independence of audit committee (ACIND), in the same regression, as our earlier test included only one of the two variables at a time in the regression when the results were presented in Table 4. We then apply different definitions of the independent variables as defined earlier. First, we

define ACIND as a dummy variable with a value of 1 if the audit committee is composed solely of non-executive directors, and 0 otherwise (the same measure as in Model 4 previously). Results are shown in Table 5. The regression results in Table 5 are similar to those shown in Table 4 earlier, with the exception of a marginally negative significance at the 0.10 level for ACIND under Model 3. Second, when ACIND is a dummy variable with a value of 1 if the audit committee is composed of a majority of non-executive directors, and 0 otherwise (the same measure as in Model 5

previously), the results are quantitatively similar to Table 4 under Models 1 to 3 but without a significant result at the 0.10 level for ACIND (not reported). Third, when ACIND is defined as the proportion of non-executive directors on the audit committee board, the results are quantitatively similar to Table 4 under Models 1 to 3 (not reported). Again, no significant result was found at

the 0.10 level for ACIND. Finally, when BDIND is a dummy variable taking the value of 1 if the board is composed of a majority of independent directors on the board of directors, and 0 otherwise, the results are also very similar to those reported in Table 4 under Models 1 to 3. Overall, the sensitivity tests support the initial findings provided in Table 4.

Table 5. Multiple Regression Results of DAC when All Corporate Governance Mechanisms Variables are in the Model

Both the Independence of Board of Directors (BDIND) and the Independence of Audit Committee (ACIND) are included in the same regression. One-tailed coefficient p-values are reported in parenthesis when prediction is as predicted, otherwise two-tailed.

$$DAC = \alpha + \beta_1 BDSIZE + \beta_2 BDIND + \beta_3 INDCHAIR + \beta_4 ACIND + \beta_5 LEV + \beta_6 MKTBK + \beta_7 ABSCH + \beta_8 SIZE + \varepsilon$$

Variable	Expected Sign	Model 1	Model 2	Model 3
Intercept		0.350** (0.023)	0.404*** (0.010)	0.315** (0.041)
BDSIZE	+	0.030*** (0.001)	0.031*** (0.001)	0.034*** (0.001)
BDIND	-	0.014 (0.790)	-0.100 (0.255)	0.066 (0.257)
INDCHAIR	-	0.017 (0.757)	0.020 (0.718)	0.019 (0.731)
ACIND ^a	-	-0.076 (0.111)	-0.058 (0.235)	-0.088* (0.070)
LEV	+	0.101** (0.012)	0.093** (0.017)	0.099*** (0.010)
MKTBK	?	0.000 (0.555)	0.000 (0.576)	0.000 (0.609)
ABSCH	+	0.055 (0.638)	0.078 (0.508)	0.051 (0.661)
SIZE	-	-0.025*** (0.005)	-0.024*** (0.006)	-0.025*** (0.004)
Adjusted R ²		0.184	0.196	0.196
F statistic		3.653	3.861	3.859
p-values		0.001	0.001	0.001

*** Significant at 0.01 level, ** Significant at 0.05 level, * Significant at 0.10 level

^a ACIND is a dummy variable with a value of 1 if the audit committee is composed solely of non-executive directors, and 0 otherwise (the same measure as in Model 4 previously).

5. Summary and conclusions

The objective of this paper is to investigate the role of corporate governance in constraining the magnitude of earnings management. It examines the relation between earnings management (as measured by discretionary accruals) and corporate governance mechanisms (as measured by board size and independence of board of directors, independent role of the board chair, and independent audit committees) for firms listed on the New Zealand Stock Exchange for the financial year ending in 2005. Prior research in the area of earnings management has mainly focused on

relatively larger markets, such as the US, UK, and Australia. Our paper is distinctive due to the smaller size, geographical isolation, and less regulated nature of New Zealand listed companies. Therefore, the findings based on larger markets may not be generalized to New Zealand.

The results show that the size of the board of directors is significantly positively associated with earnings management, thus supporting our Hypothesis 1. This suggests the view that larger boards seem to be ineffective in their monitoring function to constrain earnings management relative to smaller boards and are susceptible to the CEO's control over board matters. Thus, New Zealand

firms may overinvest in the number of members on the board of directors. With respect to our Hypothesis 2, which examines the association between the independence of board of directors and earnings management, no significant relationship was found in Models 1 to 3. Thus, Hypothesis 2 is rejected. The findings also do not support Hypotheses 3 and 4 concerning the associations between the independent role of the board chair and CEO and the independence of audit committees with respect to earnings management. Thus, these three corporate governance mechanisms are ineffective at monitoring the discretionary choices of management. The lack of effective corporate governance in New Zealand, particularly with regard to boards of directors, is mainly due to the lack of “experience and skills required to oversee the scale, complexity, and characteristics of finance operations” (Ministry of Economic Development, 2009, p.8).

Endnotes

1. Tests of earnings management include the assessment of accounting policy changes (Healy, 1985; Sweeney, 1994), specific accounting transactions (McNichols and Wilson, 1988), discretionary accruals (Jones, 1991), and small profits or small changes in earnings (Holland and Ramsay, 2003). See Davidson et al. (2005, p. 249).
2. The cross-sectional variations of the Jones (1991) and modified-Jones models were found by DeFond and Subramanyam (1998) and Bartov, Gui, and Tsui, (2001) to be the most consistent in detecting earnings management when compared with time-series versions and other models.
3. Becker, DeFond, Jiambalvo, and Subramanyam (1998); Hribar and Collins (2002); Davidson et al. (2005).
4. The cash flow approach to estimating total accruals was found by Hribar and Collins (2002) to be a superior method when compared with the traditional balance sheet approach (as used in Jones, 1991; Dechow et al., 1995), as it excludes non-operating aspects of accruals.
5. SPSS computes the exact correlation regardless of whether they are continuous or dummy variables (Davidson et al., 2005).
6. An additional test was performed, and it provided a similar result to that of Model 1 when BDIND is defined as a dummy variable taking the value of 1 if the board is composed of a majority of independent directors on the board of directors, and 0 otherwise.

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