Audit Committee Characteristics and Earnings Management in New Zealand

A dissertation submitted to Auckland University of Technology in partial fulfilment of the degree of Master of Business

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ATTENTION OF AUTHORSHIP

I hereby declare that the submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

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ABSTRACT

Recent corporate scandals at Enron, followed by WorldCom, Xerox, Royal Ahold, HealthSouth and similar others, put the spotlight on the effectiveness of corporate governance mechanisms in monitoring the financial reporting process. One specific area of concern is the monitoring function of the audit committee on earnings management. Prior research on audit committees and earnings management is based on relatively larger markets such as the U.S., UK and Australia. This study examines the association between audit committee characteristics and earnings management in a relatively smaller capital market such as New Zealand.

New Zealand provides a unique context for this study because its legal and institutional environment is different from that of larger markets such as the U.S., UK and Australia. Her smaller size and reliance on the international economy, geographical isolation, and less regulated nature suggest that the findings based on larger markets may not be generalizable to New Zealand. Further, the New Zealand market is characterised by large concentrated ownership and directors serving on multiple boards. It is not clear how these unique characteristics affect the effectiveness of corporate governance.

This study provides initial evidence on the association between audit committees and earnings management in New Zealand. Specifically, the study investigates the association between the likelihood of earnings management and (i) independence of the audit committee, (ii) expertise of the audit committee, (ii) shareholding of directors on the audit committee, and (iv) multiple directorships held by directors on the audit committee. The study also investigates the association between the New Zealand regulation on the audit committee and the likelihood of earnings management.

The results of the study suggest an audit committee comprising majority independent directors reduces the likelihood of earnings management. A completely independent audit committee is not associated with the likelihood of earnings management. Greater proportion of directors with expertise, whether non-executive or independent, is associated with a lower likelihood of earnings management. However, the results suggest having one independent expert rather than one non-executive expert is associated with a reduction in the likelihood of earnings management. In relation to directors' shareholding, the results suggest greater shareholding increases the likelihood of earnings management. There is some evidence that greater multiple directorships increases the likelihood of earnings management. Finally, the results relating to the New Zealand corporate governance regulation suggest an audit committee comprising majority independent directors and one independent expert reduce the likelihood of earnings management.

This study fills an important void recognised by Bushman and Smith (1999) who call for governance research in smaller markets outside the U.S. to enhance our understanding of the legal and institutional impact on corporate governance. It provides the first evidence on audit committee and earnings quality in New Zealand, and therefore, has potential implications for regulations and policy makers in New Zealand. The findings of this research can also serve as a benchmark for studies in smaller countries with an institutional, economic, and legal environment similar to New Zealand.

1.0 INTRODUCTION AND BACKGROUND

This study provides initial evidence on the association between audit committees and earnings management in New Zealand. Specifically, the study investigates the association between the likelihood of earnings management and (i) independence of the audit committee, (ii) expertise of the audit committee, (ii) shareholding of directors on the audit committee, and (iv) multiple directorships held by directors on the audit committee. The study also investigates the association between the New Zealand regulation on the audit committee and the likelihood of earnings management.

New Zealand provides a unique context for this study because its legal and institutional environment is different from that of larger markets such as the U.S., UK and Australia. Her smaller size and reliance on the international economy, geographical isolation, and less regulated nature suggest that the findings based on larger markets may not be generalizable to New Zealand. Further, the New Zealand market is characterised by large concentrated ownership and directors serving on multiple boards. It is not clear how these unique characteristics affect the effectiveness of corporate governance.

Recent corporate scandals such as Enron, followed by WorldCom, Xerox, Royal Ahold, HealthSouth and similar others, put the spotlight on the effectiveness of corporate governance mechanisms in monitoring the financial reporting process. One specific area of concern is the monitoring function of the audit committee on earnings management. The Securities and Exchange Commission in the U.S. was concerned about the audit committees' incapacity to address earnings management thus diminishing the quality of financial reporting. The Sarbanes-Oxley Act (2002) in the U.S. thus mandates the role of the audit committee and strengthens its composition to

oversee the financial reporting process. The Smith Committee in the UK (2003) and the Australian Stock Exchange (2003) also endeavour to strengthen the role and the composition of the audit committee in executing its financial reporting oversight responsibilities.

International pressures are likely to influence corporate governance practices in New Zealand, if it continues to attract and retain foreign investment. New Zealand relies considerably on foreign capital because of her small capital market. New Zealand regulators recently took a step towards international practice through the introduction of corporate governance principles by the New Zealand Stock Exchange (NZX) (2004) and the New Zealand Securities Commission (NZSC) (2004). In relation to the audit committee, the NZX (2004) listing rules (para 3.6) and the NZSC (2004) (para 3.4) recommend the establishment of an audit committee comprising majority independent directors and at least one member with an accounting and financial background.[1] The NZX (2004) listing rules (Appendix 16, para 3.1) and the NZSC (2004) (para 3.4) also suggest audit committees comprise solely of non-executive directors.[2] In addition, the NZX (2004) listing rules (para 3.6.2) recommend that listed firms in New Zealand should have a minimum of three directors on their audit committee. An additional statement issued by the NZSC (2004) at paragraph 3.4 suggests audit committees have an independent chairperson. As these audit committee 'requirements' are guidelines, it is debatable whether New Zealand should mandate some or all of the regulatory requirements of audit committees as in the larger capital markets such as the U.S.

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[1] The NZX listing rule states on page 5 para 14 that the corporate governance rules set minimum standards for listed issuers to enhance market confidence and reduce the level of uncertainty.

[2] The NZX listing rule on page 5 para 14 states that the principles contained in the Corporate Governance Best Practice Code are corporate governance principles that may be desirable and which an issuer should consider and determine whether or not to adopt.

While New Zealand cannot afford to fall behind overseas regulatory developments, there is a risk in adopting these developments in New Zealand given the uniqueness of the New Zealand capital market compared to other larger overseas markets. First, there are fundamental differences between New Zealand and the U.S. market. In contrast to the U.S., where a rules-based approach is adopted, New Zealand takes a principles-based approach. Under the New Zealand system, the reform for the audit committee to comprise solely of non-executive directors is a guideline rather than mandatory (NZSC, 2004; NZX, 2004). In the U.S., companies listed on the New York Stock Exchange and NASDAQ are required to have an audit committee comprising entirely of independent directors (Sarbanes-Oxley Act, 2002). Firms in New Zealand are given more discretion as to the composition of the audit committee and, more surprisingly, whether to establish an audit committee or not.

Second, when compared to the UK (where the principles-based approach is also adopted), the formation and composition of the audit committee in New Zealand seems to have more flexibility. In the UK, it is suggested that all listed firms have independent (Smith Committee, 2003) rather than non-executive directors on the audit committee as is the case in New Zealand. The definition for non-executive directors is much broader than that of independent directors.[3] Non-executive directors include both independent directors and grey directors. Independent directors do not have any relationship with the firm other than in their capacity as a director of the board. In contrast, grey directors have some affiliation with the firm other than the affiliation from being on the board of the firm (Beasley, 1996). Examples of non-board affiliations include being consultants,

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[3] Non-executive directors are not employees or involved in the management of the firm. Non-executive directors are regarded independent if they are not substantial shareholders holding 5% or more of the voting securities of an entity and has no other direct or indirect interest or relationship that could reasonably influence his or her objective judgement and decision-making (NZSC, 2004).

suppliers, bankers, former employees of the firm, and relatives of management (DeZoort et al., 2002). Such non-board relationships are a potential source of violation of independence. Thus, the UK governance regulation is more stringent than in New Zealand because it suggests all audit committee members must be independent directors.

As compared to the U.S. and UK, New Zealand is less regulated. This is because of the small size of its listed public issuers. For example, to comply with a more prescriptive governance framework, boards may have to spend more time and effort on compliance rather than ensuring the company performs better. In addition, the requirement for an audit committee to have at least three directors and a majority of independent directors could require a larger board and audit committee. It can be too costly for smaller companies to compensate external people to sit on their audit committee. Thus, as pointed out by ICANZ (2003), the small size of New Zealand public listed firms makes her market less able to bear the costs of legislative compliance, as they may not have sufficient resources to conform to the regulations while maintaining their operating performance. The regulation of audit committee cannot ensure their efficiency (Rainsbury, 2004).

Third, the unique nature of the small capital market in New Zealand can lead to other factors that may affect governance monitoring. Because the size of the market is small, one might expect that people can be more closely related to, and monitored by, each other, and thus the need for costly monitoring by corporate directors may be diminished. While this creates transparency, it also creates social ties and interlocks that could influence the objectivity of the directors. For example, it is common for directors in one company to sit on the board of other companies, with reciprocal

arrangements. Such close relationships can pose threats to independence and negatively affect the ability of the audit committee to monitor the financial reporting process.

Fourth, the regulatory environment in New Zealand is less stringent (Hossain et al., 2001) because the litigation risk associated with financial misstatements and accounting fraud is less than that in larger markets such as the U.S. For example, relative to New Zealand, the U.S. legislation imposes stricter and harsher penalties for corporate executives misappropriating company finances. In addition, U.S. laws protect whistle blowers while there is no such regulation in New Zealand. Imposing U.S. style regulations in a less litigious environment like New Zealand may not be warranted and therefore, are likely to be uneconomical.

Taken together, the small, less litigious, and less regulated environment suggests that corporate directors in New Zealand have less incentives and fewer powers to monitor the financial reporting process than in larger markets. This questions the effectiveness of New Zealand regulators adopting audit committee regulations similar to those in larger jurisdictions such as the U.S., UK, and Australia.

Given the differences in the legal and institutional environment between New Zealand and the larger markets, the modus operandi of audit committees in New Zealand may be different and the empirical findings in the context of larger markets may not be generalizable to New Zealand. This study extends the corporate governance literature by examining the association between audit committee characteristics and earnings management in New Zealand. It fills a research void highlighted by Bushman and Smith (1999) who call for more research on smaller capital markets to enhance our understanding of how institutional characteristics and legal differences influence

corporate governance practices. The results can also serve as a benchmark for studies in countries with an institutional and economic environment similar to New Zealand.

This study also contributes to the current literature in two important ways. First, it investigates how the oversight role of the audit committee is influenced by the level of shareholding held by audit committee members, which is recognised by DeZoort et al. (2002) and Sharma and Iselin (2006) as one of the potential factors influencing the audit committee's effectiveness. Agency theory argues audit committee members with shareholding may more vigilantly monitor the financial reporting process as they act to protect their own interests (e.g., Short & Keasey, 1999). However, the alternative view argues that large shareholding could create conflict of interests such that directors on the audit committee could support rather than monitor management's policies (e.g., Mangena & Pike, 2005).

Second, the study also considers the possible impairment effect of multiple directorships on the effectiveness of the audit committee. While multiple directorships may signal audit committee members' reputation as experienced monitors (e.g., Fama & Jensen, 1983a; Ferris et al., 2003; Sharma & Iselin, 2006), too many outside directorships may make them overcommitted and too busy to conduct effective monitoring (e.g., Beasley, 1996; Sharma & Iselin, 2006). Thus, there may be need to limit the number of additional directorships held by audit committee members. This study provides initial evidence to consider whether the NZX and/or the NZSC should adopt guidelines similar to those of the National Association of Corporate Directors (NACD) (1996) in the U.S., and limit the number of other directorships held by audit committee members.

A study of the level of shareholding and multiple directorships held by audit committee directors can help explain the inconsistent findings in the paradigm on audit committee characteristics and financial reporting (Sharma & Iselin, 2006). For example, while Bedard et al. (2004) observe a negative association between a wholly independent audit committee and the quality of financial reporting, Klein (2002) finds a positive effect, which is contrary to the intent of the Sarbanes-Oxley Act (2002) and other regulation that require a wholly independent audit committee. Sharma and Iselin (2006) argue such inconsistent results could be potentially explained by the incentives (shareholding and multiple directorships) facing the directors. Incentives arising through shareholding and multiple directorships may motivate independent directors to effectively perform their monitoring responsibilities thus making some independent directors more effective than others.

The next section reviews the relevant literature and develops the hypotheses. Section 3 describes the research method, including the sample and model specification. This is followed by the results section, which includes sensitivity tests. The final section concludes the paper and identifies potential limitations and avenues for future research.

2.0 LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

2.1 Audit Committee Independence

It is generally believed that an independent audit committee provides effective monitoring of the financial discretion of management and in ensuring the credibility of the financial statements. An audit committee is a sub-committee of the board that specialises in, and is responsible for, ensuring the accuracy and reliability of the financial statements provided by management. Indeed, much of the blame and criticism

for accounting irregularities is aimed at audit committees for not fulfilling their financial reporting oversight duties due to independence issues (Pergola, 2005). The literature, however, is inconsistent regarding whether a majority independent audit committee or a completely independent audit committee is more effective in detecting and preventing earnings management.

Using a sample of 692 publicly traded U.S. firms, Klein (2002) investigates whether earnings management is related to audit committee independence. She uses abnormal accruals derived from the Jones (1991) model as a proxy for earnings management. Audit committee independence is defined in three ways: 1) the percentage of non-related outside directors on the audit committee, 2) all members are outside directors, and 3) majority of the audit committee members are outside directors. Klein (2002) finds a negative association between earnings management and the proportion of outside directors on the audit committee, or audit committees comprising majority independent directors and earnings management. However, she finds a positive association and therefore argues there is no 'meaningful relation' (Klein, 2002, p. 389) between audit committees comprising entirely of independent directors and earnings manipulation. This result questions whether 50 percent or 100 percent is the critical threshold for the composition of independent directors on the audit committee, and why earnings manipulation appears to increase when the audit committee is presumably free of influence from management.

Bedard et al. (2004) use the cross-sectional version of the Jones model to estimate the size of discretionary accruals as measures of earnings management on a sample of 300 U.S. firms for 1996. The sample is divided into three groups: firms with aggressive income-increasing earnings management, firms with aggressive income-

decreasing earnings management, and firms with low levels of earnings management. In contrast to Klein's (2002) findings, their results indicate no meaningful association between 50-99 percent independent directors on the audit committee and aggressive earnings management. However, a significant negative effect on aggressive earnings management is found for audit committees comprising 100 percent independent directors. These results support the Sarbanes-Oxley Act (2002) mandating complete independence of the audit committee.

Davidson et al. (2005) study the association between non-executive directors on audit committees and earnings management based on a cross-section of 434 Australian listed firms for the year 2000. Discretionary accruals estimated from the modified-Jones model are used to measure earnings management. The results of the study show that audit committees with majority non-executive directors are associated with a significant reduction in earnings management, and that audit committees comprising exclusively of non-executive directors is not related to earnings manipulation. However, in their sensitivity test, when non-executive directors with related party transactions are regarded as non-independent, they find no significant relationship between an audit committee with majority independent directors and earnings management. The mixed findings can be explained by their sample selection and the exclusion of certain important variables. First, their sample includes mining, oil and gas, and financial firms. Due to the nature of their operations, these industries have different accrual processes that are hard to define and their accruals are difficult to estimate (Klein, 2002; Wells, 2002). Thus, firms from those industries should be excluded from the sample. However, in their study, these firms represent about 33 percent of the entire sample. Second, the empirical models in Davidson et al. (2005) do not include important audit

committee variables such as financial expertise, percentage of shareholding and directorships of the audit committee members.

This study extends the corporate governance literature, and tests the effectiveness of corporate governance in New Zealand. Despite the inconsistent findings in the literature reported above, the study proposes a negative association between the independence of the audit committee and earnings management. Regulators, both overseas and in New Zealand, recognize the importance of the independence of the audit committee as an essential characteristic to ensure effective monitoring of the financial reporting process. For example, Section 301 of the Sarbanes-Oxley Act (2002) requires all audit committee members to be independent. The Smith Committee in the UK (2003), through the January 2003 Higgs' Report, also recommends that audit committees of all listed firms have independent directors (Smith Committee, 2003). In the wave of this reform, in 2003, the Australian Stock Exchange (2003) issued a non-mandatory set of principles, 'Principles of Good Corporate Governance and Best Practice Recommendations'. It suggests the audit committee comprise non-executive directors with at least one independent director being the chairperson of the audit committee. Similarly, both the NZX (2004) and the NZSC (2004) amended the rule for audit committee independence and requires the audit committee comprise only non-executive directors, a majority of whom are independent directors. The NZSC (2004) specifically suggests the chairperson be an independent director and not be the chairperson of the board.

Besides these regulations, it is well established in the literature (e.g., Byrd & Hickman, 1992; McWilliams & Sen, 1997) that directors not affiliated with management play an important role in ensuring a high standard of corporate governance

and effective monitoring. The role of independent directors is to bring independence to the board and provide an outsider's contribution and oversight. As argued by Fama and Jensen (1983a; 1983b), independent directors have incentives to develop and signal their reputation to the market by maintaining independence and managerial competence. If they fail to objectively and competently monitor the financial reporting process, they expose themselves to potential litigation and loss of directorships. Therefore, independent directors are more likely to challenge management. They will ask questions and seek answers from management in order to protect shareholders' interest. Regulatory beliefs and agency theory suggest a negative association between the independence of the audit committee and aggressive earnings management.

H1: The independence of the audit committee is negatively associated with aggressive earnings management.

2.2 Audit Committee Expertise

Regulators from various countries realise the importance of financial expertise[4] for improving the audit committee's effectiveness. They believe that the relevant experience or technical knowledge is crucial for effective accounting oversight (Kalbers & Fogarty, 1993). For example, the Sarbanes-Oxley Act (2002) mandates that at least one member of the audit committee must be a financial expert. In the UK, the Smith report (2003) echoes the views of the Sarbanes-Oxley Act and specifies that at least one audit committee member must have significant, recent and relevant financial expertise. Similarly, the audit committee of listed companies in New Zealand are required to have at least one member with an accounting or financial background. Despite these

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[4] Financial expertise is different from financial literacy. Financial expertise is typically demonstrated by employment experience or certification in accounting or finance (PricewaterhouseCoopers/IIA, 2000), whereas financial literacy refers to the ability to read and understand basic financial statements, as mentioned in the report of the Blue Ribbon Committee (1999).

regulatory requirements, there is lack of sufficient empirical support for an association between financial expertise and earnings management.

In the U.S., not all published literature documents a significant negative association between financial expertise and earnings management. For example, while Bedard et al. (2004) find that financial expertise is associated with a significant decrease in earnings management, Xie et al. (2003) detect no significant association. In addition, the results in Abbott et al. (2004) show that financially sophisticated members are not related to the probability of financial fraud. It seems that further evidence is needed to test the association between financial expertise and earnings manipulation.

This study extends the literature and empirically examines the effect of financial expertise of audit committee members on aggressive earnings management. Apart from the regulations, many researchers argue that the effectiveness of the audit committee in detecting earnings management is enhanced by including financial experts. McDaniel et al. (2002) claim that directors with sufficient financial or accounting background can better understand how earnings are manipulated and the implications of earnings management, and thus they are more likely to identify financial reporting problems. The relevant financial experience or technical knowledge allows financial experts to address and/or detect material misstatements in a timely manner (Abbott et al., 2004). In addition, because of their ability to understand the substance of the transactions, financially sophisticated directors are in a better position to support the auditor during disputes with management regarding financial reports (DeZoort et al., 2002). Guided by regulatory beliefs and prior studies, a negative association is predicted between the presence of financial experts on the audit committee and aggressive earnings management.

H2: The presence of financial expertise on the audit committee is negatively associated with aggressive earnings management.

2.3 Audit Committee Member Shareholding

Although Kalbers and Fogarty (1993, p. 44) recognize that for an audit committee to be effective, where audit committee members must 'bring a desire to carry out their duties', there is a lack of research on what causes this demand for directors to perform their duties. DeZoort et al. (2002) and Sharma and Iselin (2006) identify audit committee stock ownership as one of the potential factors which can affect audit committee performance, and call for more research on the association between stock ownership of the audit committee members and the quality of financial reporting. This study explores this issue and provides explanations that may help to explain the inconsistent findings in the literature between audit committee independence and earnings management.

It has been argued from the agency perspective that the level of ownership can have a positive impact on the incentives of directors in monitoring the financial reporting process. For example, both Morck et al. (1988) and Short and Keasey (1999) suggest that financial interest in the firm motivates outside directors to devote time and effort to ensure high quality financial reports. Jensen (1989) and Shivdasani (1993), and more recently, Sharma and Iselin (2006) also argue that when directors have an equity stake in the firm, they are more likely to be concerned about the governance of the firm, to challenge or discipline management for poor financial reporting, and to encourage better disclosure in the firm's financial reports. This suggests that earnings quality may improve if audit committees have directors owning more shares in the company. Sharma and Iselin (2006) provide recent evidence on stock ownerships and

earnings quality. Their evidence suggests share ownership by directors on the audit committee enhances the quality of financial reporting in the U.S.

However, a contrary view argues that director shareholding can lead to conflicts of interest, which is likely to threaten directors' effectiveness in monitoring the financial reporting process (Mangena & Pike, 2005). Audit committee members with greater equity stake may have incentives to protect their investment, which is based on the earnings performance of the firm. This incentive can reduce their motivation to perform their fiduciary duties to monitor management and thus negatively affect the independence of the audit committee (Forker, 1992; Sharma & Iselin, 2006). Carcello and Neal (2003) find that directors with high share ownership may support or even collude with management for protecting their own investment. In this setting, audit committee members with greater shareholding may not challenge management over the quality of the financial reports.

If greater shareholding motivates audit committee members to monitor earnings management more effectively, then there would be a negative association between equity stake held by these directors and earnings management. If, however, the larger equity stake is so significant to the directors that they would rather protect their own investment interests, such an equity stake could threaten the audit committee's effectiveness and would be positively associated with earnings management. This study therefore proposes a null hypothesis between the shareholding of audit committee members and aggressive earnings management.

H3: There is no association between audit committee member shareholding and aggressive earnings management.

2.4 Audit Committee Multiple Directorships

For a director to sit on the audit committee of more than three public companies, the New York Stock Exchange (2003) requires the related board of directors to consider whether the additional directorships would impair their monitoring effectiveness. In New Zealand, because of the small pool of directors available to the market, it is quite common for directors to serve on many boards. However, there are no specific guidelines regarding additional directorships in the NZX (2004) listing rules or in the governance principles issued by the NZSC (2004). In addition, whether multiple directorships would significantly impair the monitoring ability of the audit committee, and whether New Zealand should adopt a recommendation similar to the U.S., is an unanswered empirical question.

Despite regulatory concerns on multiple directorships, there are contrasting views on the effect of multiple directorships on audit committee effectiveness. Fama and Jensen (1983a), Yermack (1996) and Ferris et al. (2003) argue that multiple board appointments can signal directors' quality and reflect their reputation as monitoring specialists. Serving on a number of boards exposes them to different management policies, styles and practices (O'Sullivan, 2005). Such experience can strengthen their monitoring roles and enhance their reputation. These directors could experience relatively lower levels of litigation risk, and are better able to maintain their current board seats or obtain future board seats (Sharma & Iselin, 2006).

Conversely, other studies suggest that multiple directorships could impair the effectiveness of the audit committee. As Morck et al. (1988) note, time and effort are required for the effective monitoring of management. Thus, it is reasonable to expect that as additional directorships increase, the amount of time available for directors to

fulfil their monitoring duties for each firm decreases. This can adversely affect the effectiveness of the audit committee to detect financial reporting irregularities. Beasley (1996) shows that the likelihood of financial statement fraud increases as the number of additional directorships increases.

Collectively, multiple directorships can have both positive and negative impacts on monitoring effectiveness. Additional directorships provide directors with greater experience thus enhancing their monitoring effectiveness. However, because significant time commitment is required of a director to effectively monitor the financial reporting process, too many directorships can make a director too busy to effectively monitor management. When the number of additional directorships exceeds a certain threshold, the negative impact on monitoring effectiveness could be greater than its potential positive influence on effective monitoring. Core et al. (1999) contend that three additional directorships is an important threshold – directors that overextend themselves by sitting on three or more boards are too busy and overcommitted. This supports the governance guidelines of the NACD (1996). The NACD (1996) suggests that directors with full-time jobs should not serve on three or more other boards (six or more other boards if the director is retired). These arguments suggest there is a need to limit the number of additional directorships to about three. Because of the competing arguments, a null association is predicted between multiple directorships held by directors on the audit committee and earnings management.

H4: There is no association between multiple directorships and aggressive earnings management.

3.0 RESEARCH DESIGN

3.1 Sample Selection

This study is a cross-sectional analysis of firms listed on the New Zealand Stock Exchange (NZX). The sample is selected from 393 firms listed on the NZX, both on the main board – New Zealand Stock Market (NZSX) and the second board – New Zealand Alternative Market (NZAX) for the years 2004 and 2005. Consistent with prior research, firms from the following industries are excluded from the sample. Firms in the investment (n=46), finance and insurance services (n=36), equity and trust (n=12), and mining (n=6) industries are not included because they have different income measurement rules and unique capital structures which result in fundamentally different accrual processes that are not captured by the modified-Jones model to estimate discretionary accruals (Klein, 2002; Wells, 2002). Firms in the utilities industry (energy n=18) are also excluded as they have different incentives and opportunities to manage earnings due to their unique operating conditions and government regulation (Short & Keasey, 1999; Peasnell et al., 2005). Foreign companies, predominantly Australian companies, cross-listed on the New Zealand Stock Exchange (n=86) are excluded because they are subject to different corporate governance regulation. Consistent with the prior literature (Dechow et al., 1995), industries with less than five companies per year (n=9) are excluded because of insufficient observations to estimate discretionary accruals. Firms without the required financial and corporate governance data (n=16) and those without an audit committee (n=14) are also eliminated from the sample. The final sample size is 150 firm-year observations, comprising 78 firms from 2005 and 72 firms from 2004. A summary of the sample selection process is provided in Table 1.

Table 1: Summary of Sample Selection

Observations for the years 2004 and 2005	393
Less: Investment	(46)
Less: Finance & Insurance Services	(36)
Less: Equity Trusts & Funds	(12)
Less: Mining	(6)
Less: Energy	(18)
Less: Overseas companies	(86)
Less: Industries with less than five companies per year	(9)
Less: Annual reports not available	(16)
Less: Companies without audit committees	(14)
Total sample size	150

Table 2 provides a breakdown of the sample by industry. The NZX industry descriptors are used to classify the firms into their respective industry groups. The greatest proportion of sample firms (n=34) come from the consumer industry, which accounts for 23% of the sample. This is followed by the agriculture, fishing, and forestry industry and the textile, apparels, and durables industry, which have 24 (16%) firms each. Twenty firms are from the property industry, and 18 from the ports and transport industry, representing 13% and 12% of the sample, respectively. The leisure and tourism industry makes up the least number of sample firms (n=5) for the study (3%), while the food industry has 10 firms (7%) and the media and communication industry comprises 15 firms (10%).

Table 2: Industry Distribution of Firms

Industry Code	Description of Industry	Number of Firms
1	Agriculture, Fishing and Forestry	24 (16%)
2	Consumer	34 (23%)
3	Food	10 (7%)
4	Textiles, Apparels and Durables	24 (16%)
5	Ports and Transport	18 (12%)
6	Leisure and Tourism	5 (3%)
7	Media and Communication	15 (10%)
8	Property	20 (13%)
	Total	**150 (100%)**

3.2 Data Collection

Financial and corporate governance information is hand-collected from company annual reports. The data collected were verified, on a test basis, by my supervisors. This study examines the research hypotheses for the period 2004 to 2005. This period provides the most recent data on governance practices in New Zealand and the corporate governance principles became effective for financial years 2004 and later. An attempt was made to obtain governance data disclosed since 2001, but the lack of governance disclosure prohibited studying a longer period. In many cases, either the annual report was not available, or if available, governance disclosure was poor to identify a reasonable sample.

3.3 Measurement of the Variables

3.3.1 Earnings Management

Various tests have been developed to measure and test earnings management. For example, Healy (1999) and Sweeney (1994) use the selection of accounting procedures and changes in accounting policies to detect earnings management. Specific accounting transactions are also used as a device for detecting earnings manipulation (McMullen & Raghunandan, 1996). Holland and Ramsay (2003) suggest the use of small earnings increases or small profits to detect whether firms manage earnings to meet earnings benchmarks. A widely accepted measure of earnings management is discretionary accruals (Kothari et al., 2005).

A number of models have been developed to calculate discretionary accruals. The most popular measures are the Jones and modified-Jones models (Dechow et al., 1995; Beneish & Press, 1998; Bartov et al., 2000). However, other researchers (Dechow et al., 1995; Guay et al., 1996) argue that both the Jones and the modified-Jones models are subject to severe misspecification. Kothari et al. (2005) find that in most circumstances, the performance adjusted modified-Jones model is better in terms of model specification and power. This study, therefore, adopts the performance adjusted modified-Jones model, which is derived as follows. Residual from the annual cross-sectional industry regression model is used as the performance adjusted discretionary accruals measure (Kothari et al., 2005).

$$TAC_{ijt}/A_{ijt-1} = \alpha_j \, (1/A_{ijt-1}) + \beta_{1j} \, [(\Delta REV_{ijt} - \Delta REC_{ijt})/A_{ijt-1}] + \beta_{2j} \, (PPE_{ijt}/A_{ijt-1}) + ROA_{t-1} + \varepsilon_{ijt-1} \tag{1}$$

where:

TAC_{ijt} = total accruals for firm i in industry j in the current year t;

A_{ijt-1} = total assets for firm i in industry j at the end of the previous year;

ΔREV_{ijt} = change in revenue for firm i in industry j between the current year and last year;

ΔREC_{ijt} = the change in receivables for firm i in industry j between the current year and last year;

PPE_{ijt} = gross property, plant and equipment for firm i in the current year; and

ROA_{t-1} = return on assets at the end of the previous year.

Total accruals can be calculated using either the cash flow approach or the balance sheet approach. Hribar and Collins (2002) show that the results from the balance sheet approach are likely to be biased due to measurement errors in accrual estimates. Therefore, the cash flow approach is adopted for the present study. Under the cash flow approach, total accruals are calculated as the difference between operating income (EARN) obtained from the Statement of Financial Performance and operating cash flows (CFO) from the Statement of Cash Flows, as shown in equation 2.

$$TAC_{ijt} = EARN_{ijt} - CFO_{ijt} \qquad (2)$$

The predicted values from equation (1) are non-discretionary accruals (NDAC) and the difference between actual total accruals (TAC) and NDAC is discretionary accruals (DAC).

$$DAC = TAC - NDAC \qquad (3)$$

As the research interest is on aggressive earnings management, observations are classified into aggressive earnings management (AEM) if the absolute value of discretionary accruals, $|DAC|$, is in the top or bottom 20% of the sample. The mean (median) of $|DAC|$ is 0.393 (0.000) with a standard deviation of 0.490. Firms classified into aggressive earnings management (AEM) are coded 1, and 0 otherwise. Prior research argues that for various reasons firms engage in both income-increasing

and income-decreasing earnings management behaviour (Nelson et al., 2002; Bedard et al., 2004). These earnings management behaviours can include large or very small manipulations of earnings. Small earnings manipulations are argued to just meet or beat earnings benchmarks and often are difficult to detect (Frankel et al., 2002; Nelson et al., 2002).

The following form of logistic regression is then used to examine the hypothesized association between earnings management and audit committee characteristics.

AEM = α + f {Audit Committee variables + Control variables}

A summary of all the variables is provided in Table 3. The following sections describe the measurements of the variables.

Table 3: Definition of Dependent and Independent Variables

Dependent Variable	Definition	
Aggressive Earnings Management (AEM)	Equals 1 if a firm's absolute value of performance adjusted modified-Jones model discretionary accruals is within the top or bottom 20% of the sample, and 0 otherwise.	

Control Variables	Definition	Prior Literature
LEV	Ratio of long term debt to total assets.	Dechow and Sloan (1995), Klein (2002)
MKT	Market to book ratio i.e. Market value of the firm divided by book value of total assets. Proxy for firm's investment opportunity set.	Klein (2002)
LOSS	Equals 1 if income before extraordinary items is negative for two consecutive years, and 0 otherwise.	Klein (2002)
ABSCH	Absolute change in earnings i.e. absolute value of the change in net income between the current and prior year deflated by lagged total assets.	Klein (2002)
SIZE	Natural logarithm of the current year's total assets of the firm.	Dechow and Sloan (1995), Bartov et al. (2000), Klein (2002)
BIG4	Equals 1 if the firm is audited by a Big 4 (KPMG, Deloitte, Ernst & Young or PWC), and 0 otherwise.	Becker et al. (1998), Peasnell et al. (2005)
BLOCK5	Cumulative percentage of shares held by shareholders holding at least 5% ordinary shares in the firm.	Bamber and Cheon (1998), Yeo et al. (2002)
BDSIZE	Number of directors serving on the board.	Beasley (1996), Xie et al. (2003)
BDNE%	Proportion of non-executive directors on the board.	Klein (2002)
BDNE51%	Equals 1 if the board comprises majority non-executive directors, and 0 otherwise.	Klein (2002)
BDNE100%	Equals 1 if the board comprises 100% non-executive directors, and 0 otherwise.	Klein (2002)
BDIND%	Proportion of independent directors on the board.	Klein (2002)

BDIND51%	Equals 1 if the board comprises majority independent directors, and 0 otherwise.	Klein (2002)
BDIND100%	Equals 1 if the board comprises 100% independent directors, and 0 otherwise.	Klein (2002)
DUAL	Equals 1 if the company's CEO and chairman is the same person, and 0 otherwise.	Beasley (1996)

Audit Committee Variables	Definition	Prior Literature
Audit Committee Size		
ACSIZE	Number of directors on the audit committee.	Beasley (1996)
ACMEET	Number of audit committee meetings per annum.	Xie et al. (2003), Abbott et al. (2004)
Audit Committee Indepedence		
ACNE%	Proportion of non-executive directors on the audit committee.	Klein (2002)
ACNE51%	Equals 1 if the audit committee comprises majority non-executive directors, and 0 otherwise.	Klein (2002)
ACNE100%	Equals 1 if the audit committee comprises solely of non-executive directors, and 0 otherwise.	Klein (2002)
ACIND%	Proportion of independent directors on the audit committee.	Klein (2002)
ACIND51%	Equals 1 if the audit committee comprises majority independent directors, and 0 otherwise.	Klein (2002)
ACIND100%	Equals 1 if the audit committee comprises solely of independent directors, and 0 otherwise.	Klein (2002)
ACCHAIR_IND	Equals 1 if the audit committee chair is an independent director, and 0 otherwise.	This study
Audit Committee Expertise		
EXPTDIR%	Percentage of directors on the audit committee with financial or accounting expertise.	This study
EXPTNE%	Percentage of non-executive directors on the audit committee with financial or accounting expertise.	This study

EXPTIND%	Percentage of independent directors on the audit committee with financial or accounting expertise.	This study
OneExpertDIR	Equals 1 if at least one director has accounting and / or financial expertise, and 0 otherwise.	Bedard et al. (2004)
OneExpertNE	Equals 1 if at least one non-executive director has accounting and / or financial expertise, and 0 otherwise.	This study
OneExpertIND	Equals 1 if at least one independent director has accounting and / or financial expertise, and 0 otherwise.	This study

Audit Committee Member Shareholding

ACSHDIR%	Cummulative percentage of shares owned by directors on the audit committee.	Mangena and Pike, (2005)
ACSHNE%	Cummulative percentage of shares owned by non-executive directors on the audit committee.	This study
ACSHIND%	Cummulative percentage of shares owned by independent directors on the audit committee.	This study

Audit Committee Multiple Directorships

ACMDDIR%	Percentage of directors holding multiple directorships - percentage of directors serving on three or more other boards (six or more for retired directors) on the audit committee.	Ferris et al. (2003), Sharma and Iselin (2006)
ACMDNE%	Percentage of non-executive directors holding multiple directorships - percentage of non-executive directors serving on three or more other boards (six or more for retired directors) on the audit committee.	Sharma and Iselin (2006)
ACMDIND%	Percentage of independent directors holding multiple directorships - percentage of independent directors serving on three or more other boards (six or more for retired directors) on the audit committee.	Sharma and Iselin (2006)

Table 3: Definition of Dependent and Independent Variables (continued)

ACMDDIR_Max	Maximum number of other board seats held by any director on the audit committee.	Ferris et al. (2003)
ACMDNE_Max	Maximum number of other board seats held by any non-executive director on the audit committee.	This study
ACMDIND_Max	Maximum number of other board seats held by any independent director on the audit committee.	This study

3.3.2 Measures of Audit Committee Characteristics

3.3.2.1 Audit Committee Independence

Various definitions are used to define audit committee independence and the models vary depending on these definitions. This study differentiates between independent directors (ACIND) and non-executive directors (ACNONEX). Consistent with the regulation (e.g., Sarbanes-Oxley Act, 2002) and prior research (e.g., Vicknair et al., 1993; Beasley, 1996; Klein, 2002), independent directors are outside directors who do not have any affiliation (such as employment, business or family relationship) with the firm except in his or her capacity as a director on the board. Non-executive directors are directors who are not current employees of the firm and include both independent and affiliated directors. Affiliated directors, also known as grey directors, constitute relatives of management, consultants or suppliers to the firm, retired executives or investment bankers of the firm (Beasley, 1996). In other words, they can be anyone who has a direct or indirect interest or relationship with the firm which is so significant that it could reasonably influence his or her objective judgement or decision-making.[5] The 'Corporate Governance in New Zealand Principles and Guidance' deem directors who hold 5% or more relevant interest or voting securities of an entity as non-independent directors (NZSC, 2004). Such directors are classified as not independent for the purposes of this study. Thus, the definition for non-executive directors is much wider and distinct from that for independent directors.

For both independent directors and non-executive directors, there are three measures. ACIND% is a continuous variable that is defined as the proportion of independent directors on the audit committee. ACIND51% is a dummy variable which

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[5] The identification of these affiliated associations in this study is dependent upon disclosures made in the annual report.

takes the value of 1 if the audit committee comprises majority independent directors, and 0 otherwise. ACIND100% is a dummy variable that takes the value of 1 if the audit committee comprises solely of independent directors, and 0 otherwise. A similar approach is taken for the definitions of ACNE%, ACNE51% and ACNE100% except that these relate to non-executive directors.

3.3.2.2 Audit Committee Expertise

Two measures are employed for audit committee expertise, percentage and dummy measures. The percentage of audit committee expertise (EXPT) is measured according to the type of directors on the audit committee. EXPTDIR%, EXPTNE%, and EXPTIND% are the percentage of directors, non-executive directors, and independent directors with financial or accounting expertise, respectively. OneExpertDIR, OneExpertNE and OneExpertIND are dummy variables coded 1 if the audit committee has at least one director, one non-executive director and one independent director with accounting and / or financial expertise, respectively. The NZX (2004) listing rules provide guidelines on the qualification a member of the audit committee needs to possess in order to be deemed an accounting or financial expert. These include relevant professional qualifications (such as being a member of the Institute of Chartered Accountants of New Zealand or having successfully completed a course approved by NZX for Audit Committee membership), or experience in the area of finance or accounting (like having held a Chief Financial Officer position at an Issuer for more than 20 months). This definition is consistent with that used in the previous literature (Abbott et al., 2004). Disclosures about the directors background in the annual report is the source for identifying a director's financial expertise. Directors not meeting the above criteria are classified as non-experts. This measure is limited to the extent the annual report does not provide adequate information about the directors. For

example, a director may actually be a financial expert but because the firm's annual report (or website) does not provide such disclosure, this director is classified as a non-expert. This is a common limitation of prior research on audit committee expertise.

3.3.2.3 Audit Committee Member Shareholding

Audit committee member shareholding (ACSH) is also measured in three ways. ACSHDIR%, ACSHNE% and ACSHIND% are the percentage of ordinary shares owned by directors, non-executive directors and independent directors on the audit committee, respectively. Shareholding data is obtained from annual report disclosures and relates to ordinary shares held by a director.

3.3.2.4 Audit Committee Multiple Directorships

Two proxies are used to measure multiple directorships of the audit committee. The first proxy is the percentage of directors (ACMDDIR%), non-executive directors (ACMDNE%), and independent directors (ACMDIND%) holding multiple directorships on the audit committee. Since the prior literature (e.g., Sharma & Iselin, 2006) and policy-makers (e.g., NACD, 1996) suggest three other board seats as the optimal cut-off for fulltime directors (six other board seats for retired directors) to effectively perform their responsibilities, these thresholds are used for determining the reputation or overboardedness of the directors on the audit committee. In other words, directors on the audit committee are regarded as directors holding multiple directorships if they hold three additional board seats (six if retired).

Second, following Ferris et al. (2003), the log value of the maximum number of additional directorships held by any director (ACMDDIR_Max), non-executive director (ACMDNE_Max), and independent director (ACMDIND_Max) on the audit committee are used. Ferris et al. (2003) imply that even if a single director is overboarded, the

effectiveness of the audit committee can be undermined. This argument is somewhat similar, though conversely, to the expertise requirement where the presence of one financial expert on the audit committee is believed to enhance the effectiveness of the audit committee.

3.3.3 Control Variables

To improve the robustness of the tests, certain confounding variables, which might affect earnings management and / or audit committee variables, are controlled for. These control factors include characteristics of the board, audit committee, external monitoring mechanisms, and firm performance or characteristics.

First, the function of the board of directors may impact earnings management (Beasley, 1996). The monitoring function of the board of directors is affected by its independence, size and duality. The board of directors is more effective in monitoring management as its independence increases (Beasley, 1996). Board independence is measured as the percentage of non-executive (BDNE%) and independent (BDIND%) directors on the board. Duality is denoted 1 when the company's CEO and chairman is the same person, and 0 otherwise (DUAL). Board size (BDSIZE) can also influence financial reporting oversight. While Beasley (1996) suggests that larger boards are more effective monitors of management because decisions can be drawn from a wider range of experience, knowledge and skills, Xie et al. (2003) claim that larger boards require more time for decisions to be made and are more likely to lead to conflicts. Thus, the confounding effect of this variable on the monitoring oversight of the financial reporting process needs to be considered. BDSIZE is measured as the number of directors serving on the board.

Second, other audit committee characteristics may also influence the monitoring of earnings management and therefore need to be controlled for. The effectiveness of the audit committee is affected by its size and meeting frequency. Prior research (Davidson et al., 2005) shows that the size of the audit committee is associated with earnings management because audit committees need to be of a sufficient size in order to discharge their duties. Audit committee size (ACSIZE) is measured as the number of directors on the audit committee. Previous research (Xie et al., 2003; Abbott et al., 2004) also shows that audit committees that meet more frequently are more effective in preventing earnings management because they have more opportunities to engage in discussion with management and the internal and external auditors to address financial reporting issues. Meeting frequency (ACMEET) is the number of audit committee meetings per annum.

Third, external monitoring mechanisms are also controlled to enhance the power of the test. Prior literature suggests that the choice of a particular kind of external audit firm could increase the scrutiny over financial reporting and reduce the degree of earnings management. Krishnan (2003) suggests that a Big 4 audit firm provides better quality control over the financial reporting process. BIG4 is coded 1 if a Big 4 auditor is used, and 0 otherwise. As monitoring could be affected by block shareholders (Peasnell et al., 2005), this study includes the cumulative percentage of shares held by shareholders holding at least 5% ownership in the firm (BLOCK5).

Fourth, certain firm performance and characteristics can influence earnings management and / or audit committee characteristics. Previous research (Dechow et al., 1995; Klein, 2002) normally includes the leverage ratio (LEV) as a controlling factor on the assumption that earnings management is used to avoid breaching debt covenants.

According to their view, this factor is expected to be positively associated with earnings management. Next, the market to book ratio (MKT), a proxy for growth opportunities, calculated as market capitalization divided by the book value of total assets, is also shown to significantly affect the independence of the audit committee (Klein, 2002). The absolute change in earnings (ABSCH) is positively associated with earnings management and is calculated as the absolute value of the difference between the current and prior years' operating income divided by total assets (Klein, 2002). The next variable is firm size (SIZE), measured as the natural logarithm of the total assets of the firm. This factor is predicted to be negatively associated with earnings management because larger firms are likely to have more effective internal control systems (Dechow et al., 1995; Bartov et al., 2000; Klein, 2002). Finally, Klein (2002) reports that negative income (LOSS) is related to audit committee independence and Beasley (1996) shows it is related to financial misreporting. Therefore, LOSS is included as a control variable and is coded 1 if income before extraordinary items of the firm is negative for two consecutive years, and 0 otherwise.

4.0 RESULTS

4.1 Descriptive Data

Table 4 provides the descriptives statistics, including the mean, median, standard deviation, minimum and maximum values, for the control variables and audit committee variables. The data in Table 4 is provided for the pooled sample and for 2004 and 2005. A paired t-test was performed for each variable in Table 4 for observations for a firm occuring in both years. The test indicated no variable was significantly ($p > 0.10$) different between 2004 and 2005. This suggests there are no singificant changes in the variables between 2004 and 2005 and that pooling of the data is reasonable.

4.1.1 Control Variables

Table 4 shows that the average firm has a leverage ratio (LEV) of 0.226 (median 0.201), market to book ratio (MKT) of 6.251 (median 0.879), and absolute change in earnings (ABSCH) of 0.097 (median 0.030). It is noteworthy that there is considerable variation in MKT with a range between 0.020 and 342.683 and is typical of the New Zealand stock market due to the presence of very large and small companies, and thin trading. The mean (median) value for the natural logarithm of the current year's total assets of the firm (SIZE) is 11.526 (11.568) and the range is from 5.461 to 15.830, and together with a standard deviation of 1.729 suggests considerable variation in firm size. Moreover, only 10% of firms have negative income before extraordianry items (LOSS). Most firms (around 83.3%) are audited by Big 4 auditors. The mean (median) cumulative percentage of shares held by blockholders holding at least 5% ordinary shares in the firm (BLOCK5) is 49.6% (53.2%). The minimum is 0 and the maximum is 94.3%. This suggests the stockholding in New Zealand firms are concentrated and is consistent with La Porta et al. (1999). The average board size (BDSIZE) is 6.200 (median 6.000) and ranges from 3 to 13. On average, the proportion of non-executive directors and independent directors on the board is 80.8% (median 81.7%) and 50.7% (median 50%), respectively. Duality is excluded from the analyses because there is no incidence of any company in the sample where the CEO chairs the board. This is an interesting finding and may explain why board independence is higher than the U.S. where CEOs also chair the board. This is an issue worthy of further research.

The average (median) audit committee size (ACSIZE) is 3.227 (3.000), ranging from 2 members to 7 members. Over 85% of the firms comply with the NZX (2004) listing rules regarding the requirement of having a minumum of three members (ACSize_min3_dirs) on the audit committee. Only 92 firms provided data on the

number of audit committee meetings (ACMEET) and therefore this variable is not included in further analysis. For descriptive purposes, the mean (median) number of meetings per annum for these 92 firms is 3.474 (3.000), and 43.8% of audit committees met at least four times per annum.

4.1.2 Audit Committee Variables

4.1.2.1 Audit Committee Independence

With regard to audit committee independence, Table 4 reports that the average percentage of non-executive directors on the audit committee (ACNE%) is 95.7% (median 100%) and the average percentage of independent directors on the audit commitee (ACIND%) is 70.8% (median 66.7%). All firms have majority non-executive directors on the audit committee (ACNE51%). However, 73.3% of the firms have majority independent directors (ACIND51%) on the audit committee, suggesting 26.7% do not meet this governance recommendation. Eighty-six percent of the audit committees comprise 100% non-executive directors (ACNE100%), but only 38.7% comprise 100% independent directors (ACIND100%). These data suggest 14% do not meet the governance recommendation regarding 100% non-executive directors on the audit committee. Regarding the audit committee chair, all firms have an audit committee chair being a non-executive director (ACCHAIR_NE, not reported in Table 4), while 80.3% of the firms have an audit committee chair that is an independent director (ACCHAIR_IND). Thus, about 20% of the audit committees do not meet this governance recommendation.

4.1.2.2 Audit Committee Expertise

The expertise of the audit committee is measured two ways; percentage experts and presence of experts is a dummy variable. Table 4 shows that, on average, 34.5%

(median 33.3%) of directors (EXPTDIR%), 33.1% (median 33.3%) of non-executive

directors (EXPTNE%), and 26.3% (median 33.3%) of independent directors

(EXPTIND%) on the audit committee possess accounting and financial expertise,

respectively.   The dummy variables indicate that 61.3%, 58.7% and 46.7% of the audit

committees have at least one expert (OneExpert), non-executive expert (OneExpertNE)

and independent expert (OneExpertIND), respectively. The data on at least one expert

regardless of whether this director is non-executive or independent, suggests 61.3% of

audit commitees meet the governance recommendation and 38.7% do not.

4.1.2.3 Audit Committee Member Shareholding

The data in Table 4 indicate the average percentage of shares owned by directors

(ACSHDIR%), non-executive direcotrs (ACSHNE%) and independent directors

(ACSHIND%) on the audit committee are 5.958% (median 0.353%), 4.847% (median

0.340%) and 0.524% (median 0.070%), respectively. An interesting observation is the

percentage of shares held by directors that are not independent.   The maximum

shareholding is just over 80% for all directors and non-executive directors.   Such

shareholding is not unexpected as many New Zealand companies are closely held by

founders and family members also sitting on the board. Such evidence is consistent

with La Porta et al. (1999).

4.1.2.4 Audit Committee Multiple Directorships

As shown in Table 4, the average proportion of audit committee members

holding multiple directorships is 42.8% (median 33.3%) for all directors

(ACMDDIR%), 42.5% (median 33.3%) for non-executive directors (ACMDNE%) and

31.5% (median 33.3%) for independent directors (ACMDIND%). The log transformed

mean (median) for maximum number of other board seats held by directors

(ACMDDIR_Max), non-executive directors (ACMDNE_Max) and independent directors (ACMDIND_Max) are 1.786 (1.946), 1.760 (1.946) and 1.456 (1.792), respectively, and ranges from 0 to 3.434. The non-tabulated untransformed mean (median) values are 6.644 (6.000), 6.322 (6.000), and 4.893 (5.000) for all directors, non-executive directors and independent directors, respectively, and ranges from 1 to 31 number of other board seats. These statistics indicate that a considerable number of directors serve on more than 3 other boards (six if retired) and some directors sit on too many boards.

Table 4: Descriptive Data

Table 4 reports descriptive statistics for the pooled sample and for 2005 and 2004. All the variables are defined in Table 3.

Variable	Pooled Sample (n=150)					2005 (n=78)					2004 (n=72)				
	Mean	Med	SD	Min	Max	Mean	Med	SD	Min	Max	Mean	Med	SD	Min	Max
Control Variables															
LEV	0.226	0.201	0.337	0.000	3.547	0.253	0.207	0.431	0.000	3.547	0.197	0.194	0.186	0.000	0.975
MKT	6.251	0.879	37.686	0.020	342.683	5.808	0.827	34.241	0.020	5.808	6.753	0.896	41.497	0.144	342.683
LOSS	0.100	0.000	0.301	0.000	1.000	0.090	0.000	0.288	0.000	1.000	0.111	0.000	0.316	0.000	1.000
ABSCH	0.097	0.030	0.192	0.000	1.437	0.079	0.030	0.158	0.000	1.000	0.117	0.037	0.224	0.000	1.437
SIZE	11.526	11.568	1.729	5.461	15.830	11.577	11.626	1.733	5.461	15.820	11.471	11.497	1.734	6.574	15.830
BIG4	0.833	1.000	0.374	0.000	1.000	0.833	1.000	0.375	0.000	1.000	0.833	1.000	0.375	0.000	1.000
BLOCK5	0.496	0.532	0.234	0.000	0.943	0.499	0.528	0.231	0.000	0.943	0.493	0.542	0.239	0.000	0.926
BDSIZE	6.200	6.000	1.757	3.000	13.000	6.192	6.000	1.736	3.000	13.000	6.208	6.000	1.792	3.000	13.000
BDNE%	0.808	0.817	0.158	0.400	1.000	0.812	0.833	0.156	0.500	1.000	0.803	0.800	0.161	0.400	1.000
BDIND%	0.507	0.500	0.225	0.000	1.000	0.503	0.500	0.212	0.000	1.000	0.512	0.500	0.239	0.000	1.000
Audit Committee Variables															
Size															
ACSIZE	3.227	3.000	0.891	2.000	7.000	3.218	3.000	0.816	2.000	7.000	3.236	3.000	0.971	2.000	6.000
ACSize_min3_dirs	0.853	1.000	0.355	0.000	1.000	0.885	1.000	0.322	0.000	1.000	0.819	1.000	0.387	0.000	1.000
Independence															
ACNE%	0.957	1.000	0.109	0.600	1.000	0.961	1.000	0.103	0.667	1.000	0.952	1.000	0.117	0.600	1.000
ACNE51%	1.000	1.000	0.000	1.000	1.000	1.000	1.000	0.000	1.000	1.000	1.000	1.000	0.000	1.000	1.000
ACNE100%	0.860	1.000	0.348	0.000	1.000	0.872	1.000	0.336	0.000	1.000	0.847	1.000	0.362	0.000	1.000
ACIND%	0.708	0.667	0.282	0.000	1.000	0.706	0.667	0.265	0.000	1.000	0.711	0.667	0.301	0.000	1.000
ACIND51%	0.733	1.000	0.444	0.000	1.000	0.756	1.000	0.432	0.000	1.000	0.708	1.000	0.458	0.000	1.000
ACIND100%	0.387	0.000	0.489	0.000	1.000	0.346	0.000	0.479	0.000	1.000	0.431	0.000	0.499	0.000	1.000
ACCHAIR_IND	0.803	1.000	0.399	0.000	1.000	0.795	1.000	0.407	0.000	1.000	0.812	1.000	0.394	0.000	1.000

Table 4: Descriptive Data (continued)

Variable	Pooled Sample (n=150)					2005 (n=78)					2004 (n=72)				
	Mean	Med	SD	Min	Max	Mean	Med	SD	Min	Max	Mean	Med	SD	Min	Max
Expertise															
EXPTDIR%	0.345	0.333	0.282	0.000	1.000	0.325	0.333	0.271	0.000	1.000	0.368	0.333	0.294	0.000	1.000
EXPTNE%	0.331	0.333	0.283	0.000	1.000	0.316	0.333	0.270	0.000	1.000	0.348	0.333	0.298	0.000	1.000
EXPTIND%	0.263	0.333	0.280	0.000	1.000	0.250	0.250	0.269	0.000	1.000	0.278	0.333	0.294	0.000	1.000
OneExpert	0.613	1.000	0.489	0.000	1.000	0.615	1.000	0.490	0.000	1.000	0.611	1.000	0.491	0.000	1.000
OneExpertNE	0.587	1.000	0.494	0.000	1.000	0.603	1.000	0.493	0.000	1.000	0.569	1.000	0.499	0.000	1.000
OneExpertIND	0.467	0.000	0.501	0.000	1.000	0.474	0.000	0.503	0.000	1.000	0.458	0.000	0.502	0.000	1.000
Shareholding															
ACSHDIR%	5.958	0.353	12.143	0.000	80.990	6.547	0.424	13.364	0.000	80.990	5.311	0.340	10.701	0.000	51.310
ACSHNE%	4.847	0.340	10.723	0.000	80.990	5.431	0.345	12.251	0.000	80.990	4.206	0.270	8.788	0.000	51.310
ACSHIND%	0.524	0.070	1.535	0.000	9.620	0.363	0.071	1.082	0.000	8.830	0.701	0.070	1.906	0.000	9.620
Multiple directorships															
ACMDDIR%	0.428	0.333	0.366	0.000	1.500	0.442	0.367	0.346	0.000	1.000	0.452	0.333	0.405	0.000	1.500
ACMDNE%	0.425	0.333	0.353	0.000	1.000	0.427	0.333	0.339	0.000	1.000	0.424	0.333	0.370	0.000	1.000
ACMDIND%	0.315	0.333	0.321	0.000	1.000	0.312	0.333	0.311	0.000	1.000	0.318	0.333	0.334	0.000	1.000
ACMDDIR_Max	1.786	1.946	0.759	0.000	3.434	1.830	1.946	0.746	0.000	3.434	1.738	1.946	0.776	0.000	3.219
ACMDNE_Max	1.760	1.946	0.737	0.000	3.434	1.798	1.946	0.719	0.000	3.434	1.718	1.946	0.758	0.000	3.219
ACMDIND_Max	1.456	1.792	0.873	0.000	3.434	1.532	1.792	0.833	0.000	3.434	1.374	1.792	0.914	0.000	2.833

4.1.3 Correlation Analysis

Table 5 reports the correlations between the independent variables. There are several significant correlations between the variables. Most of the significant correlations are between the corporate governance variables such as board and audit committee characteristics. These correlations are not unexpected as the literature documents similar correlations (e.g., Beasley, 1996) and Cohen et al. (2004) argue the roles of the board and audit committee are interdependent and they considerably interact in their oversight of the financial reporting process. For these reasons and consistent with Klein (2002), the board variables are not included with the audit committee variables in the multivariate analysises. The inclusion of the board variables is reported in the sensitivity tests. There are significant correlations between variables measuring the same theoretical construct (variables measuring audit committee independence, expertise, shareholding and multiple directorships), and between audit committee chair independence (ACCHAIR_IND) and majority of audit committee members being independent directors (ACIND51%). These variables are not included together in the empirical models to avoid problems due to multicolinearity. This approach is consistent with Klein (2002). However, the results are tested for robustness when the most significant audit committee variables are included in a single logit model.

Similarly, certain variables were excluded from the multivariate analysis. Audit committee size (ACSIZE) was not included in the multivariate analysis as a control variable because it is highly correlated with other audit committee factors such as various audit committee independence measures. Sensitivity test on the inclusion of audit committee size is reported later.

Table 5: Correlation Matrix for Independent Variables (n=150)

Table 5 reports the Pearson (Tau) correlations above (below) the diagonal amongst the explanatory variables. Correlations significant at $p < 0.05$ are in bold. The variables are defined in Table 3.

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
LEV (1)	1.000	**-0.129**	-0.066	**-0.119**	**0.260**	-0.009	-0.600	0.048	**0.118**	**0.117**	0.046	0.087	0.057	0.059	0.077	0.078
MKT (2)	0.017	1.000	0.112	**0.222**	**-0.237**	**0.163**	0.050	-0.077	**-0.122**	-0.002	0.040	-0.074	0.062	0.054	0.025	-0.012
LOSS (3)	-0.055	**0.395**	1.000	**0.302**	**-0.220**	-0.089	0.085	**-0.186**	-0.017	-0.088	0.010	0.138	0.002	0.006	-0.028	0.000
ABSCH (4)	**0.173**	0.060	**0.369**	1.000	**-0.252**	-0.047	0.026	**-0.254**	-0.099	**-0.122**	**-0.139**	**-0.144**	-0.021	-0.023	-0.079	-0.132
SIZE (5)	0.147	-0.013	**-0.288**	**-0.353**	1.000	**0.228**	**0.109**	**0.362**	**0.126**	0.047	**0.192**	**0.260**	0.083	0.087	0.103	**0.162**
Big4 (6)	0.044	0.067	-0.089	-0.018	**0.301**	1.000	**0.155**	**0.203**	0.069	0.094	0.108	0.017	**0.188**	**0.180**	0.132	**0.216**
BLOCK5 (7)	0.018	0.142	0.111	0.126	**0.170**	**0.191**	1.000	-0.040	-0.053	-0.108	-0.070	-0.079	0.034	0.038	0.008	0.025
BDSIZE (8)	-0.032	-0.085	**-0.190**	**-0.248**	**0.491**	**0.255**	-0.013	1.000	0.068	0.019	**0.426**	**0.323**	0.122	0.120	0.120	**0.224**
BDNE% (9)	-0.009	0.149	-0.023	-0.110	0.154	0.065	-0.081	0.063	1.000	**0.406**	0.081	0.131	**0.216**	**0.212**	0.132	**0.212**
BDIND% (10)	0.090	-0.048	-0.075	-0.076	0.042	0.075	**-0.176**	-0.014	**0.508**	1.000	0.028	0.095	**0.184**	**0.180**	**0.516**	**0.408**
ACSIZE (11)	-0.073	0.015	-0.010	**-0.201**	**0.184**	0.134	-0.097	**0.485**	0.045	-0.026	1.000	**0.656**	**-0.232**	**-0.249**	**-0.164**	-0.061
ACSize_min3_dirs (12)	-0.094	0.024	0.138	**-0.237**	**0.311**	0.017	-0.118	**0.327**	**0.163**	0.120	**0.573**	1.000	**-0.163**	**-0.167**	-0.138	**0.048**
ACNE% (13)	0.043	0.056	-0.004	0.048	0.116	**0.205**	0.027	0.153	**0.228**	**0.236**	**-0.280**	**-0.164**	1.000	**0.976**	**0.346**	**0.315**
ACNE100% (14)	0.037	0.056	0.006	0.050	0.119	**0.180**	0.034	0.145	**0.226**	**0.222**	**-0.308**	**-0.167**	**0.983**	1.000	**0.344**	**0.322**
ACIND% (15)	0.115	**-0.182**	-0.036	0.064	0.115	0.157	-0.006	0.156	0.129	**0.652**	**-0.184**	-0.128	**0.403**	**0.389**	1.000	**0.716**

Table 5: Correlation Matrix for Independent Variables (Continued)

Variable	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
ACIND51% (16)	0.096	**-0.182**	0.000	0.007	**0.192**	**0.216**	0.021	**0.267**	**0.222**	**0.474**	-0.118	0.048	**0.321**	**0.322**	**0.802**	1.000
ACIND100% (17)	0.133	-0.074	-0.037	0.125	0.097	0.061	0.029	0.011	0.016	**0.559**	**-0.264**	**-0.251**	**0.315**	**0.320**	**0.824**	**0.479**
ACCHAIR_IND (18)	0.094	**-0.228**	-0.027	0.018	0.061	**0.179**	-0.130	**0.186**	0.155	**0.388**	-0.023	-0.048	**0.174**	0.144	**0.598**	**0.538**
EXPTDIR% (19)	0.132	-0.044	-0.054	-0.029	**0.255**	0.051	0.016	0.043	0.095	**0.194**	-0.059	-0.015	0.058	0.046	**0.177**	0.082
EXPTNE% (20)	0.115	-0.117	-0.083	-0.025	**0.257**	0.085	0.004	0.070	0.096	**0.234**	-0.062	-0.034	0.119	0.113	**0.242**	0.118
EXPTIND% (21)	0.120	-0.137	-0.098	-0.048	**0.198**	0.171	0.013	0.052	**0.185**	**0.436**	-0.079	-0.029	**0.197**	**0.190**	**0.419**	**0.261**
OneExpert (22)	0.054	0.066	-0.146	**-0.261**	**0.365**	0.122	-0.148	**0.286**	0.137	0.096	**0.203**	**0.213**	-0.014	-0.044	-0.014	0.017
OneExpertNE (23)	0.058	-0.055	**-0.171**	**-0.242**	**0.349**	0.097	**-0.183**	**0.266**	0.102	0.092	**0.169**	**0.188**	0.021	0.012	0.010	0.014
OneExpertIND (24)	0.048	-0.129	**-0.178**	**-0.192**	**0.206**	0.167	**-0.208**	0.160	**0.204**	**0.311**	0.122	0.123	0.089	0.069	**0.232**	0.171
ACSHDIR% (25)	-0.092	-0.059	0.086	-0.023	**-0.223**	-0.118	0.097	-0.078	-0.153	**-0.264**	0.017	0.136	**-0.203**	**-0.184**	**-0.279**	**-0.166**
ACSHNE% (26)	-0.091	-0.051	0.030	-0.055	-0.153	0.085	0.092	0.042	-0.072	**-0.167**	0.093	0.110	0.044	0.048	-0.153	-0.048
ACSHIND% (27)	0.015	-0.039	0.026	-0.027	-0.045	0.069	-0.115	-0.008	**0.173**	**0.389**	-0.035	0.057	0.090	0.083	**0.244**	0.152
ACMDDIR_Max (28)	0.106	0.009	**-0.232**	**-0.241**	**0.410**	0.184	-0.031	**0.231**	0.082	0.119	**0.245**	**0.216**	**-0.188**	**-0.195**	-0.070	0.015
ACMDNE_Max (29)	0.090	0.015	**-0.227**	**-0.240**	**0.415**	0.218	-0.026	**0.256**	0.103	0.128	**0.246**	**0.208**	-0.124	-0.134	-0.033	0.032
ACMDIND_Max (30)	0.121	-0.111	**-0.254**	**-0.178**	**0.344**	0.275	-0.113	**0.288**	**0.213**	**0.328**	0.160	0.107	0.098	0.054	**0.399**	**0.333**
ACMDDIR% (31)	**0.169**	0.092	-0.140	0.013	**0.217**	0.117	-0.060	0.024	**0.190**	-0.033	0.020	-0.008	-0.035	-0.044	0.047	0.001
ACMDNE% (32)	0.132	0.106	-0.128	-0.002	**0.242**	0.130	-0.032	0.053	**0.206**	-0.001	0.023	-0.008	0.044	0.035	0.083	0.036
ACMDIND% (33)	**0.195**	-0.077	**-0.205**	0.007	**0.323**	**0.175**	-0.064	0.147	**0.227**	**0.289**	0.030	0.025	**0.177**	0.157	**0.409**	**0.301**

Variable	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
LEV (1)	0.081	0.075	**0.150**	0.126	0.093	**0.195**	**0.188**	0.119	**-0.129**	**-0.127**	-0.054	0.096	0.086	0.069	0.078	0.056	0.055
MKT (2)	0.013	0.046	-0.035	-0.017	0.021	-0.060	-0.052	-0.001	-0.031	-0.010	0.028	0.090	0.101	**0.119**	0.106	0.102	0.064
LOSS (3)	-0.037	-0.027	-0.024	-0.056	-0.077	-0.146	**-0.171**	**-0.178**	0.163	0.146	0.023	**-0.150**	**-0.145**	**-0.208**	-0.123	-0.112	**-0.188**
ABSCH (4)	-0.054	-0.136	0.040	0.037	-0.018	-0.102	-0.085	-0.106	0.045	0.045	0.006	0.035	0.044	-0.077	0.012	0.002	-0.079
SIZE (5)	0.084	0.054	0.121	0.122	0.054	**0.270**	**0.255**	0.133	**-0.247**	**-0.233**	-0.098	**0.189**	**0.185**	0.180	0.144	0.156	0.223
Big4 (6)	0.061	**0.179**	0.043	0.071	**0.161**	0.122	0.097	**0.167**	**-0.157**	-0.085	0.074	**0.170**	**0.182**	**0.229**	0.095	0.098	**0.156**
BLOCK5 (7)	0.022	-0.086	-0.001	-0.009	-0.007	-0.116	**-0.149**	**-0.150**	-0.050	-0.040	0.001	-0.046	-0.042	-0.095	-0.052	-0.037	-0.075
BDSIZE (8)	0.052	0.140	0.081	0.108	0.129	**0.310**	**0.287**	**0.235**	-0.016	0.015	-0.001	**0.173**	**0.185**	**0.232**	0.083	0.098	**0.160**
BDNE% (9)	0.039	**0.151**	0.066	0.058	**0.145**	0.121	0.088	**0.182**	-0.024	0.015	0.028	0.050	0.059	**0.155**	**0.150**	**0.165**	**0.189**
BDIND% (10)	**0.480**	**0.322**	**0.152**	**0.177**	**0.333**	0.110	0.119	**0.291**	-0.108	-0.072	**0.222**	0.028	0.030	**0.203**	0.120	0.117	0.241
ACSIZE (11)	**-0.250**	-0.023	-0.091	-0.089	-0.047	**0.231**	**0.195**	0.132	0.111	0.111	0.016	**0.178**	**0.166**	**0.151**	0.073	0.059	0.065
ACSize_min3_dirs (12)	**-0.251**	-0.048	-0.013	-0.030	-0.035	**0.213**	**0.188**	0.123	0.131	0.112	0.032	**0.158**	**0.148**	0.098	0.024	0.018	0.040
ACNE% (13)	**0.313**	0.153	0.054	0.102	**0.167**	-0.031	0.016	0.077	-0.128	0.003	0.055	-0.055	0.019	0.135	**-0.172**	-0.128	0.055
ACNE100% (14)	**0.320**	0.144	0.052	0.106	**0.166**	-0.044	0.012	0.069	-0.131	-0.002	0.042	**-0.176**	-0.133	0.041	-0.062	0.014	0.124
ACIND% (15)	**0.789**	**0.478**	**0.153**	**0.183**	**0.326**	-0.001	0.012	**0.182**	**-0.162**	-0.118	**0.234**	0.072	0.091	**0.324**	0.004	0.010	**0.262**

Table 5: Correlation Matrix for Independent Variables (Continued)

Variable	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
ACIND51% (16)	**0.479**	**0.538**	0.060	0.905	**0.233**	0.017	0.014	**0.171**	-0.082	-0.048	**0.194**	0.007	0.008	**0.258**	0.014	0.035	**0.266**
ACIND100% (17)	1.000	**0.412**	**0.225**	**0.239**	**0.340**	-0.044	-0.029	0.135	**-0.235**	**-0.197**	**0.211**	-0.031	-0.020	**0.169**	0.061	0.079	**0.256**
ACCHAIR_IND (18)	**0.412**	1.000	0.040	0.088	**0.348**	0.049	0.056	**0.362**	**-0.168**	**-0.170**	0.116	-0.124	-0.110	**0.335**	-0.015	-0.010	**0.222**
EXPTDIR% (19)	**0.273**	0.075	1.000	**0.965**	**0.774**	**0.687**	**0.662**	**0.582**	-0.050	-0.032	0.043	**0.212**	**0.198**	**0.165**	**0.231**	**0.238**	**0.213**
EXPTNE% (20)	**0.291**	0.125	**0.978**	1.000	**0.812**	**0.672**	**0.714**	**0.644**	-0.078	-0.055	0.046	**0.182**	**0.179**	**0.196**	**0.195**	**0.211**	**0.230**
EXPTIND% (21)	**0.393**	**0.361**	**0.838**	**0.873**	1.000	**0.556**	**0.591**	**0.816**	-0.084	-0.057	0.126	0.113	0.114	**0.274**	**0.198**	**0.211**	**0.284**
OneExpert (22)	-0.044	0.049	**0.726**	**0.697**	**0.560**	1.000	**0.946**	**0.743**	-0.061	-0.048	-0.044	**0.307**	**0.296**	**0.239**	**0.249**	**0.239**	**0.176**
OneExpertNE (23)	-0.029	0.056	**0.695**	**0.741**	**0.596**	**0.946**	1.000	**0.785**	-0.075	-0.064	-0.080	**0.303**	**0.291**	**0.250**	**0.225**	**0.213**	**0.172**
OneExpertIND (24)	0.135	**0.362**	**0.616**	**0.678**	**0.822**	**0.743**	**0.785**	1.000	-0.100	-0.087	0.036	**0.237**	**0.233**	**0.370**	**0.257**	**0.250**	**0.284**
ACSHDIR% (25)	**-0.278**	**-0.214**	-0.024	-0.068	-0.129	-0.014	-0.001	-0.088	1.000	**0.930**	**0.384**	0.006	0.000	-0.094	0.018	0.017	-0.087
ACSHNE% (26)	**-0.232**	-0.148	-0.052	-0.054	-0.087	0.023	0.033	-0.020	**0.895**	1.000	**0.423**	-0.003	-0.005	-0.084	0.022	0.027	-0.064
ACSHIND% (27)	**0.277**	0.128	**0.223**	**0.200**	**0.266**	0.091	0.007	0.081	0.032	0.068	1.000	-0.060	-0.056	0.039	-0.016	-0.020	0.093
ACMDDIR_Max (28)	-0.093	**-0.197**	0.214	0.173	0.070	**0.355**	**0.344**	0.236	0.108	0.158	-0.128	1.000	**0.967**	**0.665**	**0.573**	**0.550**	**0.432**
ACMDNE_Max (29)	-0.074	-0.165	**0.190**	0.174	0.085	**0.346**	**0.334**	0.248	0.067	0.153	-0.123	**0.985**	1.000	**0.688**	**0.561**	**0.553**	**0.437**
ACMDIND_Max (30)	**0.197**	**0.440**	0.218	**0.267**	**0.331**	**0.273**	**0.283**	**0.419**	-0.128	-0.001	-0.020	**0.623**	**0.660**	1.000	**0.495**	**0.494**	**0.637**
ACMDDIR% (31)	0.073	-0.044	**0.301**	**0.256**	**0.236**	**0.265**	**0.242**	**0.279**	0.037	0.045	0.001	**0.676**	**0.659**	**0.550**	1.000	**0.948**	**0.714**
ACMDNE% (32)	0.096	-0.020	**0.309**	**0.278**	**0.264**	**0.264**	**0.238**	**0.288**	0.027	0.061	0.012	**0.656**	**0.660**	**0.570**	**0.968**	1.000	**0.750**
ACMDIND% (33)	**0.327**	**0.243**	**0.295**	**0.318**	**0.365**	**0.187**	**0.187**	**0.311**	-0.144	-0.072	0.089	**0.477**	**0.500**	**0.725**	**0.775**	**0.821**	1.000

4.2 Multivariate Analysis

4.2.1 Audit Committee Independence

Table 6 reports the results of the five logistic regression models for the independence of the audit committee, which differentiates between measures of independent and non-executive directors on the audit committee. The Nagelkerke pseudo R^2 for all five models are greater than 20%, indicating that the explanatory power of the models is reasonable. The models' χ^2 are significant ($p < 0.01$), and together these data suggest the models are a good fit. The variable ACNE51% is excluded from the analysis because it is constant for all the cases. The coefficients on the percentage of non-executive directors (ACNE%), 100% non-executive directors (ACNE100%), and the percentage of independent directors (ACIND%) on the audit committee are not significant. The results show a marginal significant ($p < 0.10$) and negative association between having majority independent directors on the audit committee (ACIND51%) and aggressive earnings management. There is no significant association between a 100% independent audit committee (ACIND100%) and aggressive earnings management. Generally, the results do not support hypothesis 1 as all except one of the audit committee independence measures are not significantly associated with aggressive earnings management. Hypothesis 1 appears to be supported marginally by the variable, majority independent directors on the audit committee (ACIND51%).

These results are similar to Klein (2002) who finds that while majority independent directors is negatively associated with aggressive earnings management, no significant negative association was found for audit committees comprising entirely of independent directors. Taken together, these results suggest that whether or not the audit committee members are non-executive directors have no effect on aggressive

earnings management, and that independent directors tend to be more effective than non-executive directors. However, it is not necessary for New Zealand firms to have an audit committee with all independent directors. This suggests that because of the small pool of qualified directors available in the New Zealand market, there may be a trade-off between independence and other attributes such as expertise, which together may enhance the effectiveness of the audit committee. This proposition is investigated and reported later in this section.

Table 6: Logistic Regression Analysis for Audit Committee Independence

Table 6 presents the results for the association between audit committee independence and the likelihood of aggressive earnings management (a dummy variable that is set to 1 if a firm's absolute value of performance adjusted modified-Jones model discretionary accruals is within the top or bottom 20% of the sample, and 0 otherwise) for 150 firms for both 2005 and 2004. The variables are defined in Table 3. The associated t-statistic is reported in the parenthesis and a, b, and c indicate t-statistic significance at the 0.01, 0.05 and 0.10 levels, respectively.

	Predicted Sign	Model 1	Model 2	Model 3	Model 4	Model 5
Intercept		5.373	5.558	5.738	5.565	5.709
		(6.089) [a]	(10.770) [a]	(11.418) [a]	(11.008) [a]	(11.395) [a]
ACNE%	-	0.334				
		(0.040)				
ACNE100%	-		0.218			
			(0.176)			
ACIND%	-			-0.275		
				(0.155)		
ACIND51%	-				-0.547	
					(1.618) [c]	
ACIND100%	-					0.138
						(0.113)
LEV	+	0.734	0.739	0.769	0.839	0.707
		(1.037)	(1.044)	(1.106)	(1.253)	(0.959)
MKT	-/+	-0.034	-0.035	-0.031	-0.026	-0.036
		(0.381)	(0.394)	(0.310)	(0.255)	(0.415)
LOSS	-/+	-0.043	-0.042	-0.034	0.124	-0.028
		(0.003)	(0.003)	(0.002)	(0.023)	(0.001)
ABSCH	+	0.396	0.380	0.380	0.280	0.398
		(0.064)	(0.059)	(0.058)	(0.031)	(0.065)
SIZE	-	-0.519	-0.523	-0.510	-0.485	-0.525
		(11.827) [a]	(11.953) [a]	(11.294) [a]	(10.139) [a]	(11.835) [a]
BIG4	-	-0.410	-0.420	-0.379	-0.319	-0.390
		(0.621)	(0.652)	(0.540)	(0.378)	(0.571)
BLOCK5	-	0.123	0.120	0.123	0.145	0.110
		(0.021)	(0.020)	(0.021)	(0.029)	(0.017)
Pseudo R^2		21.4%	21.5%	21.5%	22.7%	21.5%
χ^2		24.476 [a]	24.613 [a]	24.591 [a]	26.044 [a]	24.549 [a]

4.2.2 Audit Committee Expertise

Table 7 presents the results for the six logistic regression models for audit committee expertise. The Nagelkerke pseudo R^2 for all six models are greater than 22%, which indicate that the explanatory power of the models is reasonable. The models' χ^2 are significant ($p < 0.01$). These data suggest the models are a good fit. The first three models are related to the percentage measures of experts on the audit committee, and the remaining three models test the effect of at least one expert on the audit committee. Audit committee experts are further classified by differentiating between the types of directors, whether they are directors (EXPTDIR%), non-executive directors (EXPTNE%), or independent directors (EXPTIND%). The coefficients on all three percentage expert variables are negative and significant ($p < 0.01$). These results show that regardless of the type of audit committee directors, the presence of more experts on the audit committee reduces the likelihood of aggressive earnings management.

While the results for audit committees comprising at least one director with expertise (OneExpertDIR) is negative and marginally significant ($p < 0.10$), the results for audit committees with at least one non-executive expert director (OneExpertNE) is not significant. However, when an audit committee has at least one independent director with expertise (OneExpertIND), a negative and significant coefficient ($p < 0.05$) is observed. These results suggest that it is necessary to have at least one independent director with accounting and financial expertise on the audit committee. The audit committee experts who are independent directors are preferable because they seem to be more effective than non-executive directors in monitoring aggressive earnings management. These results are consistent with hypothesis 2, McMullen and Raghunandan (1996), and Bedard et al. (2004).

Table 7: Logistic Regression Analysis for Audit Committee Expertise

Table 7 reports the results for the association between audit committee expertise and aggressive earnings management (a dummy variable that is set to 1 if a firm's absolute value of performance adjusted modified-Jones model discretionary accruals is within the top or bottom 20% of the sample, and 0 otherwise) for 150 firms for both 2005 and 2004. The variables are defined in Table 3. The associated t-statistic is reported in the parenthesis and a, b, and c indicate t-statistic significance at the 0.01, 0.05 and 0.10 levels, respectively.

	Predicted Sign	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept		5.662 (8.342)[a]	5.972 (8.853)[a]	6.294 (9.585)[a]	5.727 (11.278)[a]	5.685 (11.245)[a]	6.026 (12.062)[a]
EXPTDIR%	-	-1.817 (4.505)[a]					
EXPTNE%	-		-1.953 (4.864)[a]				
EXPTIND%	-			-1.832 (3.899)[a]			
OneExpertDIR	-				-0.512 (1.583)[c]		
OneExpertNE	-					-0.334 (0.684)	
OneExpertIND							-0.594 (2.174)[b]
LEV	+	0.825 (0.564)	0.802 (0.530)	0.899 (0.664)	0.764 (1.081)	0.772 (1.064)	0.816 (1.130)
MKT	-/+	-0.109 (1.546)	-0.113 (1.646)[c]	-0.106 (1.485)	-0.037 (0.473)	-0.035 (0.425)	-0.041 (0.554)
LOSS	-/+	-0.259 (0.069)	-0.248 (0.062)	-0.196 (0.040)	-0.022 (0.001)	-0.024 (0.001)	-0.020 (0.001)
ABSCH	+	4.099 (1.615)[c]	4.081 (1.570)[c]	3.321 (1.081)	0.300 (0.038)	0.360 (0.054)	0.313 (0.040)
SIZE	-	-0.496 (7.872)[a]	-0.523 (8.376)[a]	-0.578 (9.966)[a]	-0.489 (10.160)[a]	-0.497 (10.524)[a]	-0.523 (11.652)[a]
BIG4	-	-0.043 (0.006)	0.075 (0.017)	0.236 (0.163)	-0.349 (0.460)	-0.372 (0.526)	-0.237 (0.205)
BLOCK5	-	-0.078 (0.006)	-0.199 (0.042)	-0.108 (0.012)	-0.142 (0.027)	-0.065 (0.006)	-0.213 (0.059)
Pseudo R^2		23.0%	24.3%	23.3%	22.7%	22.0%	23.2%
χ^2		22.143[a]	23.318[a]	22.256[a]	26.014[a]	25.117[a]	26.636[a]

4.2.3 Audit Committee Member Shareholding

Table 8 contains the multivariate results for audit committee shareholding using three models. The Nagelkerke pseudo R^2 for all three models are greater than 22%, indicating that the explanatory power of the models is reasonable. The models' χ^2 are significant ($p < 0.01$). These data together suggest the models are a good fit. All three models use the percentage measures, and they are differentiated according to the types of directors - directors, non-executive directors, and independent directors. The coefficients for the percentage of shares owned by directors (ACSHDIR%) and non-executive directors (ACSHNE%) on the audit committee are positive and significant ($p < 0.01$). These results suggest that as the percentage of shares held by audit committee directors and non-executive directors increases, the likelihood of aggressive earnings management increases. It suggests that directors and non-executive directors on the audit committee have incentives to manipulate earnings and engage in aggressive earnings management to maintain or increase the value of their shares.

The coefficient on the percentage of shares owned by independent directors on the audit committee (ACSHIND%) is negative, but not significant. It implies independent directors' shareholding is not related to earnings management. The overall results for audit committee member shareholding suggest that share ownership can affect the incentive of audit committee members to monitor aggressive earnings management. As the amount of their shareholding in the firm increases, directors on the audit committee are less effective in monitoring aggressive earnings management. In particular, for non-executive directors on the audit committee, they appear to encourage aggressive earnings management to protect their shares, which are related to firm performance. These findings are consistent with Mangena and Pike (2005), who observe a significant negative association between the shareholding of audit committee

members and the quality of financial disclosures. The results generally reject the hypothesis of no association between audit committee member shareholding and aggressive earnings management as two out of three measures of audit committee shareholding are positive and significantly associated with aggressive earnings management.

Table 8: Logistic Regression Analysis for Audit Committee Member Shareholding

Table 8 reports the results for the association between audit committee shareholding and aggressive earnings management (a dummy variable that is set to 1 if a firm's absolute value of performance adjusted modified-Jones model discretionary accruals is within the top or bottom 20% of the sample, and 0 otherwise) for 150 firms for both 2005 and 2004. The variables are defined in Table 3. The associated t-statistic is reported in the parenthesis and a, b, and c indicate t-statistic significance at the 0.01, 0.05 and 0.10 levels, respectively.

	Predicted Sign	Model 1 Coefficient	(t-value)	Model 2 Coefficient	(t-value)	Model 3 Coefficient	(t-value)
Intercept		4.545	(6.940)[a]	4.765	(7.814)[a]	5.942	(11.530)[a]
ACSHDIR%	-/+	0.043	(4.696)[a]				
ACSHNE%	-/+			0.041	(3.426)[a]		
ACSHIND%	-/+					-0.215	(1.623)
LEV	+	0.842	(1.268)	0.865	(1.281)	0.783	(1.127)
MKT	-/+	-0.022	(0.183)	-0.023	(0.203)	-0.036	(0.448)
LOSS	-/+	-0.138	(0.029)	-0.048	(0.004)	0.049	(0.004)
ABSCH	+	0.673	(0.187)	0.670	(0.187)	0.406	(0.067)
SIZE	-	-0.435	(7.798)[a]	-0.440	(8.114)[a]	-0.530	(11.580)[a]
BIG4	-	-0.412	(0.622)	-0.604	(1.346)[c]	-0.297	(0.322)
BLOCK5	-	-0.194	(0.050)	-0.123	(0.020)	-0.182	(0.044)
Pseudo R^2		25.6%		24.3%		22.8%	
χ^2		29.504[a]		27.888[a]		25.977[a]	

4.2.4 Audit Committee Multiple Directorships

Six logistic models are estimated for examining the association between multiple directorships and aggressive earnings management. The corresponding results are included in Table 9. The Nagelkerke pseudo R^2 for all six models are greater than 22%, which indicate that the explanatory power of the models is reasonable. The models' χ^2 are significant ($p < 0.01$). These data suggest the models are a good fit.

These six models are categorised into two groups, the first group is the percentage measures of directors holding multiple directorships on the audit committee, and the second group of measures is the maximum number of additional directorships held by any one member of the firm's audit committee. Each group is further classified by differentiating between the types of directors, whether they are directors, non-executive directors, or independent directors. Under the first category, no significant coefficients are obtained for all three models. These suggest no association between aggressive earnings management and the percentage of multiple directorships for directors generally (ACMDDIR%), non-executive directors (ACMDNE%), and independent directors (ACMDIND%) on the audit committee. However, when audit committee multiple directorships is proxied by the log value of the maximum number of additional directorships held by any one member of the firm's audit committee, some significant results are observed. The coefficient for the maximum number of other board seats held by any director on the audit committee (ACMDDIR_Max) is positive and significant ($p < 0.05$), and the coefficient for the maximum number of other board seats held by any non-executive audit committee member (ACMDNE_Max) is also positive and marginally significant ($p < 0.10$). The coefficient on the maximum number of other board seats held by any independent director on the audit committee (ACMDIND_Max) is not significant. Overall, there is some evidence to suggest that multiple directorships are positively associated with aggressive earnings management, thus supporting the busy director argument. That is, when one director on the audit committee serves on many boards, the likelihood of aggressive earnings management increases. This result is consistent with Beasley (1996), who finds a significant positive association between multiple directorships and the likelihood of financial statement fraud. Therefore, there is some evidence to reject the null hypothesis in H4.

Table 9: Logistic Regression Analysis for Audit Committee Multiple Directorships

Table 9 reports the results for the association between audit committee multiple directorships and aggressive earnings management (a dummy variable that is set to 1 if a firm's absolute value of performance adjusted modified-Jones model discretionary accruals is within the top or bottom 20% of the sample, and 0 otherwise) for 150 firms for both 2005 and 2004. The variables are defined in Table 3. The associated t-statistic is reported in the parenthesis and a, b, and c indicate t-statistic significance at the 0.01, 0.05 and 0.10 levels, respectively.

	Predicted Sign	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept		5.736	5.739	5.877	5.900	5.894	5.902
		(11.479)[a]	(11.515)[a]	(11.861)[a]	(11.899)[a]	(11.877)[a]	(11.699)[a]
ACMDDIR%	-/+	-0.078					
		(0.021)					
ACMDNE%	-/+		-0.134				
			(0.055)				
ACMDIND%	-/+			0.030			
				(0.002)			
ACMDDIR_Max	-/+				0.419		
					(2.011)[b]		
ACMDNE_Max	-/+					0.401	
						(1.672)[c]	
ACMDIND_Max	-/+						0.085
							(0.123)
LEV	+	0.762	0.755	0.754	0.762	0.805	0.751
		(1.103)	(1.104)	(1.077)	(1.000)	(1.070)	(1.048)
MKT	?	-0.037	-0.038	-0.036	-0.027	-0.027	-0.035
		(0.441)	(0.451)	(0.427)	(0.273)	(0.270)	(0.409)
LOSS	?	-0.088	-0.095	-0.068	-0.024	-0.035	-0.061
		(0.011)	(0.013)	(0.007)	(0.001)	(0.002)	(0.005)
ABSCH	+	0.405	0.437	0.328	0.153	0.132	0.306
		(0.062)	(0.072)	(0.041)	(0.010)	(0.007)	(0.038)
SIZE	-	-0.534	-0.531	-0.538	-0.591	-0.586	-0.545
		(12.074)[a]	(11.878)[a]	(11.636)[a]	(13.866)[a]	(13.669)[a]	(12.384)[a]
BIG4	-	-0.338	-0.335	-0.347	-0.447	-0.473	-0.395
		(0.424)	(0.414)	(0.445)	(0.726)	(0.803)	(0.540)
BLOCK5	-	0.031	0.023	0.055	0.213	0.215	0.114
		(0.001)	(0.001)	(0.004)	(0.061)	(0.062)	(0.017)
Pseudo R^2		22.0%	22.1%	22.0%	23.7%	23.4%	22.1%
χ^2		25.065[a]	25.099[a]	25.046[a]	27.101[a]	26.747[a]	25.168[a]

4.2.5 Summary of All the Most Significant Audit Committee Variables

Since there are multiple measures for each audit committee characteristic, the most significant variable is selected from each category of the audit committee characteristic to test the robustness of the results when these variables are estimated in a single model. Table 10 summarizes the results for the most significant audit committee

variables when they are included together in one model. The Nagelkerke pseudo R^2 is 22.7% and the model's χ^2 is significant ($p < 0.01$). These data indicate that the model is a good fit. The results are qualitatively similar to those reported earlier except for the maximum number of any director holding multiple directorships on the audit committee (ACMDDIR_Max). This variable is not significant. The association between having majority independent directors on the audit committee (ACIND51%), the percentage of non-executive directors with accounting and / or financial expertise on the audit committee (EXPTNE%), and the percentage of shares held by directors on the audit committee (ACSHDIR%), and the likelihood of aggressive earnings management do not change if these test variables are included together. These results suggest the findings are generally robust to an all inclusive model.

Table 10: Logistic Regression Analysis for All the Most Significant Audit Committee Variables

Table 10 reports the results for the association between all the most significant audit committee variables and aggressive earnings management (a dummy variable that is set to 1 if a firm's absolute value of performance adjusted modified-Jones model discretionary accruals is within the top or bottom 20% of the sample, and 0 otherwise) for 150 firms for both 2005 and 2004. The variables are defined in Table 3. The associated t-statistic is reported in the parenthesis and a, b, and c indicate t-statistic significance at the 0.01, 0.05 and 0.10 levels, respectively.

	Predicted Sign	Model 1	
		Coefficient	(t-value) [a]
Intercept		4.756	(4.934) [a]
ACIND51%	-	-0.642	(1.616) [c]
EXPTNE%	-	-1.940	(4.266) [a]
ACSHDIR%	-/+	0.041	(3.168) [a]
ACMDDIR_Max	-/+	0.208	(0.311)
LEV	+	1.095	(0.922)
MKT	-/+	-0.093	(1.089)
LOSS	-/+	-0.172	(0.030)
ABSCH	+	4.367	(1.676)
SIZE	-	-0.438	(5.017) [a]
BIG4	-	0.076	(0.015)
BLOCK5	-	-0.414	(0.158)
Pseudo R^2		22.7%	
χ^2		26.044 [a]	

4.2.6 Tests of the New Zealand Recommendations

As mentioned earlier, the NZX (2004) listing rules and the 'Corporate Governance in New Zealand Principles and Guidance' issued by the NZSC (2004) recommend the audit committee to have a number of characteristics. Both regulators advocate the audit committee comprise only non-executive directors (ACNE100%), a majority of whom are independent directors (ACIND51%), and have at least one member with an accounting or financial background (OneExpert). The NZX further proposes an audit committee to have a minimum of three directors (ACSize_min_3dirs).

The NZSC (2004) also states the audit committe to have a chairperson who is an independent director (ACCHAIR_IND).

Accordingly, a logistic regression model is estimated to investigate the effect of the New Zealand audit committee recommendations on aggressive earnings management. The results are presented in Table 11. The Nagelkerke pseudo R^2 is 23.9%, indicating that the explanatory power of the model is reasonable. The model's χ^2 is significant ($p < 0.05$). These data together suggest the model is a good fit. The coefficients on majority independent directors (ACIND51%) and one director with an accounting or financial background (OneExpert) are negative and significant ($p < 0.01$ and $p < 0.10$, respectively). These findings suggest that the effectiveness of the audit committee, in terms of reducing the likelihood of aggressive earnings management, is enhanced when the majority of the directors on the audit committee are independent and there is one financial expert on the audit committee. The results in Table 11 show the recommendation related to audit committee size (minimum of three directors), 100% non-executive composition (ACNE100%) and an independent audit committee chair (ACCHAIR_IND), are not associated with the likelihood of aggressive earnings management. The results suggest these requirements may not be necessary in the New Zealand context and arguably provide some consolation to firms that are financially constrained to meet the corporate governance recommendations.

Table 11 reports the results for the effect of New Zealand recommendation on audit committees on aggressive earnings management (a dummy variable that is set to 1 if a firm's absolute value of performance adjusted modified-Jones model discretionary accruals is within the top or bottom 20% of the sample, and 0 otherwise) for 150 firms for both 2005 and 2004. The variables are defined in Table 3. The associated t-statistic is reported in the parenthesis and a, b, and c indicate t-statistic significance at the 0.01, 0.05 and 0.10 levels, respectively.

	Predicted Sign	Model 1	
		Coefficient	(t-value)
Intercept		5.713	(9.699)[a]
ACSize_min3_dirs	-	-0.708	(1.067)
ACNE100%	-	0.202	(0.111)
ACIND51%	-	-0.964	(2.982)[a]
OneExpert	-	-0.523	(1.493)[c]
ACCHAIR_IND	-	0.209	(0.123)
LEV	+	0.912	(1.173)
MKT	?	-0.022	(0.247)
LOSS	?	0.292	(0.108)
ABSCH	+	-0.522	(0.096)
SIZE	-	-0.405	(5.542)[a]
BIG4	-	-0.099	(0.032)
BLOCK5	-	-0.414	(0.18)
Pseudo R^2		23.9%	
χ^2		25.993[b]	

4.3 Sensitivity Analyses

4.3.1 Alternative Measures

Apart from the multiple measures reported in the tables, a number of other measures are used to check the robustness of the results. The analysis presented earlier included several measures for the four characteristics of the audit committee. Additional tests are performed for audit committee member shareholding and multiple directorships. Hu and Kumar (2004) argue that board members with at least 1% share ownership can significantly influence decision making. Accordingly, the number and percentage of audit committee directors (all directors, non-executive directors and independent directors) owning at least 1% shares on the audit committee, are used as

additional measures. However, no significant results were found for these variables which suggests that the 1% threshold may not provide sufficient incentives. In addition, audit committee multiple directorships is measured as the average number of other directorships held by independent audit committee members. When this measure is used for all, non-executive and independent directors, their coefficients are not significant.

4.3.2 Non-linear Effects

Relevant squared terms are used to test the non-linear effect of director shareholding and multiple directorships. The results related to the squared terms are not significant. These results suggest there is unlikely to be nonlinearity in the association between earnings management and continuous measures for director shareholding and multiple directorships.

4.3.3 Audit Committee Effect

The New Zealand governance recommendations allow companies to not have an audit committee provided they implement alternative governance mechanisms. In New Zealand, the board assumes the role of the audit committee when there is no audit committee. Therefore, firms without an audit committee (n=14) are included in the analyses with board variables representing audit committee variables. The results observed are consistent with those reported earlier. In some cases, they are more significant and this is probably due to a larger sample effect.

4.3.4 Colinearity Effects

The colinearity between the board and audit committee characteristics is tested by including the board characteristics into the analysis. When board characteristics such as board independence and board size, are included in the analysis, the significance

of the audit committee variables decreases. This suggests the board and audit committee variables are highly correlated. Similarly, when audit committee size is included, some of the audit committee independent variables become less significant. Such results are consistent with the correlation analyses.

4.3.5 Firm Size and Year Effects

When the sample is split into large and small firms using the median of total assets as the cut-off, the results are not significant because of the small sample size. The logit models are generally not significant ($p > 0.10$). Similarly, estimating the logit regression by year does not provide strong results because of the small sample size.

5.0 CONCLUSION

Motivated by the uniqueness of the New Zealand market, this study explores the association between audit committee member characteristics and earnings quality in New Zealand, a small economic market that is quite different from that of the larger markets. This research makes several contributions to the literature and practice. First, the study contributes to the literature by investigating how audit committee characteristics affect earnings management in a legal and institutional environment of a small economy like New Zealand. The results show that audit committee and earnings management associations observed in larger markets such as the U.S. do not necessarily hold in New Zealand. For example, 100% independence on the audit committee is not related to aggressive earnings management but it is related in a U.S. setting (e.g., Bedard et al., 2004). However, New Zealand companies do not adequately disclose corporate governance information and for this reason some tests (for example, audit committee meetings) could not be performed. The non-mandatory status of corporate governance disclosure in New Zealand may need to be reconsidered. Nevertheless, the

results of this study reveal an interesting finding. When directors' shareholding increases and they sit on more boards, the likelihood of earnings management increases. Share ownership by the directors and multiple directorships may explain why some directors are more vigilant than others. Such attributes could explain the inconsistent audit committee results in the literature on earnings management.

Second, the study also has potential implications for relevant regulatory bodies in New Zealand and may assist them in the development of corporate governance rules and principles. The results suggest having majority independent directors on the audit committee and at least one independent financial expert reduces earnings management, and such features of the audit committee could be enforced. However, 100% non-executive representation may not be necessary. It may be necessary to limit other board seats held by directors and their shareholding. More research is required to provide further insight on multiple directorships and director shareholding and how these affect the effectiveness of the audit committee. Third, the findings of the research can also provide a benchmark for studies in countries with similar economic and institutional structures.

However, as with other research, this study also has potential limitations, which provide avenues for further research. The reliability of the measures used depends on the accuracy and the level of the disclosed information. Firms with missing data or insufficient information are excluded from the sample to improve the validity of the model. Moreover, as variables are operationalized and measured by proxies, the power of the proxies affects the results of the study. Thus, more research using a larger sample is needed to understand how different measures of the audit committee affect earnings management.

There are also limitations regarding the generalizability of findings. The sample is drawn from companies listed on the NZX. These public firms are under greater regulatory pressure than private New Zealand firms. The results obtained from the data may not be generalized to small private firms because private firms are subject to different rules and regulations. Furthermore, the exclusion of firms from certain industries to accommodate the model can in turn limit the generalizability of results to those industries. Further research could be done to address these issues using other measures of earnings quality that do not impose restrictions on the study.

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