

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

**EARNINGS MANAGEMENT
AND
CORPORATE GOVERNANCE
IN
NEW ZEALAND**

A thesis presented in partial fulfilment of the
requirements for the degree of
Master of Business Studies
in
Accountancy
at Massey University, Palmerston North.

VIVIENNE MARY SAMPSON

2003

ABSTRACT

Despite the enormous body of literature on earnings management, little research has been done in New Zealand. Corporate governance is recognised worldwide as a means to improve corporate performance and increase shareholder value. Boards of directors are held responsible for monitoring the preparation of financial reports and should constrain any earnings management. Earnings management is more likely to occur in companies with weak governance structures such as companies that are targets of takeovers where directors' self-interests may not be aligned with shareholder interests.

This study examines the extent of earnings management in a sample of publicly listed New Zealand companies partitioned by takeover activity and tests the relationship between earnings management and the effectiveness of corporate governance. Abnormal working capital and discretionary accruals models are used to detect earnings management. Board effectiveness is measured by various corporate governance structures that include the percentage of independent non-executive directors, board size, existence of an audit committee and ownership features.

The results of this study indicate that takeover target firms, relative to control firms, have an increased level of earnings management by abnormal accruals, more earnings losses, lower leverage ratios, a larger board size, a larger number of grey (affiliated) directors, fewer independent directors, and a greater proportion of institutional ownership. Target firms are audited mainly by Ernst & Young or Deloitte Touche Tohmatsu whereas KPMG and PricewaterhouseCoopers mainly audit control firms.

The estimated accruals measures provide consistent evidence to indicate there is earnings management by income-increasing accruals. Discretionary accruals are managed upwards to avoid earnings losses and earnings decreases but regressions of the accruals measures produce ambiguous results relating to the effectiveness of corporate governance structures. Some evidence finds associations between measures of discretionary accruals and the existence of an audit committee and between the proportions of independent and grey directors in control firms where there are also significant firm-attributes such as size, leverage, cash flows from operations and earnings loss. There is evidence of an association between the level of working capital accruals and board ownership in target firms.

It can be concluded from the research that New Zealand companies exhibit earnings management and sound corporate governance practices. Target firms relative to control firms have weaker governance structures that may have contributed to the takeover activity.

ACKNOWLEDGEMENTS

This study has taken much longer than I envisaged at the start. However I have persevered and now I wish to give special thanks to my supervisor, Professor Jack Dowds, for his continued encouragement and guidance.

I also acknowledge the support received from my employer, The Open Polytechnic of New Zealand, particularly Jane Needham, Head, School of Accounting, Finance and Law, for financial assistance and research time. Thanks are due to Corinne Ross for technical assistance in presenting the work.

My family deserves my sincere thanks and appreciation for their moral support. I am grateful for statistical and SPSS advice from Neil and encouragement from John. I owe extraordinary thanks to my husband Bruce for his proofreading and helpful suggestions.

TABLE OF CONTENTS

ABSTRACT i

ACKNOWLEDGEMENTS ii

TABLE OF CONTENTS iii

Chapter One Introduction 1

 1.0 Introduction 1

 1.1 Research objectives 4

Chapter Two Literature review 7

 2.0 Introduction 7

 2.1 Earnings Management Research 7

 2.1.1 Incentives for Earnings Management 7

 2.1.2 Means of Detecting Earnings Management 8

 2.1.3 Motivation for the Current Research 11

 2.2 Corporate Governance Research 12

 2.3 Research on Takeovers and Mergers 20

 2.4 Summary 22

Chapter Three Hypothesis Development 23

 3.0 Introduction 23

 3.1 Relevant accounting theories 23

 3.1.1 Agency theory 23

 3.1.2 Normative accounting theory 26

 3.1.3 Positive accounting theory 27

3.1.4	Disciplinary theory of takeovers	27
3.2	Hypotheses Development.....	28
3.2.1	Earnings Management Hypothesis	28
3.2.2	Corporate governance hypotheses.....	31
Chapter Four	Research method	35
4.0	Introduction	35
4.1	Research Design	36
4.1.1	Detection of Earnings Management	36
4.1.2	Corporate Governance Factors	41
4.1.3	Takeover Activity.....	47
4.2	Sample Selection	51
4.3	Data collection.....	52
4.4	Data analyses	53
4.5	Limitations.....	53
Chapter Five	Results And Analysis	54
5.0	Introduction	54
5.1	Sample Descriptive Statistics	54
5.2	Earnings Management.....	63
5.2.1	Descriptive Statistics for Accruals Measures of Earnings Management.....	63
5.2.2	Earnings Management Hypothesis	69
5.2.3	Additional Tests	74
5.3	Corporate Governance and Earnings Management.....	78
5.3.1	Descriptive Statistics for the Independent Variables	78
5.3.2	Commentary on Descriptive Statistics of Some Independent Variables.....	81

5.3.3	Correlation Analysis.....	84
5.3.4	Regression Results for Tests of the Corporate Governance hypotheses.....	87
5.3.5	Hypotheses Conclusions.....	97
5.4	Takeover Activity.....	99
Chapter SIX	Discussion and Conclusion.....	103
6.0	Introduction.....	103
6.1	Discussion.....	103
6.2	Limitations and Further Research.....	108
6.3	Concluding Remarks.....	110
	List of Appendices.....	111
APPENDIX ONE	ABBREVIATIONS.....	112
APPENDIX TWO	LIST OF FIRMS EXAMINED.....	113
APPENDIX THREE	WORKSHEET AND SPSS DATA FILE.....	117
APPENDIX FOUR	GRAPHS.....	125
APPENDIX FIVE	STATEMENTS OF CORPORATE GOVERNANCE.....	129
	References.....	130
	List of Plates.....	136
	Plate 1 Arthur Levitt, Chairman of SEC in 1999.....	136
	Plate 2 A Happy Board of Directors.....	136

1.0 INTRODUCTION

The practice of earnings management has received enormous attention in the academic accounting literature over the past thirty or so years, particularly since the advent of research on accounting choice (Watts & Zimmerman, 1978). Earnings manipulation, income smoothing and financial statement fraud are some other terms used for earnings management but the two most often cited definitions of earnings management are as follows:

Earnings management is purposeful intervention in the financial reporting process, with the intention of obtaining some private gain (Schipper, 1989).

Earnings management occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports to either mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers (Healy & Wahlen, 1999).

Earnings management is thus the use of accounting discretion and can result from both operational and reporting choices (Schipper, 1989). Both definitions suggest that earnings management is opportunistic but management may use discretion to communicate private information so that not all accounting discretion is opportunistic. Earnings management may occur either within or outside GAAP¹ where violation includes fraud (Dechow & Skinner, 2000).

¹ Appendix 1 contains a list of explanatory abbreviations for acronyms used in this research report.

Corporate governance is a global term covering all the issues for a board of directors in directing and controlling a company's operations and is practiced universally. Although primarily developed for use in the private sector, the same governance principles are applicable to any public sector entity such as charitable trusts, Crown entities, local authorities and not-for-profit organizations, where there are defined lines of responsibility and accountability for effective governance.

The word "governance" implies power, authority and control that are appropriate terms for the process of governing. Cadbury (2002) cites two definitions of corporate governance that are:

1. *the system by which companies are directed and controlled and*
2. *the process by which corporations are made responsive to the rights and wishes of stakeholders.*

Other general definitions contain the phrase *to protect shareholder interests* which points directly to agency theory and the concept of stewardship of a company by directors.

Two of the features of corporate governance² relating to directors that concern this study are the monitoring of performance and the reporting on stewardship that are in effect the link between management and shareholders. Directors' duties are codified under the Companies Act 1993 and s194 of the Act requires directors to keep accurate accounting records and prepare financial statements in accordance with the Financial Reporting Act (FRA) 1993. Section 3 of the FRA 1993 requires financial statements to comply with GAAP and give a true and fair view of relevant financial matters. In addition to the statutory duties, the duty of independence has been identified by various commentators as being of prime importance.

² Principles of corporate governance are embedded in numerous statutes such as the Companies Act 1993, Financial Reporting Act 1993, Securities Act 1978, Commerce Act 1986 and NZSE listing rules.

Directors are required to act in good faith in their company's best interests (s131, 132 Companies Act 1993) and maximize returns to shareholders while ensuring that their company complies with relevant legislation. Thus there is an element of conflict between performance³ and compliance issues. The board's role is to provide oversight whilst management is responsible for actual compliance but breaches of relevant legislative requirements can lead to hefty penalties for directors. The chairman of the board reports to shareholders and regulatory authorities on the board's stewardship via the annual report which should contain a Statement of Corporate Governance to acknowledge the board's collective responsibility. Given that the board is responsible for the company's affairs, it is important to examine the corporate governance structure in terms of composition of the board of directors (size, nature, committees, independence and share ownership) to determine the effectiveness of a board in constraining earnings management.

The Hampel Report (1998) states:

Good governance can make a significant contribution to the prevention of malpractice and fraud although it cannot prevent them absolutely.

³ Performance in this context implies profit but it should also reflect qualitative aspects of a company's operations and economic and environmental circumstances.

1.1 RESEARCH OBJECTIVES

The purpose of this study is to respond to the earnings management research issues raised by Levitt (1998; 1999)⁴, Healy & Wahlen (1999), Peasnell, Pope & Young (1999; 2000) and Dechow & Skinner (2000). In light of the collapse of Enron (the US energy trading company in 2001) and WorldCom, a year later, where financial misreporting was implicated and audit quality and independence⁵ was questionable, it is appropriate to examine the effectiveness of corporate governance mechanisms to constrain earnings management in the NZ setting. The research will attempt to answer the following questions:

What is the extent of earnings management in New Zealand?

Is earnings management common or infrequent?

What conditions prevail for earnings management to occur?

Is there an effect of firm size or industry or managerial ownership on earnings management?

What is the magnitude of earnings management? Is it material?

Is there a relationship between earnings management and corporate governance? Do boards have the ability to limit earnings management behaviour?

Are there any beneficial aspects of earnings management?

The study is motivated by a concern that NZ boards of directors may not be fulfilling their statutory duties following the first case of a breach of the Financial Reporting Act 1993 with charges laid in June 2001 by the Registrar of Companies, Companies

⁴ See Plate 1.

⁵ The collapse led to the world-wide demise of the accounting firm Arthur Andersen.

Office, against seven company directors of Qantas NZ Ltd. The study will attempt to identify the magnitude and frequency of earnings management by New Zealand reporting entities that have been the target companies involved in recent takeover activity. There is sufficient evidence from prior studies that managers may have strong incentives to manage earnings in response to a specific event such as a merger or takeover. In takeover circumstances, the research will test target companies for evidence of a relationship between the level of earnings management (proxied by abnormal accruals) and corporate governance (proxied by the composition and organisation of boards of directors) and will attempt to develop an understanding of this relationship compared to the relationship between earnings management and corporate governance in non-takeover firms.

1.2 CONTRIBUTION TO KNOWLEDGE

The research will contribute to the body of literature on earnings management. The findings will describe earnings management in the NZ context. Thus the research will have implications for standard setters, the FRSB of ICANZ, particularly in view of the trend towards harmonisation of standards⁶ as well as regulatory authorities such as the Companies Office, NZSE, NZSC and possibly Inland Revenue and the Institute of Directors. The research findings on corporate governance mechanisms operating in NZ companies may serve as a wake-up call to directors to improve their firms' performance. The findings may also have implications for regulatory authorities in other jurisdictions in view of the number of NZ companies moving their head offices to Australia and elsewhere, for example, Lion Nathan Ltd and Nufarm Ltd. The research may be of importance in view of a possible future merger of the NZSE with the ASX. One standard-setting consequence of this earnings management research is support for more mandatory disclosure with associated reduction of accounting choice to improve the integrity, reliability and quality of financial reports.

⁶ The ASRB in NZ will adopt international financial reporting standards (IFRS) from 1 January 2007

1.3 Chapter Outline

The remainder of the thesis is structured according to the following chapters:

Chapter Two provides a review of the relevant literature on earnings management and corporate governance, in particular the monitoring role of the board of directors.

Chapter Three addresses the development of hypotheses to test the link between earnings management and board effectiveness. Chapter Four describes the research method used in the study to estimate earnings management and discusses the research design. Chapter Five reports descriptive statistics for the sample and regression variables, results of empirical analyses and regression results of tests of the earnings management and corporate governance hypotheses and there is ensuing discussion of these results. Chapter Six presents the conclusions and implications for future research.

2.0 INTRODUCTION

This chapter presents a review of prior research that is relevant to the current study on earnings management and corporate governance in NZ. There is also a section on research surrounding takeovers since the research design incorporates takeover activity as a conditioning factor.

2.1 EARNINGS MANAGEMENT RESEARCH

There is an enormous body of literature on earnings management. This section deals with just some of the evidence of managerial incentives to manipulate reported earnings and then reviews various research methods of detecting earnings management.

2.1.1 INCENTIVES FOR EARNINGS MANAGEMENT

Motives for earnings management are generally categorised into contracting incentives, market-based incentives and non-opportunistic incentives. These incentives can be further grouped according to responses to specific events or as ongoing manipulation. Examples of significant earnings management research involving earnings management incentives include studies of:

- earnings-based management compensation contracts, bonus plans and job security (Healy, 1985; De Fond & Park, 1997)
- lending contracts and avoidance of debt covenant violations (DeFond & Jambalvo, 1994; Dechow, Sloan & Sweeney, 1995)
- share market reasons such as income smoothing's positive effect on a firm's market value (Trueman & Titman, 1988); meeting financial analysts' expectations

- (Burgstahler & Eames, 2000); influencing investors decisions (Bushee, 1998); stock price incentives such as mergers (Erickson & Wang, 1999); and management buyout offers (Perry & Williams, 1994);
- response to other specific events such as avoidance of earnings declines and small losses (Burgstahler & Dichev, 1997); meeting management forecasts (Kasznik, 1999);
 - regulatory considerations such as political costs of anti-trust regulation (Cahan, 1992); product price controls (Lim & Matolcsy, 1999); and industry regulatory costs such as those affecting insurance companies (Adiel, 1996);
 - tax motivations to minimise tax liabilities (Marsden & Wong, 1997).

Revsine (1991) describes the selective financial misrepresentation hypothesis as the result of contrived and flexible financial reporting rules promulgated by standard setters who have been captured by “regulatees” ie managers which inevitably facilitates opportunistic behaviour.

2.1.2 MEANS OF DETECTING EARNINGS MANAGEMENT

Once earnings management incentives are established, by identifying the conditions where incentives are likely to be strong, prior research has typically focused on whether and when earnings management takes place (Healy & Wahlen, 1999). Estimates and measures of earnings management based on unexpected (or abnormal or discretionary) accruals or accounting method choices are tested for consistency with the identified incentives. Discretionary or abnormal accruals are estimated by first measuring total accruals (the difference between reported net income and cash flow from operations) and regressing total accruals on variables that are proxies for normal accruals such as revenues (or cash collections from customers) to allow for working capital needs (receivables, inventory and trade credit), and gross fixed assets to allow for normal depreciation. Discretionary accruals are the unexplained or residual components of total accruals. However, studies that use discretionary

accruals are criticised for their imprecision and are not found useful in studying incentives among firms experiencing extreme performance (Beneish, 1997 and Dechow, Sloan & Sweeney, 1995).

Earnings management techniques, other than accrual choices which are potentially available to managers, include “real”⁷ operating decisions such as financing and investment decisions using asset sales and revaluations (Bartov, 1993; Black, Sellers & Manly, 1998 and Cotter, 1998) and changes in research and development expenditure (Dechow & Sloan, 1991; Bushee, 1998). “Real” earnings management methods are often quite transparent and do not mislead financial statement users but are costly to the firm, whereas “accounting” types of earnings management are discrete method choices such as changes in depreciation lives (Watts & Zimmerman, 1986; Hall & Stammerjohan, 1997). Specific accruals such as the provision for bad debts (McNichols & Wilson, 1988) and bank loan loss provisions (Wahlen, 1994) have been used in some earnings management studies although their motivational aspects are not clear. Some other authors (Beneish, 1998 and Miller & Skinner, 1998)⁸ suggest that discretionary accruals are easier to detect if researchers focus on just one component of accruals rather than on total accruals.

“Accounting” type earnings management by discrete method choices is also very transparent and should not fool anyone so these methods of earnings management can hardly be described as opportunistic. In contrast, evidence of “accounting” earnings management by accruals manipulation has relative advantages in that it is a more plausible source of earnings management as it is difficult for users to unravel (and researchers to detect!) because of the myriad of accruals choices. Numerous examples of research using accruals manipulation include studies by Healy (1985); DeAngelo

⁷ Mark DeFond used the terms “real” and “accounting” types of earnings management in his keynote address entitled “Earnings Management and Audit Markets Research” to the Accounting Research School, University of Technology, Sydney, February 2000.

⁸ Miller & Skinner (1998) used deferred tax assets.

(1986, 1988), Jones (1991), DeFond & Jambalvo (1994); Erickson & Wang (1999) and Peasnell, Pope & Young (1999; 2000).

A survey of some of the income-smoothing research finds relevant papers by Healy (1985), and Guidry, Leone & Rock (1999). Healy tests the bonus hypothesis which assumes income-increasing discretionary accruals. Although he partitions the variables so that there is an upper bound equivalent to cash flow from operations and a lower bound equivalent to total earnings, there is a problem with correlation between the partitioning variables and the discretionary accruals. Healy's model of discretionary accruals (proxied by total accruals) is considered by many commentators to be a crude measure of earnings management⁹. Guidry et al. replicate and support the Healy model and refute the income-smoothing hypothesis. One criticism is that Guidry's data is at divisional level rather than firm level where managers may have different incentives.

In their seminal paper, Dechow, Sloan and Sweeney (1995) evaluate alternative accrual-based models for detecting earnings management. They compare discretionary accruals measures generated by five model specifications¹⁰ and conclude that all models are well specified but generate tests of low power for earnings management of economically plausible magnitudes. Also they find all models reject the null hypothesis of no earnings management in cases of firms with extreme financial performance. However they conclude that the measure of estimate discretionary accruals is performance related and the modified-Jones model has the most power in detecting earnings management. Guay, Kothari & Watts (1996) extend the work of Dechow et al. (1995) using the same five models of discretionary accruals but develop two motivational hypotheses for earnings management, namely,

⁹Further discussion of the details and merits of particular discretionary accruals models are included in Chapter 4.

¹⁰ The five models are those of Healy (1985), DeAngelo (1986), Jones (1991), and the modified-Jones and Industry models both developed by Dechow & Sloan (1991).

performance measurement and opportunism. Managers use discretionary accruals to produce reliable measures of firm performance (earnings) and behave opportunistically to conceal poor performance or exaggerate good performance for compensation or job security motives. Healy (1997), points out that managers have incentives to manage earnings other than opportunism or performance reasons, such as to lower taxes and to reduce regulatory costs and questions how these other incentives affect the interpretation of findings by Guay et al. (1997). Healy (1997) concludes that all five accruals models at best are crude and even alternative approaches such as that by Thomas & Zhang (2000)¹¹ have limitations. These latter authors compare six different accruals models to detect earnings management and conclude that only the Jones (1991) model exhibits some predictive ability. Their results are surprising because despite the numerous items of information used to create the models, their naïve model (total accruals equals –5% of the previous year’s total assets) outperforms more sophisticated models in detecting earnings. Their work assumes that earnings management is more likely to occur for current accruals (changes in non-cash working capital) compared to other ways of managing earnings as firms are less likely to change non-current accruals such as depreciation methods and estimates. Peasnell, Pope & Young (1999; 2000) use abnormal working capital accruals¹² to proxy for earnings management and find widespread use of accrual management to meet earnings targets both before and after the implementation of the Cadbury code of best corporate governance practice (discussed below).

2.1.3 MOTIVATION FOR THE CURRENT RESEARCH

The Chairman of the SEC¹³ expressed his concern about earnings management. He states “we are witnessing an erosion in the quality of earnings, and therefore the quality of financial reporting” (Levitt, 1998). Levitt notes five areas of earnings

¹¹ Healy (1997) refers to a 1996 working paper by Thomas & Zhang later published in 2000.

¹² This technique is explained in detail in Chapter 4.

¹³ See Plate 1.

management that threaten the credibility of financial reporting, namely abuses of “big bath” restructuring provisions, creative acquisition accounting, premature revenue recognition, “cookie jar” reserves and write-offs of purchased in-process R & D. Misleading disclosures contribute to the earnings management problem so the SEC is stepping up enforcement of disclosure requirements that will require firms to restate earnings. In New Zealand, the recent release of FRS-15: *Accounting for provisions, contingent liabilities and contingent assets* addresses some of the SEC concerns. The transitional effect of adopting FRS-15 requires adjustment to the opening balance of retained earnings in the period of adoption and restatement of comparative information.

Long before the events of Enron and WorldCom, Healy & Wahlen (1999) echo Levitt’s concerns and call for an assessment of the pervasiveness of earnings management. It is Dechow & Skinner (2000) who distinguish the differing views of earnings management by accounting academics, practitioners and regulators. These authors review the current state of research in earnings management and present some alternative methods using time-series approaches to meet simple earnings benchmarks of loss or decline¹⁴ but conclude that understanding management incentives is the key to understanding why managers engage in earnings management.

2.2 CORPORATE GOVERNANCE RESEARCH

Corporate governance has only recently emerged as a discipline in its own right, although the strands of political economy it embraces stretches back though centuries. (The World Bank Group cited in Cadbury, 2002)

Corporate governance is the link between management and shareholders exemplified by the activities of the directors. However, there is some historical debate over the

¹⁴ Burgstahler, D., & Eames, M. (2000).

role of the board of directors in the course of corporate governance. Fama & Jensen (1986) view the board as an internal governance process whereas Mace (1986) believes that CEOs dominate the selection of directors and questions the importance of the board and outside directors as monitors. In the UK, the perceived scope for earnings management under a more flexible GAAP than that in the US has raised concerns over the integrity and credibility of financial reporting which has led to improved governance structures in relation to the board of directors (Cadbury Report, 1992). In the evolution of corporate governance, there have been several significant reports that were spearheaded by concerns over the failure of listed companies on the London stock market. These reports are:

1. The Cadbury Committee Report (1992), a private sector initiative, includes the Cadbury Code of Best Practice that deals with the accountability of boards of directors to their shareholders and financial aspects of corporate governance. The report recommendations received public endorsement in the United Kingdom and have been adopted in other countries. The report certainly guided NZ thinking although, in some ways NZ was probably ahead of the Cadbury Report because of the nature of listed companies in this country (Baumann, 2002). The Code covers four main areas:
 - Board of Directors – membership and the role of non-executive directors and their responsibilities;
 - Non-executive directors - selection (a majority to be independent) and their role;
 - Executive directors - service contract and remuneration to be determined by a remuneration committee and disclosed in detail;
 - Reporting and controls via the annual report – containing the accounts and an explanation of the directors' responsibility for preparing the accounts and a statement about the auditor's reporting responsibilities.

2. The Greenbury Committee Report (1995) discusses remuneration of directors, disclosure of emoluments and the linking of executive directors' remuneration to company performance.
3. The Hampel Committee on Corporate Governance (1998) reviews the implementation of the findings of the previous two committees and endorses the findings. However unlike the two previous reports that were in response to corporate failures or unjust compensation packages, the Hampel Report takes a positive view of the contribution which good governance can make. Hampel finds that large firms fully implemented the codes but smaller companies had difficulty with compliance yet Hampel considers that the principles of good governance should be sufficiently flexible to apply to all types of entity depending on the varying circumstances of individual companies. The Hampel report covers directors, remuneration, shareholders, accountability and audit matters. As a consequence of these three reports, a combined code of corporate governance was developed in 1998 as part of the London Stock Exchange listing rules and adopted by UK listed companies in 2000.
4. The Turnbull Report (1999) is the last in the series of reports on corporate governance and deals with internal control guidance for directors and relates to risk management.

As a consequence of these reports, debate occurred in the academic literature and the comments by Bartlett & Chandler (1999) are no exception. They question whether the private shareholder will receive sufficient relevant and understandable information to enable them to play a more positive role in corporate governance. These concerns are addressed by the OECD (1999) document containing a set of corporate governance principles that has the backing of the World Bank and the International Monetary Fund. The principles cover five areas:

1. The rights of shareholders;
2. The equitable treatment of shareholders;

3. The role of stakeholders;
4. Disclosure and transparency; and
5. The responsibility of the board.

The OECD based its recommendations on the notion that corporate governance provides the structure through which the company objectives are set and the means of attaining those objectives and monitoring performance are determined. Good governance should provide proper incentives for the board and management to pursue objectives that are in the interest of the company and its shareholders. The corporate governance framework depends on the macroeconomic policies and the degree of competition in product and market as well as on the legal, regulatory and institutional environment in which the company operates.

There is convergence between the UK, OECD and the NZ approach. In theory, according to CCH (1999), the key elements of best corporate governance for NZ are:

- Strategic direction;
- Policy formulation;
- The selection of a chief executive officer;
- Risk management and control;
- Legislative compliance;
- Monitoring performance; and
- Reporting on stewardship.

Directors need to understand all their responsibilities with regard to these elements in order to provide effective governance of their companies. The theoretical aspect is sometimes difficult to deliver in practice because directors are required to achieve maximum returns for shareholders (performance issues) without compromising company policies or statutory obligations (conformance issues).

The legal environment for corporate governance in NZ is set primarily by the Companies Act 1993, Financial Reporting Act 1993 and for public companies, the NZSE listing rules. New Zealand company law [(Companies Act 1993 (sections 208 - 211))] holds boards of directors responsible for the content and presentation of financial statements so there is a possibility that in discharging their financial reporting duties, boards may influence the degree of earnings management (Levitt, 1998 and Peasnell, Pope & Young, 1999). The New Zealand Stock Exchange listing rules¹⁵ [SE 10.5.3(h)] require all listed entities to disclose their main corporate governance policies, practices and processes adopted or followed. This means that all listed entities are required, from 1999, to have some form of corporate governance statement in their annual reports¹⁶. The board's authority is derived from s128 of the Companies Act 1993 and depending on firm size, ownership structure and nature of business, a board may have a varying amount of involvement in the company's operations. The board is made up of appointed directors but senior management who carry out duties similar to those of a director can be "deemed" directors for the purposes of the Act with the same responsibilities and liabilities as appointed directors. There are differences too between executive (employee) and non-executive directors who may or may not be independent directors. After the Cadbury Report was issued there was debate on the ideal mix of executive and non-executive directors comprising a board. It is not common for NZ companies to have boards made up of executive directors nor to have an executive director in the role of chairman as is the case in the US or was the case in the UK prior to the Cadbury Report.

¹⁵ New NZSE listing rules on corporate governance were announced on 6 May, 2003 in The Dominion Post, seeking NZSC approval. The aim of the package is to minimize uncertainty and risk for all sharemarket participants. A new disciplinary board will replace the "toothless" market surveillance panel. A minimum of two directors or one-third of every board must be independent and a director must not be simultaneously chief executive and chairman. New directors must complete appropriate training for certification and external auditors should be changed every five years. These measures are designed to improve accountability, certainty, and transparency to attract foreign investment in NZ.

¹⁶ See examples in Appendix 5.

Emanating from the OECD Principles are issues of board structure. The size and composition of the board is critical to decision - making functions. Board size is generally a function of the size and complexity of the company. If there is a small board it is easier to make collective decisions but it may be more difficult to ensure that the directors have sufficient skills and expertise to oversee the company's operations. The Institute of Directors in NZ recommends between five and ten directors but companies listed on the NZSE are required to have at least three directors.

Thus, all these performance and conformance issues for directors and the associated corporate governance mechanisms provide ample opportunities for investigation by accounting academic researchers. Demirag, Sudarsanam & Wright (2000) provide a comprehensive summary of the development of corporate governance and offer suggestions for further research on the topic.

Different aspects of corporate governance research continues with Beasley (1996) who analyses the relationship between the composition of the board of directors and financial statement fraud and finds no-fraud firms have a significantly higher percentage of outside¹⁷ directors than fraud firms. The presence of an audit committee did not make a difference but as outside director ownership of the firm increases then the likelihood of financial statement fraud decreases. Thus, the presence of outside directors enhances the quality of accounting information.

There are studies examining the relationship between corporate governance structures and the informativeness of earnings. Vafeas (2000) uses board size and the fraction of outside directors to proxy for corporate governance and finds no evidence to suggest that board composition mitigates the earnings-return relationship but market

¹⁷ An outside director is an independent non-executive director.

participants perceive earnings from firms with the smallest boards as being more informative.

Ho & Wong (2001) study the relationship between corporate governance structures (characterised by the proportion of independent directors and family members on the board, presence of an audit committee, and existence of a dominant personality¹⁸) and the extent of voluntary disclosure by listed Hong Kong firms. They find that presence of an audit committee is positively related to voluntary disclosure whereas family members of the board have a negative relationship.

It was the excessive powers given to top management without adequate controls resulted in creative accounting practices in many UK companies with manipulation of earnings being common (Demirag, Sudarsanam & Wright, 2000). Hence Peasnell, Pope & Young (2000) examine whether the association between earnings management (measured by abnormal accruals) and board composition differs between the pre- and post-Cadbury report periods. They find no evidence of an association between abnormal accruals management and board composition in the pre - Cadbury period. However there is evidence of less income-increasing accrual management to avoid losses or earnings declines in the post-Cadbury period where a high proportion of non-executive directors exist. These results indicate that boards are discharging their financial reporting duties more effectively since the implementation of the Cadbury report.

Dechow & Skinner (2000) discuss ways that regulators can detect earnings management in firms and note two useful characteristics for earnings management detection:

¹⁸ The chairman is also the CEO.

1. Firms with large accruals and hence large difference between earnings and cash flows.
2. Firms with weak governance structures.

Therefore, it can be seen from the last two papers that the role of the board is pivotal in constraining earnings management and in particular, it is the integrity of non-executive directors who ensure the quality of accounting information.

2.3 RESEARCH ON TAKEOVERS AND MERGERS

When there is a takeover announcement there is a frenzied media focus on the companies concerned. In NZ, there was an unsuccessful outcome of the Montana takeover by Lion Nathan because some shareholders were treated differently from others and there was a similar attempt by Edison Mission Energy for Contact Energy. More recently, in 2003, Graeme Hart of Burns Philp took over Goodman Fielder in Australia but NZ shareholders in the target firm were affected by the action and the majority sold their shares. What are the directors doing? Company directors face a dilemma in that they occupy a dual role in the principal-agent relationship being both principals of the managers and agents of the shareholders. In the corporate governance literature, the behaviour of the director as agent has received little attention. Merrett & Houghton (1999) document a fascinating case of an Australian company taken over in the 1950's where board members were presented with a incentive and an opportunity to behave opportunistically. Despite the lack of a corporate governance code of best practice or disciplinary measures, the directors served the interests of their shareholders well. The directors did not possess large equity in the company so were not driven by the "wealth" effect but their behaviour was consistent with self-interest.

In a paper resembling the current study in terms of key word parameters, Eddey & Taylor (1999) investigate whether Australian companies manage their earnings during takeover bids in a manner consistent with the earnings management hypothesis. Their measure of unexpected accruals is similar to DeAngelo (1986,1988) but they find no evidence to support the hypothesis but find some of the components of unexpected accruals do change in the direction predicted by the hypothesis. The authors conclude that unexpected accruals are a manifestation of poor financial performance of target firms in the period prior to the takeover bid.

Shivdasani (1993) explores the link between corporate governance in terms of board composition and ownership structure and hostile takeovers. He finds evidence that indicates, relative to control firms, outside directors in hostile takeover attempts have lower ownership stakes and hold fewer additional outside directorships. Ownership by management and affiliated block holders decreases the probability of a takeover but ownership by unaffiliated block holders increases the probability. Ailing internal governance structures with ineffective boards increases the likelihood of a hostile takeover and supports the view held by skeptics of the benefits of corporate governance, that without a significant ownership stake, directors have no incentive to monitor firm performance so they are likely to be replaced by a takeover.

Another line of earnings management enquiry is the work by Perry & Williams (1994) that concerns managers' conflicts and incentives to reduce earnings preceding management buyout offers. This research finds evidence of manipulation of discretionary accruals in the predicted direction in the year preceding the public announcement of management's intention to bid for the control of the company. The study uses the Jones (1991) model and tests pooled estimated abnormal accruals and predicts a negative value for the MBO firms in year -1 prior to the announcement. The results show that the abnormal accruals are indeed significantly less than zero as predicted but not significantly different from zero for the control firms or the year t-2. This research has implications for the present study in terms of the research design. The research by Erickson & Wang (1999) finds acquiring firms manage earnings upward in the periods preceding the merger¹⁹ in order to increase the stock price. A higher stock price reduces the number of shares that the acquiring firm must use in the exchange, hence the incentive to increase the stock price. Total accruals defined by Healy (1985) are used along with unexpected accruals estimated by the Jones (1991) model. Erickson & Wang suggest that target firms too have an incentive to increase pre-merger earnings to increase the transaction price and so analyse the

¹⁹ The mergers are on the basis of stock for stock transactions rather than cash deals.

unexpected accruals for target firms. Their results show that while the target firms' unexpected accruals are positive in the pre-merger period, they are not significantly different from zero. The fact that this research addresses the effect of mergers on target firms (as well as on the acquiring firms) is relevant to the present study of earnings management by target firms subject to takeover attempts.

2.4 SUMMARY

The research discussed in this chapter demonstrates the evolution of earnings management research and introduces a relationship between earnings management and corporate governance under takeover or merger conditions. The literature has relevance for the present study in terms of research design and methodology. The literature also presents results that are useful for comparative purposes. In their review of the earnings management literature and its implications for standard setting, Healy & Wahlen (1999) call for an assessment of the pervasiveness of earnings management and the overall integrity of financial reporting. Regardless of whether management uses discretionary accruals efficiently or opportunistically, material or immaterial distortion of earnings may result, which should be constrained by boards. The relationship between a company's management, directors and its financial reporting system is crucial, particularly when it affects the quality and integrity of the financial reporting process.

CHAPTER THREE HYPOTHESIS DEVELOPMENT

3.0 INTRODUCTION

The first part of this chapter provides a brief discussion of four accounting theories that are relevant to the research topic. These theories are agency theory (relating to both corporate governance and earnings management), normative theory, positive accounting theory (relating to the research methodology) and the disciplinary theory of takeovers. The second part of the chapter discusses the development of the research hypotheses pertaining to earnings management and corporate governance in the context of takeover activity.

3.1 RELEVANT ACCOUNTING THEORIES

3.1.1 AGENCY THEORY

The extent to which salaried managers (the agents) are hired to run the company on behalf of its owners (the principals) constitutes agency theory along with the notion of stewardship. According to agency theory (Jensent & Meckling, 1976), there is a natural divergence between managerial and shareholder utility functions as shareholders want profit maximization by their firms whereas managers align their interests with expansion of the firm (for all the various incentive reasons discussed in the previous chapter).

In the eighteenth century, Adam Smith (1776) wrote *The Wealth of Nations* and identified a governance issue relating to the agency problem in his discussion on joint stock companies. He wrote:

The directors of such companies however being the managers rather of other people's money than of their own, it cannot well be expected that they should watch over it with the same anxious vigilance with which the partners in private company frequently watch over their own.... Negligence and profusion, therefore, must always prevail, more or less, in the management of the affairs of such a company.

This agency problem continues today because it is inherent in the relationship between the principals - the providers of capital (the owners or shareholders) and their agents (directors and managers) who use the capital. Agency problems occur because of asymmetric information, as managers have a distinct advantage in that they have access to critical information unavailable to other stakeholders, including shareholders. Another reason for the agency problem is because company directors occupy a dual position in the principal/agent relationship being both the principals of the managers and the agents of the shareholders. Before the introduction of the corporate governance principles and rules, there was a focus on the self-interest of directors and executives rather than on the goal of increasing the return to shareholders or maximizing shareholder value.

The separation of ownership and control and the notion of stewardship is important for corporate governance development as it influences the structure and composition of boards of directors, disclosure requirements of directors' interests and the balance of power between directors and shareholders (Cadbury, 2002). The theory argues that self-interested managers may behave opportunistically to maximize their own welfare rather than share value and so need to be monitored or controlled. The opportunity to manipulate earnings is influenced by the extent of monitoring of the firm.

Shareholders cannot judge *a priori* whether management actions are in their best interests. The principal/agent relationship between directors and shareholders is similar to that between managers and shareholders. Directors have better information about the company regarding present and future earnings and use such private information to make strategic decisions to increase the size of the firm rather than the share price or to distribute increased earnings to themselves or their employees (Merrett & Houghton, 1999).

The nature of the agent-principal relationship has changed in recent times since the majority of shares are owned by institutional investors²⁰ with shares held by fund managers so there is not just one set of agent-principals but a chain of them (Healy, 2003). The problems with institutional investors relate to their passivity and reluctance to exercise their shareholder rights. In fact the rise in institutional shareholdings with an accompanying increase in the concentration of shareholdings has led commentators to predict the end of the separation of ownership and control (Ramsay, Stapledon & Fong, 2000).

Agency costs are defined by Jensen & Meckling (1976) as the sum of

1. *the monitoring expenditure of the principal*
2. *the bonding expenditure of the agent, and*
3. *the residual loss.*

Thus agency costs can occur when the agent's (managers) interests do not coincide with those of the principals (shareholders). If the manager owns shares there are incentives to convert assets to dividends or transfer wealth at the expense of shareholders.

Acquiring firms may choose not to manage earnings because agency theory requires the cost of undoing earnings management to exceed the cost of earnings management (Watts & Zimmerman, 1986). The theory predicts that occurrence of earnings management is most viable in firms where the cost of undoing earnings management is high. This would be the situation for a naïve uninformed user of accounting information. However, managers and directors of target firms must act in their shareholders' best interests so they have incentives to be exceedingly well informed to ensure that financial statements of acquiring firms are free of material earnings management. Both target and acquirer could probably anticipate that each would

²⁰ 23% of shares are owned by individuals (NZSE at 31/9/01)

manipulate pre-takeover earnings so the transaction price would be adjusted accordingly (Erickson & Wang, 1999).

Healy (2003) claims the best way to understand the link between corporate governance and shareholder value is through agency theory. While most companies state a commitment to shareholder value, it is difficult to find real evidence of the commitment, such as how closely aligned are the interests of senior executives with those of shareholders. New corporate governance rules are designed to protect the rights of shareholders.

3.1.2 NORMATIVE ACCOUNTING THEORY

There is an element of normative theory underpinning the development of corporate governance in that there are ethical concepts and issues of goal determination, and user needs and interpretation of accounting information. A definition of “normative”²¹ reads:

Tending to establish a standard of correctness by prescription of rules: evaluation.

Values such as fairness and usefulness of accounting information are implicated but the present study does not consider the normative approach.

²¹ Definition extracted from a dictionary of philosophy (Flew, 1984).

3.1.3 POSITIVE ACCOUNTING THEORY

Positive accounting theory stems from empirical facts derived from observation or experiment and generalization and is output focused. The positive approach is said to be free of value issues (Yu, 1973) so the theory structure has a basic framework of analyzing and explaining empirical content within the bounds of the discipline. The theory has the scientific characteristics of neutrality and objectivity. Watts & Zimmerman (1978) claim credibility for positive accounting theory on scientific grounds. The theory requires a set of propositions to be developed logically entirely without any normative connotations (for example, use of such a word as “ought” is avoided). In the context of positive theory, Watts & Zimmerman (1978) suggests that firm characteristics, size and industry may impact on management’s incentive and ability to manipulate earnings. Therefore, this study of earnings management takes the positive approach with measurement, analysis and communication of results. .

3.1.4 DISCIPLINARY THEORY OF TAKEOVERS

This theory developed by Jensen (1988) suggests that gains from takeover activity are a result of improvements to a firm value brought about by replacing non-shareholder wealth maximising management and their policies. If decisions by management could be perfectly controlled, actions that reduce shareholder wealth would not occur. Thus the existence of hostile or disciplinary takeovers implies a lack of perfect monitoring and control. Shivdasani (1993) finds evidence that both directors’ characteristics and ownership structures can contribute to the imperfect control of management actions and they are significant determinants of the likelihood that a firm is a hostile target of a takeover attempt²².

²² A recent example of a hostile takeover in NZ is the effective increase from 16% to 34% of ownership by PPSC (Co-op) in Richmond Ltd.

According to Cadbury (2002, page 8), the market's response to poor board performance and lack of accountability to shareholders is unwanted takeover offers. The free market logic is that the highest bidder will generate the best returns from the company's resources if they have control over the company's assets. Such a takeover will be financed by debt that will supposedly strengthen accountability to shareholders. The new board arising from a takeover will have to generate cash to service the increased debt if they want to expand the enterprise and persuade shareholders that the expansion will add value to the business²³. All publicly listed firms are potential targets of takeover if their boards are weak, ineffective and do not achieve higher levels of performance²⁴.

3.2 HYPOTHESES DEVELOPMENT

3.2.1 EARNINGS MANAGEMENT HYPOTHESIS

The research first tests the earnings management hypothesis. This has sometimes been expressed as the income smoothing hypothesis but income smoothing, earnings management, financial statement fraud and earnings manipulation appear to be terms used synonymously in the literature. Dechow & Skinner (2000) offer a distinction between fraud and earnings management based on accounting choices that either violate (US) GAAP or are within GAAP. This study will ignore such a distinction as there is little NZ evidence of GAAP violation (NZ Securities Commission, 1999) and even if it does occur then the number of companies involved is likely to be very small²⁵.

²³ There is a classic example of a recent hostile takeover when Burns Philp Ltd gained control of Goodman Fielder, thus affecting NZ shareholders.

²⁴ Performance in both profit making, shareholder value and service aspects.

²⁵ The "toothless" market surveillance panel is to be disbanded according to press statement (Fox, 2003).

Erickson & Wang (1999) examine earnings management by acquiring firms in mergers and find that these firms increase their earnings prior to merger in order to reduce the cost of buying the target. In the case of management buyouts, DeAngelo (1986) finds little evidence of pre-buyout managed earnings but Perry & Williams (1994) find strong evidence that management has an incentive to reduce earnings prior to the buyout in order to reduce the purchase price. In the case of takeover activity, target firms may have an incentive to increase their pre-takeover earnings in an attempt to increase the transaction price particularly in a hostile takeover.

Although the earnings management hypothesis has been the subject of so many theoretical and empirical studies set overseas, it is still necessary for this research to find evidence of earnings management in the NZ context. NZ firms are partitioned according to whether or not they have been subject to takeover or merger activity to answer the research question:

Do target companies manipulate their earnings prior to takeover or merger activity?

In this study, a target firm is defined as a NZ company that has either been delisted from the NZ Stock Exchange (NZSE) because of a takeover by an acquiring company or the firm has been the subject of takeover or merger activity because of a substantial change of ownership and control by merger or buyout.

Hence, the first hypothesis to be empirically tested is:

H1: The extent of income increasing (decreasing) earnings management is more pronounced in target firms that have experienced a takeover than in those firms that have not been subject to takeover activity.

This hypothesis assumes that the incentive for earnings management is likely to be strong in the specific circumstances surrounding takeover activity. The test will use a

sample of NZ firms that have been subject to takeover activity (target firms) and a control group of non-takeover firms matched by size and industry²⁶. The effect of firm attributes size, cash flows from operations as well as target activity are included in tests of this first hypothesis. Additional tests address the effect of earnings losses and declines on earnings management. If earnings management has occurred, it should be apparent in the estimated measures of abnormal accruals that reflect the choice of accounting procedures.

²⁶ Details are provided Chapter 4.

3.2.2 CORPORATE GOVERNANCE HYPOTHESES

Directors of target firms are assumed to be sophisticated informed users of accounting information and should be able to constrain earnings management. Vafeas (2000) examines the effectiveness of board structures in monitoring the quality of financial reporting using the fraction of outside directors serving on the board whereas Peasnell, Pope & Young (1999) investigate the relationship between outside directors, board effectiveness and abnormal accruals to assess whether boards constrain earnings management activity. Large boards have been found to be less effective than small boards (Yermack, 1996). Dechow & Skinner (2000) suggest earnings management is more likely to occur in firms with weak governance structures but following Peasnell et al. (1999), this study will test the notion that the inclusion of a larger proportion of independent or outside members of the board of directors significantly reduces the likelihood of earnings management. Board effectiveness can be measured by the fraction of non-executive independent (outside) directors and the presence of an audit committee. Thus the second hypothesis states:

H2: The extent of income increasing (decreasing) earnings management is not related to the proportion of outside directors on the board of directors.

This hypothesis is based on the definition of an outside director that includes all non-employee or non-executive directors that are independent. According to Shivdasani (1993) and Beasley (1996), corporate governance researchers classify outside directors further as either independent directors or grey directors. An independent director is an outside director who has no affiliation with the firm apart from being on the board of directors. A grey director is an outside director who has some non-board affiliation with the firm. Grey directors are a potential source of violation of board independence. The study will attempt to distinguish between outside and grey directors.

Responsibility for oversight of financial reporting is often delegated by a board of directors to an audit committee. According to Pincus, Rusbarsky & Wong (1989), audit committees are seen as monitoring mechanisms that are used voluntarily in high agency cost situations to improve the quality of information between principal and agent. Thus, the existence of an audit committee is an indicator of higher quality monitoring of financial information and should reduce the likelihood of material earnings management. The third hypothesis will examine the effect of the audit committee on the extent of earnings management.

H3: The extent of income increasing (decreasing) earnings management is not related to the presence of an audit committee.

Aspects of ownership structure impinge on monitoring of earnings management. There is the conflict of management interests with those of shareholders where directors hold substantial shareholdings²⁷. Institutional shareholders have the potential to exercise their ownership power although in practice play a passive role in monitoring shareholder-value performance (Healy, 2003). However, in view of increased institutional investment in recent decades, institutional ownership may have a negative affect on earnings management²⁸. Similarly, where the ownership is by executive directors, there is less likelihood of earnings management that implies a negative relationship between executive ownership and monitoring of financial statements by directors (Peasnell et al., 1999). Hence ownership effects on earnings management will be considered as the next hypothesis.

²⁷ Section 140 (2) of the Companies Act 1993 requires the disclosure of directors' interests.

²⁸ Craswell, Taylor and Saywell (1997; 2000, cited in Ramsay et al.) find no evidence of a relationship between the extent of institutional ownership and corporate performance.

H4: Earnings management is not affected by institutional ownership or board ownership.

There is an interesting trend in recent research examining the incentives of managers to avoid earnings losses and decreases (Burgstahler & Dichev, 1997 and Burgstahler & Eames, 2000). The next hypothesis concerning these variables in the context of takeovers states:

H5: Target firms do not differ from control firms with respect to the management of earnings to avoid earnings losses and decreases.

Tests of this hypothesis will also examine the monitoring effect of corporate governance and firm attributes.

Jensen (1988) argues that takeovers serve as the court of last resort and are a means of protecting shareholders when the internal controls fail and the board is slow, clumsy or defunct. In the context of takeovers, the evidence from prior research (Shivdasani, 1993) indicates that both characteristics of directors and ownership structure are significant determinants of the likelihood that a firm is a target of a hostile takeover attempt. Consistent with the notion of non-executive independent directors possessing the necessary incentives and ability to monitor the quality of financial statements, Beasley (1996) finds fraud firms have a lower proportion of non-executive directors than no-fraud firms. Consequently, the next hypothesis addresses the impact of corporate governance mechanisms on NZ firms and states:

H6: Corporate governance monitoring mechanisms in target firms are not different from those corporate governance monitoring mechanisms in control firms.

It is expected that corporate governance features will be weaker in target firms than the control firms. Further, a takeover provides the discipline when the corporate governance mechanisms fail to monitor management's non-profit maximizing activity. Thus income - decreasing accruals may result from uncontrolled management of earnings.

It can also be argued that outside directors of target firms have fewer incentives to monitor management behaviour than directors of control firms. Hence the next hypothesis states:

H7: Directors of target firms have lower levels of remuneration and lower levels of share ownership than directors of control firms.

In summary, the hypotheses address the extent of earnings management and the effect of corporate governance constraints on earnings management in the context of takeovers.

4.0 INTRODUCTION

This chapter addresses the research questions posed in previous chapters and describes the research method used to test the earnings management and corporate governance hypotheses. The first section of the chapter describes the research design, which has three phases. The first phase focuses on the detection of earnings management; the second phase investigates the association between earnings management and various corporate governance mechanisms and the third phase discusses earnings management and corporate governance in relation to takeover activity. Figure 4.1 depicts the research design.

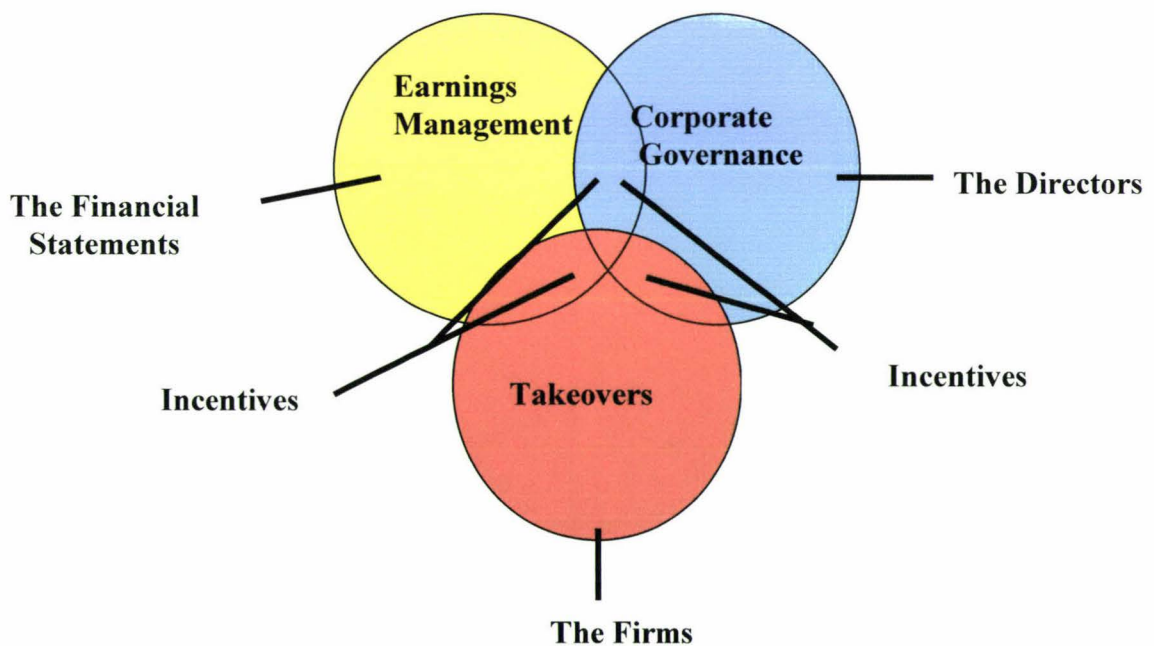


FIGURE 4.1 THE RESEARCH DESIGN

The second section of the chapter describes the sample selection method. Sections three and four of the chapter deal with the methods of data collection and analysis and the final fifth section discusses some limitations of the research methodology.

4.1 RESEARCH DESIGN

4.1.1 DETECTION OF EARNINGS MANAGEMENT

There are many earnings management detection methods described in the literature (Dechow et al., 1995). Accruals-based measures are theoretically appealing because they combine the net effect of numerous recognition and measurement decisions into a single measure to reflect the portfolio nature of income determination (Watts & Zimmerman, 1990). Operating accruals, used as a proxy for earnings management, are opaque in nature and represent a relatively low cost way of manipulating reported income. Total operating accruals consist of managed (discretionary) and unmanaged (non-discretionary) accruals although there is evidence to suggest that the most frequently used techniques to identify discretionary accruals are imprecise due to confounding effects of factors unrelated to earnings management (Guay, 1996; Dechow et al., 1995).

This research takes a longitudinal approach to allow a comparison over time of earnings management activity of firms subsequently exposed to takeover activity and those control firms not subject to takeover. Four discretionary accruals measures of earnings management are used to detect the extent of earnings management in New Zealand. The principal method chosen is based on the method and rationale developed by Peasnell et al., (1999) to enable a comparison of the results obtained from both studies. Peasnell et al. (1999) follow Healy (1996) where estimated discretionary accruals are labelled “abnormal accruals” as the measure of earnings

management. Peasnell et al. (1999) use a modified-Jones model described by Dechow et al. (1995) as it attempts to capture subtle earnings management by recognising that revenue can be manipulated. This model overcomes the weakness in the original Jones (1991) model that assumes revenue to be non-discretionary. Working capital accruals are used instead of total operating accruals because there is likely to be limited use of depreciation accruals to manage earnings (Beneish, 1998).

Thus, following Peasnell et al. (1999, 2000), the research uses the modified-Jones model parameters estimated by the OLS cross-sectional regression model specified as:

$$WC_i = \omega_0 + \omega_1 \Delta REV_i + v_i \quad (1)$$

where

WC_i = working capital accruals for firm i and defined as the change in non-cash current assets minus the change in current liabilities

ΔREV_i = the change in revenue, that is, operating revenue in year t less operating revenue in year $t-1$ for firm i

$\omega_0 + \omega_1$ = regression coefficients

v_i = regression residual for firm i .

Lagged total assets, that is, total asset in year $t-1$ scale all the variables to reduce heteroskedasticity. Consistent with DeFond & Park (1997), the modified-Jones model is estimated cross-sectionally for each firm-year combination to maximize the sample size unlike Peasnell et al. (1999) who use each industry-year combination. There are too few firms in each industry category in New Zealand to use this approach.

Again following Peasnell et al. (1999, 2000), abnormal accruals (AA) are estimated by the modified-Jones model as follows:

$$AA_i = WC_i - [\omega_0 + \omega_1 (\Delta REV_i - \Delta REC_i)] \quad (2)$$

Where $\omega_0 + \omega_1$ are the OLS regression estimates of $\omega_0 + \omega_1$ obtained from equation (1) and ΔREC_i for firm i , is the change in receivables, that is, the net receivables in year t less net receivables in year $t-1$ scaled by total assets in year $t-1$.

In their working paper, Peasnell et al. (1999) also estimate abnormal accruals with an alternative model to the modified-Jones model that they refer to as the “margin” model. In this procedure, the working capital drivers are derived from the link between sales, accruals and earnings. Peasnell et al. (1999) find that working capital accruals can be expressed as the sum of two contribution margins, namely the gross margin on sales and the margin on cash received.

Hence, the second model used in this research is the alternative method for estimating the parameters for abnormal accruals for each firm-year combination. The OLS cross-sectional “margin” regression model is:

$$WC_i = \gamma_0 + \gamma_1 REV_i + \gamma_2 CR_i + \eta_i \quad (3)$$

Where WC_i = working capital accruals as defined in equation (1) and

REV_i = sales or operating revenue at time t

CR_i = cash received or sales revenue less the change in accounts receivable

i = firm

γ_0, γ_1 and γ_2 are regression coefficients and

η_i = the regression residual.

Again, lagged total assets are used to scale the variables to reduce heteroskedasticity.

The estimated values of the coefficients λ_1 and λ_2 reflect the gross margin for the firm-year and the cash margin respectively.

Abnormal accruals using the “margin” model estimates are calculated according to the equation:

$$MAA_i = WC_i - [\hat{\gamma}_0 + \hat{\gamma}_1 REV_i + \hat{\gamma}_2 CR_i] \quad (4)$$

where $\hat{\gamma}_0$, $\hat{\gamma}_1$ and $\hat{\gamma}_2$ are the OLS regression estimates of γ_0 , γ_1 and γ_2 respectively.

According to Dechow et al. (1995), page 199, the strength of the modified-Jones model lies in its ability to capture sales-based earnings management as it does not use current revenues to compute the abnormal accruals. However, Peasnell et al. (1999) find that, relative to the modified-Jones model, the “margin” model is better specified to capture bad debt manipulation and is more effective at detecting expense manipulation unrelated to bad debts. There is evidence to suggest that the model is better specified when cash performance is extreme. The “margin” model substitutes cash receipts in the current period for revenues in the prior period of the modified-Jones model.

Despite apparent weakness in the relatively simple models used to detect earnings management (Dechow, 1995), two of these discretionary accruals models are used in the study to compare the effectiveness of the abnormal accruals models. The third model chosen is the simple Healy (1985) model whereby total accruals comprise two components namely discretionary accruals (DA) and non-discretionary accruals (NDA) written as:

$$TA_{it} = DA_{it} + NDA_{it} \quad \text{where } it = \text{firm year}$$

TA is used as a proxy for DA assuming NDA is constant over time. The total accruals (TA) is calculated according to the formula²⁹:

$$TA_t = \frac{\text{Reported earnings less cash flow from operations in year } t}{\text{Total assets in the year } t-1} \quad (5)$$

where reported earnings equals net income.

A weakness of this method is that TA is a poor proxy for DA if the NDA is not constant over time.

The fourth model used is that of DeAngelo (1986) which utilizes the prior period's TA_{t-1} as a measure of NDA. The equation $TA = DA + NDA$ becomes

²⁹ Erickson & Wang (1999) also use this formula. In NZ, CFO data is extracted directly from financial statements prepared in accordance with SSAP-10 and FRS-10 Statement of Cash Flows.

$TA_t = DA_t + TA_{t-1}$ so the discretionary accruals are the difference in total accruals over two consecutive periods computed accordingly as:

$$DA_t = TA_t - TA_{t-1} \quad (6)$$

are chosen to provide comparative indicators of earnings management and test the first hypothesis.

Once the proxy measures of earnings management are determined, the three measures of abnormal accruals are regressed on takeover activity and other firm-specific variables to ascertain whether or not the variables³⁰ can explain the extent of earnings management. The regression equation for this part of the research is specified as:

$$AA \text{ (or } TA \text{ or } DA) = \alpha + \beta_1 \text{ TARGET} + \beta_2 \text{ SIZE} + \beta_3 \text{ CFO} + \beta_4 \text{ INCRE} + \beta_5 \text{ LOSS} + v$$

4.1.2 CORPORATE GOVERNANCE FACTORS

Cadbury (2002) chaired the Committee on the Financial Aspects of Corporate Governance and produced the Cadbury Report (1992) referred to by Peasnell et al. (2000). The committee produced a Code of Best Practice³¹ that addresses

1. The responsibility of executive and non-executive directors to review and report on performance to shareholders and other financially interested stakeholders. Board size and composition (insiders and outsiders); experience and remuneration and the Chairman's role are factors contributing to a quality board.
2. The case for an audit committee of the board
3. The prime responsibility of auditors and the extent and value of the audit

³⁰ Descriptions of these variables appear in the following section 4.1.2.

³¹ Released in the UK in 1998 and discussed in Chapter 2.

4. The links between shareholders, boards and auditors.

It is these features of corporate governance that have influenced the present research design.

Linear regression models are used to test the hypotheses H2, H3 and H4 on the role of outside (non- executive or independent) directors, audit committees and share ownership affecting earnings management. Abnormal accruals (AA) are regressed on the proportion of outside directors and an indicator variable for the presence or absence of an audit committee and a “Big 4” audit firm.³² A large set of control variables are included too to reflect additional corporate governance mechanisms and other factors suspected of influencing accrual behaviour. The tests are based on the pooled regression equation set out below:

$$AA_i = \alpha + \beta_1 OUT_i + \beta_2 AC_i + \beta_3 AUD_i + \delta_1 BRDSIZE_i + \delta_2 FGREY_i + \delta_3 BRDOWN_i + \delta_4 EDOWN_i + \delta_5 INSTOWN_i + \delta_6 SIZE_i + \delta_7 LEV_i + \delta_8 CFO_i + \varepsilon_i \quad (7)$$

where

AA_i = abnormal accruals, the dependent variable computed by equation (2) and (4)

α, β, δ = regression coefficients

i = firm-year observation

ε = residual error term

The explanatory or control variables used are:

- *Directors.* Directors are partitioned into independent or outside directors and affiliated directors termed grey directors assumed to be not entirely

³² For simplicity, Coopers & Lybrand are combined with Price Waterhouse as PricewaterhouseCoopers to reflect the current merger situation.

independent of management. The main variable of interest, OUT, represents the percentage of the total number of directors considered to be outside or independent non-executive directors. Vafeas (2000) defined outside directors as those directors who are not active or retired firm employees, their relatives or those employees of subsidiary firms. Grey directors are those directors who have direct business ties to the firm such as lawyers, financiers, and management consultants. The board size variable excludes the company secretary. Therefore two measures of board independence are used together with the size of the board and the status of the chairman of the board³³.

OUT = number of outside board members divided by total board size

FGREY= number of grey board members (neither executive nor independent directors but are in some way affiliated to the firm) divided by total board size

BRDSIZE = total number of board members

CHAIR = 1 if the Chairman of the board of directors is also the Chief Executive otherwise 0.

- *Size* (total assets in \$million is the proxy for firm size)

SIZE = 1 for large companies with assets over \$370 million, 2 for medium sized companies with assets between \$75-370 million and 3 for small sized companies with assets <\$75 million.

- CFO = cash flow from operations obtained directly from the Statement of Cash Flows in annual reports
- *Leverage or capital structure.* Prior earnings management studies demonstrate that managers have increased incentives to make income-increasing accruals to

³³ Prior to implementation of good governance principles, some NZ companies had boards dominated by entrenched executives for long periods notably Fletcher Challenge and BIL (Healy, 2003).

avoid the costs of debt covenant violations or to obtain less costly access to capital. DeFond & Jiambalvo (1994) find a positive correlation between leverage and discretionary accruals. The measure of leverage is included to confirm the relationship with abnormal accruals.

$$\text{LEV} = (\text{Long term debt} + \text{short term debt}) / \text{total assets}.$$

- *Ownership structure.* Variables in this group refer to share ownership by directors (in the traditional role of monitor) and shares owned by management and institutions. Ownership is restricted to ordinary beneficial shareholdings where the information is available. Family or associated persons' shareholdings are included if they related to a particular director but directors' non-beneficial shares either held in employee share purchase schemes or options are not included. In order to control for possible determinants of earnings management relating to aspects of a firm's governance structure, the regression model includes a proxy for managerial ownership (EDOWN). This variable is included to reflect the separation of ownership and control and to act as a proxy for the extent to which the interests of managers and shareholders conflict (Peasnell et al., 1999). There is an earnings management incentive when the management shareholding is tied to the firm's share performance. If strong corporate governance is in place, managers may have less incentive or opportunity to manipulate earnings. The variable INSTOWN (the fraction of shares held by institutional shareholders) is included to control for the special monitoring role attributed to institutional shareholders. Thus the ownership control variables are:

BRDOWN = fraction of equity owned by all directors.

EDOWN = fraction of equity owned by executive directors

INSTOWN = fraction of equity owned by institutional investor.

- *Audit firm and quality.* Audit quality can be expressed according to firms audited by "Big 4" and non- "Big 4" audit firms. Earnings management firms may be less

likely to be audited by one of the “Big 4” firms so the brand name effect is explored in relation to earnings management. The presence of a brand name auditor could create an environment that permits less manipulation so it is expected to see more “Big 4” firms as monitors for non-earnings management firms. The presence of an Audit Committee variable is included as another governance mechanism to constrain earnings management. Audit opinion data are also collected for descriptive purposes.

AC = 1 if audit committee exists otherwise 0

AUD = 1 if firm is audited by a “Big 4” auditor otherwise 0

Variations of the basic regression model test other aspects of earnings management.

- *Earnings Loss and Earnings Decrease* Burgstahler & Dichev (1997) suggest managers will avoid reporting earnings declines and losses so this study incorporates two additional control variables using a positive measure for decline that is measuring an earnings increase:

INCRE = 1 where earnings in year t is greater than earnings in year $t-1$
otherwise 0 if earnings decline in year t .

LOSS = 1 if earnings is less than zero otherwise 0 if there is a net surplus.

- *Takeover activity*

The TARGET variable representing takeover activity (discussed in the next subsection) is included in the regressions as it is expected that this variable could influence accrual behaviour. In order to avoid potential ambiguity in abnormal accruals, the target (takeover activity), earnings increase and earnings loss variables are used to partition the analyses on the incentives to manage earnings. When incentives are strong, it is expected that abnormal accruals reflect income-increasing earnings management (Peasnell et al., 1999).

The discretionary accruals measures of earnings management are also regressed on the control variables by substituting TA and DA for AA in the regression models.

Some control variables used in Peasnell et al., (1999), are considered inappropriate for this study. An industry variable is excluded from the regression models, as there are too few NZ companies in each industry grouping³⁴. Also excluded from the regressions are two further potential variables, namely, BLOCK³⁵ = 1 if one external shareholder holds more than 10% of the outstanding equity and FX = 1 if a company is listed offshore otherwise 0 if listed only in NZ. The listing status had been considered an important variable to explain variability in the extent of earnings management because multiple listed companies may have incorporated aspects of foreign regulation in their financial statements (Cooke, 1992). The audit opinion too is considered not relevant to this study.

³⁴ See Table 5.1 in Chapter 5.

³⁵ Also used by Beasley (1996).

4.1.3 TAKEOVER ACTIVITY

The next phase of the research design examines the estimated abnormal accruals and discretionary accruals measures in a situation where earnings management is expected to occur. Erickson & Wang (1999) find an incentive to manage earnings upwards by target firms (those firms subject to takeover or merger activity) to increase the transaction price. Accordingly the sample of firms is partitioned into two groups of firms:

1. Target firms are those firms subject to takeover or merger or buyout activity and
2. Control firms are firms not subject to activity in the study period.

As a check on the independence of the two groups of firms (matched for size), 2-independent means t-tests, non-parametric Mann – Whitney U tests are conducted. In addition, a cross-sectional regression model is constructed to test the relationships between earnings management (three accruals measures), the board of director composition (corporate governance factors) and the occurrence of takeover activity. Beasley (1996) uses a similar conditioning approach although he uses a logit regression model for firms subject to fraud. In this study, the dependent variable TARGET is dichotomous. Thus the basic regression equation is written:

$$\text{TARGET}_i = \alpha + \beta_1 \text{AC}_i + \beta_2 \text{OUT}_i + \beta_3 \text{BRDSIZE}_i + \beta_4 \text{INCRE}_i + \beta_5 \text{LOSS}_i + \varepsilon_i \quad (8)$$

And the expanded model is:

$$\begin{aligned} \text{TARGET}_i = & \alpha + \beta_1 \text{OUT}_i + \beta_2 \text{AC}_i + \beta_3 \text{AUD} + \beta_4 \text{BRDSIZE}_i + \beta_5 \text{FGREY} \\ & + \beta_6 \text{SIZE}_i + \beta_7 \text{LEV}_i + \beta_8 \text{CFO}_i + \beta_9 \text{INCRE}_i + \beta_{10} \text{LOSS}_i + \beta_{11} \text{BRDOWN}_i + \\ & \beta_{12} \text{EDOWN}_i + \beta_{13} \text{INSTOWN}_i + \varepsilon_i \end{aligned} \quad (9)$$

where

TARGET = a dummy variable with value of one for a takeover target firm and a value of zero otherwise.

Control variables are the same as those described in section 4.1.2

i = firms 1 to 50

ε_i = residual error term

Supplementary non-parametric tests are explored to further explain earnings management and corporate governance characteristics of both target and control firms in this study. Definitions of variables are summarised in Table 4.1.

TABLE 4.1**DEFINITIONS AND PREDICTED SIGNS OF VARIABLES**

Variable	Definition	Expected Sign
AA	Abnormal Accruals Computed from the model $WC_{it} - E(WC_{it})$	Dependent variable
OUT	Fraction of outside or non-executive (independent) board members excluding grey directors $NED_{it}/BRDSIZE_{it}$	-
BRDSIZE	Total number of board of directors excluding company secretary	+
FGREY	Fraction of grey (affiliated) board members $GREY/BRDSIZE$	+
BRDOWN	Fraction of equity owned by all directors $BRDSHARE_{it}/TSHARE_{it}$	-
EDOWN	Fraction of equity owned by executive directors $ESHARE_{it}/TSHARE_{it}$	-
INSTOWN	Fraction of equity owned by institutional investors	-
TARGET	Indicator variable equals 1 if firm subject to Takeover otherwise equals 0 if control firm	+
CFO	Log10 of Cash flow from Operations	-
SIZE	Firm size proxied by total assets (LGASSETS) in \$000s	+
LEV	Leverage or capital structure measured by Total Debt/ASSETS ratio	+
CORP	Statement of Corporate Governance Indicator variable equals 1 if there is a statement otherwise 0. This variable is a proxy for presence of a Remuneration Committee	-
AC	Audit Committee Indicator variable equals 1 if firm discloses existence of an audit committee otherwise 0	-

AUD	Auditor Indicator variable equals 1 if firm audited by “Big 4” otherwise 0	-
LOSS	Earnings loss Indicator variable equals 1 if earnings is less than zero otherwise surplus equals 0	-
INCRE	Earnings increase Indicator variable equals 1 if earnings in year t is more than earnings in year $t-1$ otherwise if earnings decline the earnings increase variable equals 0	+
CHAIR	Chairman of Board is also CEO Indicator variable equals 1 if chairman is CEO otherwise 0	-
FX	Foreign Exchange Indicator variable equals 1 if firm is listed offshore otherwise 0	-
TA_t	Total Accruals calculated from the equation: $= \frac{\text{Reported earnings less cash flows from operations in year } t}{\text{Total assets in the previous period in year } t-1}$	
DA_t	Discretionary accruals calculated from the equation: $TA_t - TA_{t-1}$	

WC_{it} = Working capital accruals (Δ non-cash current assets less Δ current liabilities)/lagged total assets $t-1$

$E(WC_{it})$ = Expected working capital accruals computed from the modified-Jones model

NED = Number of non-executive directors

BRDSHARE = Total number of ordinary shares owned by all directors

$ESHARE_{it}$ = Total number of ordinary shares owned by executive directors at year end

$TSHARE_{it}$ = Total number of ordinary shares at year end

GREY = Total number of grey or affiliated directors

SIZE = 1 for large companies with assets over \$370 million, 2 for medium sized companies with assets between \$75-370 million and 3 for small sized companies with assets <\$75 million.

ASSETS = Total assets at year end

There are too few NZ companies in each industry grouping for an industry variable to be included in the regression. Similarly, as only six companies in the entire sample are listed on the Australian or New York Stock Exchanges, the FX control variable is withdrawn from the regression.

4.2 SAMPLE SELECTION

The sample consists of 50 of the 140-229 publicly listed New Zealand companies³⁶ that survived for the six-year study period. Financial institutions (banks and insurance companies) are excluded from the sample as these firms are subject to different legislative regulations³⁷. The sample is a self-selection of 25 target firms that have been subject to takeover or merger activity since 1998-2002 and 25 control firms that have not been subject to takeover activity (Appendix 2). Acquiring firms are excluded from this research. The source for identifying the sample is the New Zealand Stock Exchange (NZSE). Some target firms had been delisted from the NZSE whilst others continue to trade under new ownership structures. The sample is limited to publicly listed companies because only publicly available information is examined in annual reports prepared in accordance with requirements of the FRA 1993, Companies Act 1993 and the NZ Financial (accounting) Reporting Standards (ICANZ) for issuer companies. The target companies are selected from the register of publicly listed companies at either the takeover date or at the date of delisting for reasons of outright sale or takeover. Target firms are only included in the study if the firm's financial statement data is available for six fiscal years preceding the year of takeover. Each target firm is then matched with a non-takeover firm of similar size, proxied by total assets, and industry group where possible. The control firms are chosen on the basis of firm size to match the target firm in the year of the takeover activity. The control firms are only included if they had not been involved in takeover or merger activity as either acquirers or as targets in the previous six years and their annual financial reports match the same six-year time periods as the target firms. The study has not distinguished cases of hostile takeover activity.

³⁶ The terms "firms" and "companies" are used interchangeably.

³⁷ For example, the financial reporting standards: FRS 33, 34 and 35 pertain to financial institutions and life insurance companies. Legislation examples are the Life Insurance Act 1908 and the Bank of NZ Act 1988. Banks in NZ are subject to scrutiny by the Reserve Bank of NZ.

The six-year study period is chosen to allow examination of annual reports both prior to and after the introduction of mandatory disclosure of corporate governance policies, practices and processes according to NZSE rule 10.5.3(h) in 1998. Data from firms over the six year period is necessary to provide five consecutive years of computed variables as many of these involve changes (in revenues or receivables) or are scaled by lagged total assets.

4.3 DATA COLLECTION

Qualitative and quantitative data is extracted manually from publicly available annual reports of each company for six consecutive years that includes the year of takeover. The procedure ensures that all firms have at least five observations (250 firm year combinations) for each variable. Consolidated accounting data is used although in a group of companies it could be possible for a profitable company or division to transfer earnings to a less profitable company or division and so understate any significant earnings management findings. The study period is between 1993-2002. Financial data are extracted from the financial statements and entered either directly on the computer data file or on worksheets (see example in Appendix 3) for subsequent data entry. Portions of the raw data are transformed into years prior to takeover year “t” as “t-1, t-2, t-3, t-4, t-5” rather than calendar year for comparative analysis. Other data files are created to include estimated accruals and control variables. Data is extracted also from the directors’ reports and disclosures of directors’ interests provide the necessary corporate governance details. Details of grey directors are found in various places in annual reports such as related party transactions. The annual reports are sourced from Massey University, the National Library of New Zealand, Wellington City Library and The Open Polytechnic of New Zealand.

4.4 DATA ANALYSES

Microsoft Excel is used for graphs and SPSS version 11.5 is used to summarise and analyse the data obtained from annual reports. Statistical tests performed are:

- Descriptive statistics
- Trend analysis
- Non – parametric tests and t-tests for two independent samples
- Multiple regression results.

Independent-samples t-tests for means of total assets are performed to confirm that target and control firms are correctly matched for size. Similar tests are performed on means of total assets by size groups of firms, namely, small, medium and large firms to establish the differences in size.

4.5 LIMITATIONS

The main limitation is the small sample size determined by the small number of suitable firms listed on the NZSE during the study period. The time period is constrained too by the fact that information on directors and their shareholdings is not disclosed prior to 1994 and even in the period 1994-1997 a company may have had an Audit Committee but the fact is not disclosed. A further limitation of this study is that no economic indicators pertaining to the economic conditions that prevailed in the mid 1990's were collected which might otherwise explain some trend data.

5.0 INTRODUCTION

This chapter provides descriptive statistics for the sample (target and control) firms and presents and discusses the empirical results of the data analyses and statistical tests of the earnings management and corporate governance hypotheses, described in chapter three. Correlations and regression results are tabled. Additional tests of earnings management in relation to takeover activity are discussed. There are comments too on relevant graphs of data trends (seen in Appendix 4).

5.1 SAMPLE DESCRIPTIVE STATISTICS

The sample of firms examined in this study is listed in Appendix 2 which also lists the breakdown of the sample into matched target and control firms³⁸. The annual reports generally contain images of impassive looking directors, but an example of a happy looking board of a target company³⁹ is shown in Plate 2. Whilst gender issues are unimportant for this study, it is observed that there is an overwhelming predominance of men in the corporate director scene in the sample firms. Very few women appear as directors - less than 5% of all directors. Examples of some Statements of Corporate Governance extracted from annual reports are included in Appendix 5 to show the range of detail from concise to comprehensive disclosure.

³⁸ One target firm and eighteen control firms feature in the 2002 list of 64 best NZ companies on the NZSE (Mallinson, 2002).

³⁹ PDL Holdings Ltd (1999) - a family business prior to takeover. Copyright permission was sought but there was no response from the acquiring firm.

Tables 5.1 and 5.2 below report the frequency distribution of the sample firm characteristics. There are few firms in the sample in any one industry-group apart from 22% of firms considered to be in the primary sector, hence the exclusion of an industry variable in the regression models⁴⁰. It is not possible in the NZ context to match all the selected target firms with control firms by industry and size given such a small number of firms in each industry category. The majority of takeovers occur in 1999 which is the event year for 44% of the entire sample. There are fewer large-sized firms (20%) than either small or medium-sized firms. In the main, 22% of target firms (firms subject to takeover activity) use Ernst & Young as their auditor and only 10% of the entire sample are not audited by one of the “Big 4” audit firms. The most common balance date is 30 June. Overall, 14 % of the entire sample for all firm-years ($n = 262$) experienced an earnings loss and 43% of the sample for all firm years ($n = 223$) experienced an earnings decrease.

⁴⁰ Accrual components based on the industry of a sample firm are considered a source of earnings management by Erickson & Wang (1999) who find manufacturing firms experience inventory based earnings management, prior to mergers. Similar income increasing accruals using changes in accounts payable occur in non manufacturing firms suggesting service firms delay expenditures to manage working capital accruals.

TABLE 5.1

SUMMARY OF FIRMS BY INDUSTRY

Industry	Number of firms	%
Apparel manufacture	4	8
Chemicals/ pharmaceuticals	2	4
Communications/technology	2	4
Diversified industries	1	2
Food/ beverage	5	10
Investment property	4	8
Manufacturing	8	16
Oil/gas/minerals/electricity	3	6
Primary sector (agriculture)	11	22
Retail	5	10
Transport	5	10
Total	50	100

TABLE 5.2**FREQUENCY DISTRIBUTION OF FIRM PARTICULARS**

	Number of Target Firms	Number of Control Firms	All Firms	% All Firms
Year of Event				
1998	1	1	2	4
1999	11	11	22	44
2000	5	5	10	20
2001	6	6	12	24
2002	2	2	4	8
Size				
Small	9	9	18	36
Medium	11	11	22	44
Large	5	5	10	20
Balance Day				
31 March	6	7	13	26
31 May	1	1	2	4
30 June	8	10	18	36
31 July	1	1	2	4
1/3 August	1	1	2	4
31 August	1	1	2	4
30 September	2	3	5	10
31 October	1	0	1	2
31 December	4	1	5	10
Auditor				
Not "Big 4" Firm	2	3	5	10
Ernst & Young	11	5	16	32
Deloitte Touche Tohmatsu	6	4	10	20
KPMG	1	6	7	14
PricewaterhouseCoopers	5	7	12	24
N	25	25	50	100

As seen in Table 5.3, in the takeover event year, mean remuneration levels for non-executive directors (NEDs), excluding the board chairman, are lower in target firms compared with control firms across all three categories of firm size. Larger firms provide more remuneration for NEDs than do medium-sized firms and NEDs in small-sized firms receive the lowest level of remuneration. The differences in mean remuneration levels between firm sizes are significant at $t = -.63747$ ($p < .0005$) but the means of remuneration levels for all target and all control firms are not significantly different. This insignificant difference is confirmed by a non-parametric Mann Whitney U test (Z statistic = $-.896$, $p = .370$). Directors of target firms therefore have possibly less incentive to monitor their firm's performance than directors of control firms and hence allow their firms to be taken over⁴¹. Healy (2003), page 161, states that a non-executive directorship is a real job and should be compensated accordingly. 23% of NEDs in NZ have an accounting background, 21% of NEDs come from the agricultural sector and 12% have a background in law or financial services. NEDs are no longer retired academics, politicians, sporting heroes or friends paid an honorarium. Healy believes the current levels are too low for what is expected of an NED by investors or reflect very little effort because they lack relevant business experience. Healy believes too that the appointment of high quality NEDs introduces objectivity in to the success of a business and sends a positive signal of confidence to all the stakeholders. Directors' pay is still on the Corporate Governance agenda in the UK according to Cadbury (2002) because the remuneration can only be set by boards themselves, shareholders or by regulation. Cadbury (2002) finds a problem with attempting to regulate director's pay. Directors can refuse the appointment or the Government will trim any excessive reward by taxation. It is not the role of Government to settle directors' pay levels hence remuneration committees made up of independent board members is the most satisfactory way to do this.

⁴¹Research on directors wealth incentives to monitor firm performance generally relate to their equity holdings according to Shivdasani (1993) and so if they have a large equity stake, they are more likely to accept a takeover bid that raises the share value, so aligning their interests with other shareholders (Merrett & Houghton, 1999).

58% of firms (29) in the sample of firms disclose the existence of a remuneration committee in the event year which is comprised mainly of two or three independent board members. Generally, the Chairman is on this committee which meets mostly twice a year or as the need arises.

TABLE 5.3
SUMMARY OF REMUNERATION LEVELD FOR NEDs (EXCLUDING CHAIR) IN YEAR T

NED Remuneration		Target firms	Control firms	t-test (sig)	All firms
Small	Mean	\$17,555	\$18,357	-.921	\$17,956
	Std Dev	\$5,126	\$6,236	(.361)	\$5,553
	Median	\$15,000	\$18,000		\$16,527
Medium	Mean	\$22,240	\$27,000	-1.394	\$24,620
	Std Dev	\$5,031	\$10,149	(.179)	\$8,187
	Median	\$24,000	\$26,000		\$25,000
Large	Mean	\$41,940	\$47,100	-.551	\$44,520
	Std Dev	\$8,385	\$19,191	(.597)	\$14,224
	Median	\$40,000	\$50,000		\$45,000
All firms	Mean	\$24,493	\$27,908	-.921	\$26,200
	Std Dev	\$10,715	\$15,119	(.362)	\$13,083
	Median	\$23,330	\$25,000		\$25,000

Target firms are matched with control firms⁴² by size proxied by total assets as described in Chapter 4. Revenue is used as a supplementary test for size. Table 5.4 displays the breakdown of the matching of target and control firms by total assets and revenue in the year prior to the takeover event. As expected, the results of independent-samples t-tests show that there are no significant differences between the means of total assets and revenue for both groups of firms in terms of size. However, there are significant differences between means of total assets for small, medium and large sized firms at the $p < .005$ level on a two-tailed test. Thus, these significant between firm-size differences confirm the appropriate choice of firm-size criteria.

⁴² List of firm details is in Appendix 2.

TABLE 5.4

MATCHING OF TARGET FIRMS SUBJECT TO TAKEOVER ACTIVITY AND CONTROL FIRMS IN YEAR PRIOR TO EVENT (TAKEOVER OR MERGER).

		Target firms N=25	Control firms N=25	t-test ^b	All firms N=50
		\$	\$		\$
Total Assets	Mean	612,845.2	\$616,679.2	0.9935	\$614,762.2
	Std Dev	1,533,531	1,761,937,793		1,634,747
	Median	107,875	116,460		112,167.5
	Minimum	9,577	9,733		9,577
	Maximum	6,807,000	8,449,000		8,449,000
Total Assets^a (Small N=9)	Mean	29,372.87	40,381.22	0.3294	34,877.04
	Std Dev	23,782.64	22,629.95		23,221.64
	Median	16,542	42,144		32,291
	Minimum	9,577	9,733		9,577
	Maximum	68,233	73,232		73,232
Total Assets (Medium N=11)	Mean	191,904.5	168,152.2	0.5279	179,518
	Std Dev	97,920.28	73,550.11		86,071.49
	Median	137,678	145,906		141,792
	Minimum	85,293	74,421		74,421
	Maximum	365,271	287,062		365,271
Total Assets (Large N=5)	Mean	2,589,165	2,641,955	0.9797	2,615,560
	Std Dev	3,093,213	3,490,345		2,991,387
	Median	1,015,727	608,371		812,049
	Minimum	426,721	372,854		372,854
	Maximum	6,807,000	8,449,000		8,449,000
Revenue	Mean	434,573.8	404,844.8	0.8892	418,709.3
	Std Dev	832,499.86	658,346.6		742,946.1
	Median	88,660	141,254		104,324.5
	Minimum	4,503	6,616		4,503
	Maximum	3,498,000	2,930,000		3,498,000

^a Size criteria are Total Assets <\$75,000 for small firms, Total Assets \$75,000 - \$370,000 for medium sized firms and Total Assets >\$370,000 for large firms.

^b There are no significant differences between Total Assets for the target and control firms. However, results of t-tests between small and medium Total Assets and medium and large Total Assets in target firms are 6.396 (significantly different at $p < .0005$) and 3.659 (significantly different at $p < .005$). There are no significant differences between target and control firms with respect to size.

5.2 EARNINGS MANAGEMENT

The first sub-section describes the three accruals models used for estimating earnings management. Results of tests of the earnings management hypothesis are presented in sub-section 5.2.2 and 5.2.3 and are discussed in order to ascertain the extent of earnings management by NZ listed companies.

5.2.1 DESCRIPTIVE STATISTICS FOR ACCRUALS MEASURES OF EARNINGS MANAGEMENT

The first regression equation $WC_i = \omega_0 + \omega_1 \Delta REV_i + v_i$ (1) used to determine the estimation parameters of the modified -Jones model yields the coefficient on ΔREV (ω_1) as .0162 for 250 firm-year combinations and is insignificantly different from zero ($p = .328$). This is comparable to Peasnell et al.(1999) who obtain $\omega_1 = .017$ ($p = .163$). The ω_0 coefficient is .0108 ($p = .166$) but the R^2 is 3% whereas Peasnell et al. (1999) obtain an R^2 of 17% for his larger sample size of 1271 firm-years. The Pearson correlation coefficient between lagged working capital and lagged change in revenue is $r = .056$ ($p = .164$) suggesting a weak relationship.

The third regression equation, $WC_i = \gamma_0 + \gamma_1 REV_i + \gamma_2 CR_i + \eta_i$ (3), used to provide estimates for the “margin” model provides coefficients: $\gamma_0 = .0020$; $\gamma_1 = .0019$ (on REV) and $\gamma_2 = .0042$ (on CR_i). R^2 is 5%. The Pearson correlation statistics between lagged working capital and lagged revenue and lagged cash received is $r = .017$ ($p = .262$) and $r = .037$ ($p = .382$) respectively and signify a poor relationship. These results differ so markedly from Peasnell et al. (1999) who obtain R^2 of 30% and $r = .266$ and $r = -.281$ for γ_0 and γ_1 respectively that the “margin” model is abandoned for this research, especially since the modified-Jones model has proven advantages in detecting revenue based earnings management. Thus, for this research, three

abnormal accruals measures are used, namely: Abnormal Accruals, Total Accruals and Discretionary Accruals computed by:

1. the modified-Jones model, (equation 2)

$$AA_i = WC_i - [w_0 + w_1 (\Delta REV_i - \Delta REC_i)]$$

2. Total accruals according to the Healy model (equation 5)

$$TA_t = \frac{\text{Reported earnings less cash flow from operations in year } t}{\text{Total assets in the year } t-1}$$

3. Discretionary accruals according to the DeAngelo model (equation 6)

$$DA_t = TA_t - TA_{t-1}$$

are summarised in Table 5.5. The pooled abnormal accruals for all firm-years for all three models are used in the corporate governance regressions with the results discussed in the next section.

Although the cross-sectional method helps to maximize the sample size there is a limitation whereby the method ignores possible reversals of abnormal accruals from prior periods and reduces the effectiveness of the empirical tests to detect earnings management (Peasnell et al., 2000).

TABLE 5.5

DESCRIPTIVE STATISTICS FOR ACCRUALS MEASURES OVER TIME

Year	t-5	t-4	t-3	t-2	t-1	t	All firm-year measures
AA							
Mean	-.0120	-.0198	.0016	-.0211	.0279	.0046	-.0017
Std Dev	.0809	.1925	-.0041	.1339	.1111	.1086	.1320
Median	-.0269	.0066	.1220	-.0067	.0099	-.0065	-.0019
TA							
Mean	-.0206	.0291	-.0392	-.0499	-.0633	-.0129	-.0270
Std Dev	.0655	.2985	.0674	.0924	.3159	.1246	.1548
Median	-.0134	-.0054	-.0378	-.0487	-.0196	-.0195	-.0246
DA							
Mean	-.0287	.0069	-.0679	-.0116	-.0097	.0397	-.0098
Std Dev	.1297	.0977	.3159	.0889	.1302	.1825	.1883
Median	-.0345	.0042	-.0196	-.0116	-.0012	.0107	-.0021
N	25	48	50	50	50	50	262

The mean values of three accruals measures are displayed in Appendix 4, Graph 1, for easier trend analysis. The means of all firm-year values of AA and DA are not significantly different from zero ($p = .839$ and $.438$ respectively) but the mean of the all firm-year value of TA is significantly different from zero ($p < .005$). A similar result of one sample t-tests occurs for the year prior to event (t-1) where the mean value of TA_{t-1} is significantly different from zero ($p < .0005$). The mean value of AA_{t-1} is slightly different from zero ($p = .100$). But in the event year, all three measures of accruals (AA_t , TA_t and DA_t) are insignificantly different from zero ($p =$

.766, .468, .130 respectively). Overall, the results suggest that the TA model for all firm-year observations provides a stronger measure of earnings management than the AA and DA models.

The means of all firm-year abnormal accruals for the three models are consistently negative, suggesting that earnings increasing strategies have occurred over the five-year period. The fact that the models produce some positive abnormal or discretionary accruals in period (as in the event year t), is evidence of possible income-decreasing earnings management in the AA and DA models, indicating that earnings management is not uniform. The sign differences between accruals measures for the years t and $t-1$ are expected since any earnings management associated with takeover or merger activity is unlikely to be uniform over the prior five years. Although the cross-sectional method helps to maximize the sample size there is a limitation whereby the method ignores possible reversals of abnormal accruals from prior periods and reduces the effectiveness of the empirical tests to detect earnings management (Peasnell et al., 2000).

Further comparative analysis of accruals measures, now partitioned by takeover activity for all firm-years and for the event and the prior-to-event years, show no significant difference. However there are some sign differences. The control firms have positive abnormal accruals (AA) for years t , $t-1$ and overall, whereas the target firms have negative abnormal accruals in just the event year t and overall. The pattern is repeated for the TA model only in year t . These results are listed in Table 5.6. Similar sign results are obtained by Perry & Williams (1994) with management buyout firms producing negative abnormal accruals but significantly different to zero, whereas their control firms have positive abnormal accruals but not significantly different to zero, providing stronger evidence of earnings management by target firms.

In this study, although there are no significant differences between target and control firms with respect to the three abnormal accruals measures, there are differences in the signs of the mean values, as mentioned earlier. One possible explanation of this phenomenon is that the negative mean values of the TA and DA measures may reflect the trend in declining performance in terms of net income⁴³ rather than any earnings management given the method of calculating these two accruals measures. The negative abnormal accruals however for all firm-year observations are more likely to reflect income-increasing earnings management by target firms for all firm-year observations as well as the event year observations.

⁴³ See Appendix 4, Graph 2.

TABLE 5.6

COMPARATIVE STATISTICS FOR THREE ACCRUALS MEASURES				
(ALL FIRM-YEAR MEASURES AND THOSE FROM EVENT YEAR AND PRIOR YEAR)				
PARTITIONED BY TAKEOVER ACTIVITY				
	Target	Control	t-test (significance)	Mann-Whitney U Z statistic (significance)
AA				
Mean	-.0153	.0124	1.708	-1.155
Std Dev	.1284	.1346	(.089)	(.248)
N	133	129		
AA_t				
Mean	-.0137	.0229	1.199	
Std Dev	.0998	.1158	(.239)	
N	25	25		
AA_{t-1}				
Mean	.0246	.0311	.205	
Std Dev	.0668	.1439	(.838)	
N	25	25		
TA				
Mean	-.0236	-.0304	-.362	-.899
Std Dev	.1915	.1097	(.718)	(.369)
N	133	140		
TA_t				
Mean	-.0247	.0060	.827	
Std Dev	.1372	.1144	(.407)	
N	22	25		
TA_{t-1}				
Mean	-.0415	-.0879	-1.476	
Std Dev	.0635	.1423	(.147)	
N	22	25		
DA				
Mean	-.0109	-.0880	.0840	-1.047
Std Dev	.2252	.1477	(.933)	(.295)
N	107	117		
DA_t				
Mean	.0167	.0673	.925	
Std Dev	.1633	.2118	(.360)	
N	22	25		
DA_{t-1}				
Mean	-.0079	-.0207	-.360	
Std Dev	.0624	.1647	(.721)	
N	22	25		

5.2.2 EARNINGS MANAGEMENT HYPOTHESIS

In order to ascertain the extent of earnings management by NZ firms and answer the first research question “Do target companies manipulate their earnings prior to takeover or merger activity?” regressions of the three measures of abnormal accruals are run according to the basic equation⁴⁴:

$$AA \text{ or } TA \text{ or } DA = \alpha + \beta_1 \text{ TARGET} + \beta_2 \text{ SIZE} + \beta_3 \text{ CFO} + \beta_4 \text{ INCRE} + \beta_5 \text{ LOSS} + v$$

Results of various regressions⁴⁵ according to event year or all firm-years are displayed in Tables 5.7, 5.8 and 5.9.

TABLE 5.7

**REGRESSION OF ABNORMAL ACCRUALS ON FIRM-SPECIFIC CONTROL VARIABLES
FOR THE EVENT YEAR t**

Variable	AA t Coefficient (Sig)	TA t Coefficient (Sig)	DA t Coefficient (Sig)
Intercept	-.013 (.917)	.048 (.730)	.310 (.142)
TARGET	-.033 (.328)	-.037 (.372)	-.058 (.295)
SIZE	-.008 (.824)	.051 (.211)	.004 (.952)
CFO	.019 (.513)	-.072 (.021)	-.666 (.178)
R ²	.044	.149	.110
F	.614	2.326	1.652
Significance	.610	.089	.193
N	50	50	50

In the takeover event year t , controlling for the variables TARGET, SIZE and CFO only the Healy TA model has some significance ($p < .10$) with cash flows from

⁴⁴ Descriptive statistics for these independent variables used in this earnings management regression model appear in Table 5.10 in section 5.3 on corporate governance..

⁴⁵ All regression assumptions were checked.

operations having a significant ($p < .05$) coefficient. It is interesting to note that the coefficient signs for TARGET for all three models are negative in the year of takeover. A target firm is possibly unaware of the potential takeover until the acquirer firm starts negotiations hence the insignificant regression results for this variable for the event year. Two extra firm-specific variables are added to the regression model to further test the earnings management hypothesis for all firm-year observations. Any earnings management by the target firm immediately prior to takeover activity is unlikely to affect the acquirer firm's decision to proceed with a takeover but possible earnings management over a longer prior period may have produced a pattern of earnings that signal a potential target firm. Further hierarchical or stepwise regressions using all firm-year observations address the earnings management hypothesis and produce the results reported in Table 5.8.

TABLE 5.8

REGRESSION OF THREE MEASURES OF ABNORMAL ACCRUALS ON ADDITIONAL FIRM-SPECIFIC CONTROL VARIABLES FOR ALL FIRM-YEARS.

Variable	AA M1 Coefficient (Sig)	AA M2 Coefficient (Sig)	TA M1 Coefficient (Sig)	TA M2 Coefficient (Sig)	DA M1 Coefficient (Sig)	DA M2 Coefficient (Sig)
Intercept	.030 (.067)	.003 (.965)	-.038 (.044)	-.095 (.189)	-.041 (.103)	-.012 (.903)
TARGET	-.030 (.071)	-.031 (.074)	.017 (.354)	.066 (.767)	.008 (.761)	.002 (.951)
SIZE		.016 (.450)		.107 (.000)		.047 (.151)
CFO		-.014 (.487)		-.121 (.000)		-.066 (.028)
INCRE	-.029 (.100)	-.028 (.124)	.020 (.309)	.024 (.219)	.057 (.033)	.059 (.034)
LOSS	.005 (.849)	.006 (.824)	-.084 (.005)	-.082 (.006)	-.059 (.146)	-.061 (.151)
R²	.023	.026	.042	.158	.041	.066
F	2.051	.1.228	3.933.	8.945	3.136	2.795
Significance	.107	..297	.009	.000	.026	.018
N	235	235	240	240	225	225

Comparison of the regression results from the three accruals models using all firm-year data clearly show that Healy's TA model is the best predictor of earnings

management ($p < .0005$) with independent variables TARGET, SIZE, CFO, INCRE and LOSS explaining nearly 16% of the accruals measure. The significant ($p < .0005$) explanatory variables are SIZE, CFO and LOSS whereas TARGET and INCRE are not significant predictor variables. In contrast, TARGET is a slightly significant ($p < .10$) predictor of earnings management for Peasnell's abnormal accruals but the regression model is insignificant and a poor predictor of earnings management. The model explains only 2.6% of the variance in abnormal accruals. The third regression model (M3) for DeAngelo's discretionary accruals is a significant ($p < .10$) predictor of earnings management with CFO and INCRE both marginally significant ($p < .05$) explanatory variables with TARGET again an insignificant determinant of earnings management by control firms.

The findings so far relating to the earnings management hypothesis are supported by additional regression analysis, partitioning all the firm-year observations according to takeover activity. The additional regression equation is specified as:

$$\text{Abnormal accruals (AA or TA or DA)} = \alpha + \beta_1 \text{INCRE} + \beta_2 \text{LOSS} + v.$$

Table 5.9 displays the regression results for target firms in Panel A and control firms in Panel B. Examination of earnings management under conditions of earnings loss and earnings increase (no earnings decrease)⁴⁶ reveals that the regression model used for target firms for all three measures of abnormal or discretionary accruals is not significant. The two variables are not predictors of earnings management in target firms although INCRE could be considered a slightly significant ($p < .05$) predictor of abnormal accruals. The negative sign for INCRE in the AA model is evidence of a negative relationship with AA and implies that an earnings decline is important for target firms. However, the situation differs markedly for control firms in that the regression model for TA is highly significant ($p < .0005$) with LOSS a significant

⁴⁶ Avoidance of earnings decreases and losses are incentives for earnings management according to Burgstahler & Dichev (1997).

($p < .0005$) contributing factor. The TA regression model explains 13% of the variance in TA - the Healy proxy for earnings management. The pattern is repeated by the DA model but to a slightly lesser degree of significance. Therefore, the relationship between earnings management and earnings surplus (a negative loss) in control firms is confirmed by the TA and DA models but not by the AA model although there is a negative sign for loss in the AA regression model. This result suggests control firms seek to avoid loss by managing earnings via discretionary accruals (TA and DA models) to achieve an earnings surplus.

Graph 7 in Appendix 4 shows the trend in earnings loss with more target firms experiencing loss than control firms. The percentage of target firms experiencing an earnings loss falls in the years of takeover and prior to takeover consistent with claims by Burgstahler & Dichev (1997) that managers seek to avoid earnings loss and decline prior to takeover. Similarly, such firms seek to avoid an earnings decline and Graph 8 depicts the falling trend in earnings decrease for years prior to and at takeover. The falling trend is more marked in control firms with the decline commencing earlier than target firms in year $t-3$. Less than 20% of control firms experience an earnings decrease compared with 30% of target firms experiencing an earnings decrease in the takeover year.

TABLE 5.9

REGRESSION OF THREE MEASURES OF ABNORMAL ACCRUALS ON TWO FIRM-SPECIFIC CONTROL VARIABLES FOR ALL FIRM-YEARS

Panel A: Target Firms

Variable	AA Coefficient (Sig)	TA Coefficient (Sig)	DA Coefficient (Sig)
Intercept	.015 (.432)	-.027 (.359)	-.038 (.324)
INCRE	-.047 (.047)	.023 (.507)	.057 (.222)
LOSS	-.019 (.537)	-.056 (.216)	-.031 (.598)
R ²	.030	.021	.023
F	2.017	1.374	1.202
Significance	.610	.257	.305
N	132	132	106

Panel B: Control Firms

Intercept	.012 (.565)	-.029 (.064)	-.035 (.138)
INCRE	-.006 (.817)	.014 (.467)	.055 (.059)
LOSS	.059 (.244)	-.148 (.000)	-.123 (.029)
R ²	.014	.130	.097
F	.872	10.134	6.087
Significance	.421	.000	.003
N	127	136	115

5.2.3 ADDITIONAL TESTS

To further examine whether earnings management differs between target and control firms, univariate analysis of variance test results show that for Peasnell's abnormal accruals, TARGET is a significant variable [$F(1,260) = 2.918, p = .089$] indicating a difference between the two firm samples. There is no difference between target and control firms in terms of TA [$F(1,271) = .131, p = .718$] or DA [$F(1,222) = .007, p = .933$] on a univariate basis.

Supplementary tests explore the impact of loss, earnings decrease and takeover activity and firm size on the level of earnings management as measured by abnormal accruals. Pooled all firm-year data is used with an alpha level of 5% for the following statistical tests. A two-way between groups analysis of variance (ANOVA) was used to test for a target by loss interaction and target by earnings decline. There is a statistically significant main effect for TARGET, [$F(1, 258) = 4.081, p = .044$] but no effect for loss, [$F(1,258) = 1.243, p = .266$] and no significant interaction is found. Therefore there are no differences in earnings loss for control and target firms. The profile plot which is shown below in Figure 5.1, shows that control firms have a higher mean AA level when they have an earnings surplus than do target firms. This suggests there is some earnings management to maintain a surplus and avoid earnings loss by control firms. There is no difference for target firms whether they have a loss or a surplus. Control firms have a lower level of abnormal accruals in an earnings loss situation.

In comparison with the other accruals measures, both LOSS [$F(1,220) = 6.145, p = .014$] and INCRE [$F(1,219) = 7.214, p = .008$] have significant effects on discretionary accruals (DA) in 2x2 ANOVAs with TARGET but have no interactive effect with TARGET. The statistical results for the TA model are similar with no interactivity found between the variables.

The pattern differs for TARGET and INCRE variables (see Figure 5.2) although control firms again have higher levels of abnormal accruals than target firms. No main effect is found for TARGET [$F(1,257) = 2.67, p = .103$] or EDECLINE [$F(1,257) = .700, p = .083$] and no interaction effect.

Results of exploring the effect of firm size on earnings management to avoid earnings decreases by two-way ANOVA are depicted in Figures 5.3 and 5.4. Other accruals measures were also evaluated with the categorical variables LOSS and INCRE but were not significant. Although small firms have the same level of earnings management whether or not they have an earnings decrease or increase (see Figure 5.3), it is the medium sized firms that have the highest level of positive abnormal accruals with an earnings decrease but there are no statistically significant effects for EDECLINE or SIZE or the interaction of these variables. The pattern is slightly different in Figure 5.4 for the measure of discretionary accruals. Here INCRE has a significant effect [$F(1,217) = 5.297, p = .022$] on discretionary accruals but SIZE [$F(1,217) = 4.560, p = .213$] has no significant effect and neither is there any interactive effect of SIZE*EDECLINE [$F(2,217) = .387, p = .680$].

In summary, there is slight evidence of earnings management by NZ firms subjected to takeover activity but significant at $p < .10$ for abnormal accruals. Firm size, cash flows from operations and earnings loss significantly ($p < .0005$ and $p < .005$) predict earnings management according to Healy's TA model. DeAngelo's model of discretionary accruals also predicts earnings management to a somewhat lesser significance ($p < .05$) by cash flows from operations and earnings increase thus avoiding earnings decreases. All three abnormal or discretionary accruals models contribute to evidence of earnings management but it is not significantly more pronounced in target firms hence the first hypothesis is not supported.

Figure 5.1

Abnormal Accruals means

for Target and Loss variables

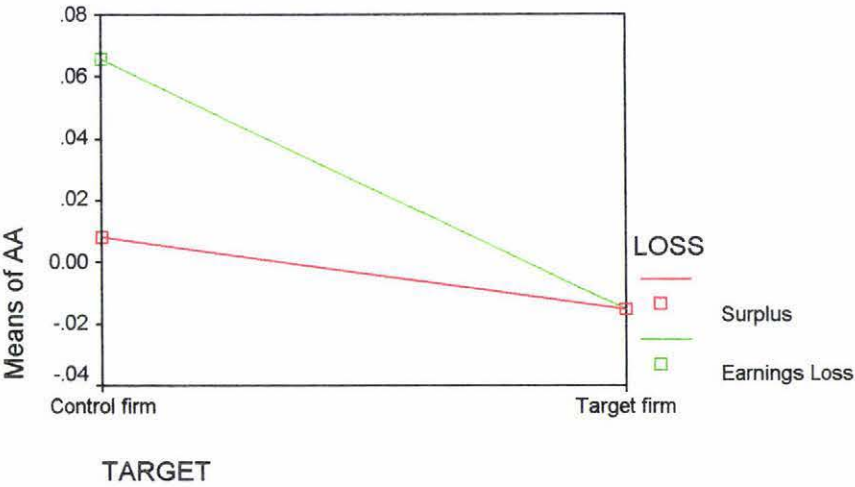


Figure 5.2

Means of Abnormal Accruals

Effects of Target and Earnings Increase variables

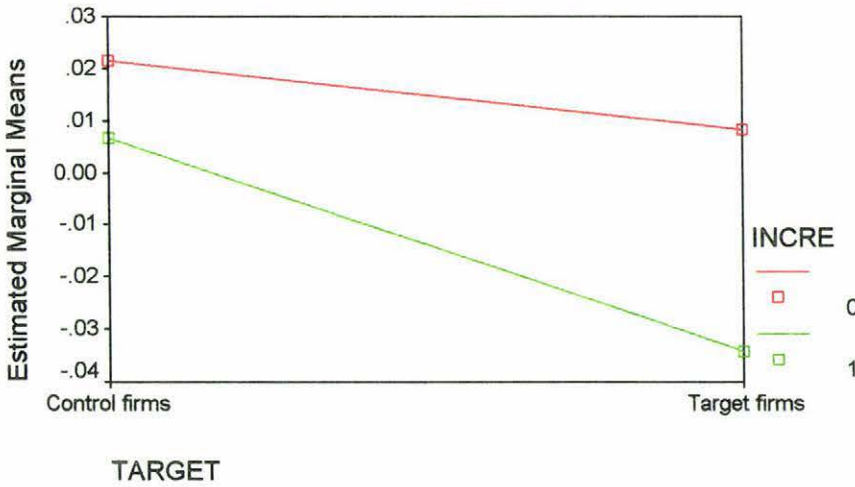


Figure 5.3

Means of Abnormal Accruals

for Firm Size and Earnings Increase variables

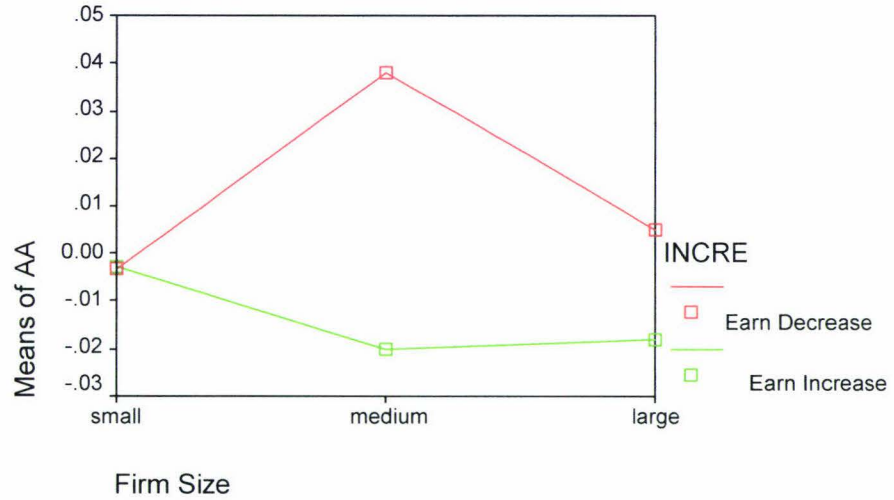
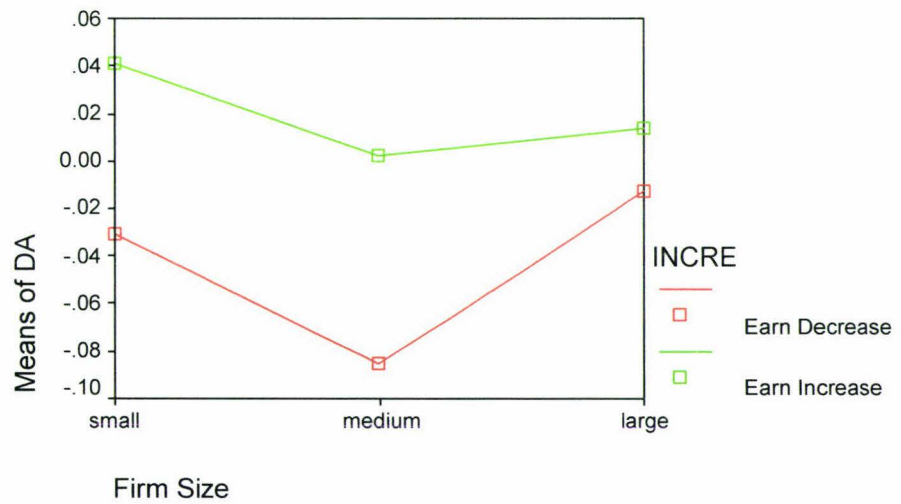


Figure 5.4

Means of Discretionary Accruals

for Firm Size and Earnings Increase variables



5.3 CORPORATE GOVERNANCE AND EARNINGS MANAGEMENT

This section extends the earnings management research phase by addressing the effect of a selection of corporate governance features on earnings management by NZ listed companies. Sub-section 5.3.1 statistically describes the corporate governance variables and firm-specific variables used to test the corporate governance hypothesis. Sub-section 5.3.2 comments on particular variables while sub-section 5.3.3 discusses correlation measures between abnormal accruals and the set of independent variables used in the regressions. Sub-section 5.3.4 reports the multiple regression results obtained for the corporate governance hypothesis.

5.3.1 DESCRIPTIVE STATISTICS FOR THE INDEPENDENT VARIABLES

(for tests of the Corporate Governance Hypotheses)

Descriptive statistics for the independent variables, partitioned according to takeover activity for the event year and all firm-years are displayed in Table 5.10. There are no statistically significant differences between the target and control firm variables in the year of takeover apart from a weak statistical difference in institutional ownership ($p < .05$) and earnings loss in the year prior to takeover ($p < .05$). However, there are statistically significant differences ($p < .05$) between target and control firms for pooled (all firm-year observations) with respect to the number of board members, institutional ownership, earnings loss, audit firms and number of grey board members.

Trends in four independent variables are depicted in Appendix 4, Graphs 3-6. Graph 3 demonstrates the difference in the percentage of independent directors, over time, between target and control firms. The lower percentage for target firms is a sign of weak corporate governance. It can be seen in Graph 4, that more target firms issue a Statement of Corporate Governance than control firms and issue the Statement earlier than required by the 1998 NZSE listing rule 10.5.3(h). At takeover years (1999-2002), a relatively low percentage of firms (20%) do not comply with the rule.

Examples of a selection of Statements of Corporate Governance are provided in Appendix 5. It can be seen that these range from a simple version without much detail to a comprehensive statement that discloses the firm's policies and specific details. Conversely, in Graph 5 there is an increase in the existence of an audit committee in all firms with more control firms adopting disclosure of this attribute initially than target firms and maintaining this trend over 6 years. Surprisingly, despite NZSE recommendations, not all firms comply as only 80% of target firms disclose existence of an audit committee at the year of takeover. Graph 6 shows target firms have more grey directors than control firms particularly in the event year which again is a sign of weak governance.

Unfortunately in this study, there are no indicators of the general economic conditions that prevailed during the mid 1990s which could possibly explain the rising trend in earnings declines in years t-5 to t-3.

TABLE 5.10

DESCRIPTIVE STATISTICS FOR BOARD COMPOSITION AND ADDITIONAL CONTROL
VARIABLES IN THE EVENT YEAR t AND ALL FIRM-YEARS

Variable		Target Firms Year t (N=25)	Control Firms Year t (N=25)	t-test (2 tailed significance)	Mann- Whitney U z test (sig)	All Firm- years (N=295) ⁴⁷
NED (number)	Mean	4.470	4.880	0.265	-.514	4.61
	Std Dev	2.125	1.610	(.792)	(.607)	1.890
	Median	4	4			4
	Minimum	2	3			1
	Maximum	9	10			10
OUT (fraction)	Mean	0.636	0.691	1.521	-.828	0.658
	Std Dev	0.203	0.145	(.129)	(.408)	0.199
	Median	0.666	0.666			0.666
BRDSIZE (number)	Mean	6.440	7.160	-1.537	-1.662	6.910
	Std Dev	1.416	1.525	(.131) ^a	(.097)	1.814
	Median	6	7			7
	Minimum	4	4			4
	Maximum	11	10			14
BRDOWN (fraction)	Mean	0.257	0.306	-.251	-.941	0.269
	Std Dev	0.288	0.261	(.803)	(.347)	0.254
	Median	0.197	0.314			0.222
EDOWN (fraction)	Mean	0.114	0.081	0.612	-1.351	0.099
	Std Dev	0.222	0.153	(.543)	(.177)	0.184
	Median	0.002	0.009			0.003
INSTOWN (fraction)	Mean	0.686	0.569	1.522	-1.950	0.620
	Std Dev	0.230	0.249	(.138) ^a	(.051)	0.248
	Median	0.721	0.583			0.682
SIZE (Total Assets)	Mean	\$612,845.2	\$616,679.2	-.007	-.010	\$587,464
	Std Dev	1,533,531	1,761,937,793	(.994)	(.992)	1,559,777
	Median	107,875	116,460			104,455
	Minimum	9,577	9,733			9,577
	Maximum	6,807,000	8,449,000			8,545,000

⁴⁷ Six years of firm data are collected.

LEV	Mean	0.409	0.480	-1.078	-.631	0.449
(Debt/Total	Std Dev	0.196	0.266	(.286) ^a	(.528)	0.203
Assets)	Median	0.480	0.470			0.442
CFO	Mean	\$49,932.5	\$37,544.9	0.418	-.184	\$37,629.7
	Std Dev	134,129.2	86,969.37	(.678)	(.854)	102,242
	Median	13,203	9,270			8,812
LOSS	Mean	.280	.080	1.868	-1.822	.120
	Std Dev	.45	.276	(.068) ^a	(.068)	.329
	Median	.000	.000			.000
LOSS	Mean	.360	.120	2.028	-1.967	
(T-1)*	Std Dev	.489	.332	(.048)	(.049)	
	Median	.000	.000			
INCRE	Mean	.68	.88	-1.723	-1.690	.610
	Std Dev	.476	.332	(.091)	(.091)	.489
	Median	1.000	1.000			1.000
AUD	Mean	1.88	2.44	-1.366	-1.354	2.34
	Std Dev	1.485	1.529	(.178) ^a	(.176)	1.56
	Median	1.000	3.000			2.000
AC	Mean	.840	.800	.361	-.364	.660
	Std Dev	.374	.408	(.720) ^a	(.716)	.474
	Median	1.000	1.000			1.000
CORP	Mean	.560	.600	-.281	-.284	.290
	Std Dev	.507	.500	(.780)	(.777)	.456
	Median	1.000	1.000			.000
GREY	Mean	1.16	1.16	.669	-.484	1.06
(number)	Std Dev	1.14	.955	(.505) ^a	(.628)	1.28
	Median	1.000	1.000			1.000

*Earnings loss is included as means values for target and control firms are significantly different at $p < .05$ (2 tailed) in the year prior to the takeover event but not significantly different in the year of the event.

^a Significant ($p < .05$) differences between target and control firms for all firm-years.

5.3.2 COMMENTARY ON DESCRIPTIVE STATISTICS OF SOME INDEPENDENT VARIABLES

Board Composition

The board of directors is the most important internal corporate governance mechanism. Board size is a function of firm size in this sample:

- for small firms, mean board size is 6.08 directors (std dev = 1.344, n = 119);
- for medium-sized firms, mean board size is 7.03 directors (std dev = 1.456, n = 116); and
- for large firms, mean board size is 8.5 directors (std dev = 2.264, n = 56).

The mean board size differs between target and control firms in the event year but the difference is not statistically significant at $p < .10$. Similarly the means of non-executive directors and independent directors differ between target and control firms in the event year (less in target firms) but not significantly. However, for all firm-year observations there are differences (independent samples t-test, $t = -1.795$, $p = .074$) between the numbers of board members in target firms (mean = 7.09, std dev = 1.946, $n = 149$) and control firms (mean = 6.72, std dev = 1.657, $n = 149$). With respect to the number of grey directors, there is also a significant difference ($t = 2.373$, $p < .05$) between target (mean number of grey directors = 1.24, std dev = 1.491, $n = 148$) and control (mean number of grey directors = .88, std dev = 1.01, $n = 147$) firms. This pattern is repeated at $p < .05$ for the fraction of grey directors relative to board size but there is no statistically significant difference between target and control firms for the fraction of independent directors. Thus, overall, target firms have slightly more directors on their boards with more grey directors but fewer independent directors than the boards of control firms. Control firms can attribute the successful monitoring of their firms' performance to the greater number of independent directors (Shivdasani, 1993). The variable CHAIR reflects a dual role

for the chairman of the board of directors who is also the chief executive. In this study, in pooled all firm-year observations, only 9% of all observations ($n = 261$) are instances of a “dominant personality”⁴⁸ where the chairman is also the chief executive. Target firms have 7.5% of chairmen also acting as chief executive whereas control firms have 10.9% of chairmen occupying a dual role. These differences are not statistically significant ($t = 1.285$, $p = .201$).

Ownership Structure - Institutional investment

It is expected that firms with a high level of institutional investment are more carefully monitored so earnings management is less likely to occur than in firms with low institutional ownership.⁴⁹ In this study, control firms overall have a lower level of institutional ownership (mean = 57%) than target firms (mean = 69%). The means are significantly different ($p < .05$) which justifies inclusion of this variable INSTOWN in the regressions. The INSTOWN variable is significantly correlated ($p < .005$) with the TARGET variable (see Table 5.11).

The mean values of BRDOWN and EXOWN are constant over the study period and there are no significant differences in these variables between control and target firms.

Audit Committees

Prior research on corporate governance features⁵⁰ includes an audit committee variable as a monitoring factor. Peasnell et al.(1999) find 83% of all firms in their sample have an audit committee, which is similar to the NZ finding of 82% of all firms. In the event year 84% of target firms have an audit committee whereas only 80% of control firms have an audit committee⁵¹. The mean number of audit

⁴⁸ Term used by Ho & Wang (2001).

⁴⁹ See earlier discussion on institutional investors in Section 3.1.1, Chapter 3.

⁵⁰ Beasley (1996), Peasnell et al. (1999) and Ho & Wang (2001) include audit committees as a feature of corporate governance. Beasley finds 41% of fraud firms have an audit committee compared to only 63% of no fraud firms with an audit committee.

⁵¹ See examples of audit committee disclosures within Statements of Corporate Governance in Appendix 5.

committee members is 3 overall ranging from 2-5 members (who meet two, three or four times a year or when the need arises) whereas Beasley (1996) finds that audit committees of no-fraud firms have 3 members while fraud firms have 2 members. Arthur Levitt, Chairman of the SEC in his much quoted speech (Levitt, 1998) criticized the nature of audit committees which prompted the NYSE and others to form the Blue Ribbon Committee⁵² to improve and enhance audit committee independence and director qualifications so that only independent directors formed the committees. The conclusion from NZ evidence suggests the audit committees are well constituted and perform appropriate oversight roles for boards of directors.

Earnings decreases and earnings losses

The overall proportion of earnings decreases is 43% of all firm-years ($n = 261$) and similar to the proportion of earnings decreases (44.4%) of target firms ($n = 133$). The pattern is different for earnings losses. The overall proportion of earnings losses is 14.2 % of all firm-year observations but 20.3% of target firms ($n = 133$) experience an earnings loss compared to only 7.8% control firms ($n = 129$) experiencing an earnings loss. The difference is significant using an independent samples t- test ($t = -3.020$, $p < .005$). This difference is significant too for both event and prior –to – event years as seen in Table 5.10.

Firm- specific attributes: CFO and LEV

Means values of the firm specific attribute, CFO, is relatively constant for both target and control firms over the six year study period. However, the mean value of LEV for target firms over the period is .415 which is significantly different ($t = 2.929$, $p < .005$, $n = 295$) from the mean LEV value (.483) in control firms over the period. This finding suggests that pooling the observations is justified since otherwise the means appear relatively homogeneous with respect to the event year observations.

⁵² Read & Raghunandan (2001).

5.3.3 CORRELATION ANALYSIS

Table 5.11 displays the results of correlation analysis between abnormal accruals and the independent variables including the partitioning variable for takeover activity. These results show there is a weak significant relationship at $p = <.05$ for takeover activity and earnings increase. Otherwise the abnormal accruals have poor relationships with the independent variables. Singularity can occur when one variable is a combination of other independent variables and all are included. The risk of singularity is avoided in the study but could have occurred had the independent variables included the number of executive directors with the number of grey and independent directors as well as the total board size. The possibility of multicollinearity is considered but low correlation coefficients suggest that multicollinearity is minimal. The collinearity tolerance statistics ($1-R^2$) for the full model are high ranging from 0.236 - 0.891 indicating low multiple correlation with other independent variables. If the tolerance values had been low, near, zero then multicollinearity would have been a problem for the regressions. Another way of testing for multicollinearity is the Variance Inflation Factor (VIF) but the largest VIF observed for the full model is 4.233 (SIZE) and the VIFs for all other independent variables are above 1.122. Thus, since the strongest correlation ($r = .576$) is between BRDSIZE and SIZE and the second significant correlation ($r = .563$) between GREY and OUT and the VIF results indicate a lack of multicollinearity, the regression results can be interpreted with more confidence.

TABLE 5.11 PEARSON CORRELATION COEFFICIENTS BETWEEN ABNORMAL ACCRUALS AND THE INDEPENDENT VARIABLES (1- TAILED, P VALUES IN PARENTHESES)

	AA	TARG	INCRE	OUT	FSIZE	AC	AUD	BRDSIZE	FGREY	CFO	LEV	BRDOW	EDOW	INSTOW
AA	*													
TARGET	-.105 (.044)	*												
INCRE	-.104 (.047)	-.056 (.166)	*											
OUT	.038 (.269)	-.088 (.065)	-.007 (.454)	*										
FSIZE	.015 (.404)	.007 (.451)	.036 (.269)	.141 (.008) ^b	*									
AC	.110 (.038)	.149 (.005) ^b	-.120 (.020)	.222 (.000) ^a	.322 (.000) ^a	*								
AUD	.100 (.053)	-.118 (.022)	.121 (.019)	-.004 (.473)	.240 (.000) ^a	.128 (.014)	*							
BRDSIZE	.065 (.146)	.104 (.037)	.001 (.495)	-.007 (.454)	.576 (.000) ^a	.249 (.000) ^a	.239 (.000) ^a	*						
FGREY	-.004 (.474)	.116 (.023)	-.065 (.133)	-.563 (.000) ^a	-.211 (.000) ^a	-.138 (.009) ^b	-.222 (.000) ^a	-.015 (.401)	*					
CFO	-.009 (.443)	-.060 (.164)	.053 (.195)	.032 (.304)	.808 (.000) ^a	.278 (.000) ^a	.281 (.000) ^a	.536 (.000) ^a	-.147 (.000) ^b	*				
LEV	.033 (.300)	-.16 (.002) ^b	-.097 (.0480)	.106 (.035)	.123 (.018)	.168 (.042)	.101 (.002) ^b	.106 (.035)	.026 (.328)	.032 (.301)	*			
BRDOW	-.023 (.353)	-.031 (.299)	-.007 (.454)	-.230 (.000) ^a	-.142 (.008) ^b	-.017 (.388)	-.075 (.104)	-.114 (.027)	.247 (.000) ^a	-.072 (.125)	-.029 (.312)	*		
EDOW	.039 (.263)	-.052 (.185)	-.084 (.075)	-.298 (.000) ^a	-.223 (.000) ^a	-.070 (.115)	-.124 (.017)	-.144 (.007) ^b	.045 (.222)	-.165 (.004) ^b	-.016 (.393)	.451 (.000) ^a	*	
INSTOW	.078 (.106)	.176 (.001) ^b	-.021 (.361)	.348 (.000) ^a	.255 (.000) ^a	.209 (.000) ^a	.025 (.340) ^a	.023 (.350)	-.171 (.002)	.213 (.000) ^a	-.155 (.005) ^b	.297 (.000) ^a	-.494 (.000) ^a	*

a significant at $p < .0005$

b significant at $p < .005$

5.3.4 REGRESSION RESULTS FOR TESTS OF THE CORPORATE GOVERNANCE HYPOTHESES

Multiple regressions are performed for the three accruals models using the set of corporate governance factors and firm-specific attributes as independent variables.

The findings relating to the three earnings management models discussed in the earlier section 5.1 are supported by additional regression analysis partitioning all the firm-year observations according to takeover activity. The next three Tables display regression results for three different measures of accruals. Table 5.12 displays the regression result using Peasnell's abnormal accruals model. The Table is in two parts. Panel A provides the details for target firms and Panel B provides the results for control firms. There are three versions of each regression (M1, M2, and M3) adding various control variables considered to be corporate governance mechanisms for constraining earnings management. Table 5.13 presents regression results using the Healy model. Again the Table is in two parts. Panel A provides the details for target firms and Panel B provides the results for control firms. Table 5.14 shows regression results using the DeAngelo model of discretionary accruals. Panel A of the Table provides the details for target firms and Panel B provides the results for control firms.

TABLE 5.12

OLS REGRESSIONS OF ABNORMAL ACCRUALS ON A SET OF CONTROL VARIABLES. ABNORMAL ACCRUALS ARE ESTIMATED BY THE MODIFIED-JONES MODEL DESCRIBED BY PEASNELL ET AL.(1999).

Panel A: Target = 1 (takeover/merger firms)

Variable	M1 Coefficient	t- value	Sig (p- value)	M2 Coefficient	t-value	Sig (p-value)	M3 Coefficient	t-value	Sig (p-value)
Intercept	-.072	-1.815	.072	-.060	-.380	.705	.135	.714	.477
OUT	.045	.727	.469	.066	.332	.741	-.047	-.213	.832
AC	.018	.578	.564	.025	.729	.467	.016	.425	.194
AUD	.007	.813	.418	.007	.727	.469	.014	1.306	.194
BRDSIZE				.007	.931	.354	.005	.580	.563
FGREY				.090	.820	.414	.122	.964	.337
SIZE				-.011	-.317	.752	-.023	-.617	.538
CFO				-.010	-.323	.747	-.002	-.071	.943
LEV				-.080	-.298	.766	-.135	-.493	.623
LEV*OUT				.104	.252	.801	.163	.383	.702
BRDOWN							-.275	-1.930	.056 ^c
BRDOWN* OUT							.321	1.507	.135
EDOWN							-.005	-.047	.963
INSTOWN							-.050	-.659	.511
CHAIR							.021	.406	.686
INCRE							-.041	-1.550	.124
LOSS							-.005	-1.44	.886
R ²	.025			.047			.124		
F	.982			.597			.910		
Significance	.404			.797			.560		
N	120			120			120		

TABLE 5.12 CONTINUED

PANEL B: TARGET = 0 (CONTROL FIRMS)

Variable	M1 Coefficient	t- value	Sig (p- value)	M2 Coefficient	t-value	Sig (p- value)	M3 Coefficient	t-value	Sig (p-value)
Intercept	.008	.137	.891	-.393	-1.938	.055 ^b	-.459	-1.723	.088
OUT	-.044	-.646	.520	.560	2.228	.028 ^b	.664	1.758	.082 ^d
AC	.034	1.358	.177	.025	.902	.369	.007	.215	.830
AUD	.006	.708	.480	.011	1.271	.206	.014	1.472	.144
BRDSIZE				.006	.589	.557	.011	.887	.377
FGREY				-.025	-.273	.785	-.069	-.635	.527
SIZE				.007	.211	.834	-.002	-.055	.956
CFO				-.027	-.861	.391	-.022	-.624	.534
LEV				.958	2.303	.023 ^c	1.250	2.096	.039 ^c
LEV*OUT				-1.331	-2.405	.018 ^c	-1.729	-2.139	.035 ^c
BRDOWN							-.120	-.477	.635
BRDOWN* OUT							.262	.749	.456
EDOWN							-.084	-.765	.446
INSTOW							-.019	-.262	.794
CHAIR							.051	.757	.451
INCRE							-.017	-.565	.573
LOSS							.067	1.180	.241
R ²	.024			.091			.134		
F	.927			1.184			.968		
Significance	.430			.313			.497		
N	117			117			117		

TABLE 5.13

OLS REGRESSIONS OF TOTAL ACCRUALS ON A SET OF CONTROL VARIABLES. TOTAL ACCRUALS ARE COMPUTED USING THE HEALY MODEL.

PANEL A: TARGET = 1 (TARGET FIRMS)

Variable	M1 Coefficient	t- value	Sig (p- value)	M2 Coefficient	t-value	Sig (p- value)	M3 Coefficient	t-value	Sig (p-value)
Intercept	-.090	-1.525	.130	-.196	-.888	.377	-.028	-.105	.917
OUT	.079	.852	.396	.048	.173	.863	.058	.188	.851
AC	.040	.851	.397	.050	1.054	.294	.103	1.998	.048 ^c
AUD	-.006	-.490	.625	.007	.458	.648	.005	.357	.722
BRDSIZE				-.008	-.737	.463	-.013	-1.169	.245
FGREY				.130	.851	.397	.076	.428	.669
SIZE				.154	3.215	.002 ^b	.155	3.044	.003 ^b
CFO				-.159	-3.722	.000 ^a	-.170	-3.735	.000 ^a
LEV				-.127	-.340	.734	-.164	-.429	.669
LEV*OUT				.069	.119	.905	.122	.205	.838
BRDOWN							.059	.295	.769
BRDOWN* OUT							-.196	-.660	.511
EXOWN							.023	.158	.875
INSTOWN							-.190	-1.790	.076 ^d
CHAIR							.030	.421	.675
INCRE							.042	1.116	.267
LOSS							-.067	-1.381	.170
R ²	.022			.168			.233		
F	.870			2.464			1.957		
Significance	.459			.013 ^c			.023 ^c		
N	120			120			120		

TABLE 5.13 CONTINUED

PANEL B: TARGET = 0 (CONTROL FIRMS)

Variable	M1 Coefficient	t- value	Sig (p- value)	M2 Coefficient	t-value	Sig (p- value)	M3 Coefficient	t-value	Sig (p-value)
Intercept	.004	.090	.928	-.004	-.030	.976	.255	1.435	.154
OUT	.001	.020	.984	-.156	-.841	.402	-.657	-2.595	.011 ^c
AC	-.048	-2.453	.016 ^b	-.037	-1.788	.076 ^d	-.003	-.129	.897
AUD	-.003	-.409	.683	.004	.687	.493	.007	1.021	.309
BRDSIZE				.005	.698	.487	-.003	-.330	.742
FGREY				.161	2.420	.017 ^c	.258	3.559	.001 ^b
SIZE				.090	3.498	.001 ^b	.124	4.336	.000 ^a
CFO				-.092	-3.919	.000 ^a	-.112	-4.743	.000 ^a
LEV				-.437	-1.424	.157	-1.367	-3.434	.001 ^b
LEV*OUT				.472	1.157	.250	1.765	3.270	.001 ^b
BRDOWN							.199	1.183	.239
BRDOWN* OUT							-.159	.681	.497
EDOWN							.040	.539	.591
INSTOWN							-.031	-.631	.529
CHAIR							-.114	-2.547	.012 ^c
INCRE							.043	2.152	.034 ^c
LOSS							-.103	-2.711	.008 ^c
R ²	.048			.200			.372		
F	2.044			3.196			3.999		
Significance	.111			.002 ^b			.000 ^a		
N	125			125			125		

TABLE 5.14

OLS REGRESSIONS OF DISCRETIONARY ACCRUALS ON A SET OF CONTROL VARIABLES. DISCRETIONARY ACCRUALS ARE COMPUTED USING THE DEANGELO MODEL.

PANEL A: TARGET = 1 (TAKEOVER/MERGER FIRMS)

Variable	M1 Coefficient	t- value	Sig (p- value)	M2 Coefficient	t-value	Sig (p- value)	M3 Coefficient	t-value	Sig (p-value)
Intercept	-.022	-.275	.784	.014	.043	.965	.056	.145	.885
OUT	.062	.505	.615	-.071	-.181	.857	-.210	-.468	.641
AC	-.063	-1.001	.319	-.047	-.698	.487	-.047	-.627	.532
AUD	.008	.477	.634	.011	.521	.604	.001	.052	.959
BRDSIZE				.014	.920	.360	.020	1.234	.221
FGREY				.055	.255	.799	-.011	-.042	.967
SIZE				.072	1.067	.289	.070	.936	.352
CFO				-.107	-1.763	.081	-.121	-1.815	.073 ^d
LEV				-.249	-.472	.638	-.255	-.458	.648
LEV*OUT				.285	.350	.727	.375	.434	.666
BRDOWN							-.028	-.098	.922
BRDOWN* OUT							.114	.263	.793
EDOWN							-.094	-.434	.665
INSTOWN							.073	.471	.639
CHAIR							.085	.822	.414
INCRE							.054	.999	.321
LOSS							-.021	-.295	.769
R ²	.011			.058			.095		
F	.342			.591			.520		
Significance	.795			.801			.929		
N	96			96			96		

TABLE 5.14 continued

Panel B: Target = 0 (control firms)

Variable	M1 Coefficient	t- value	Sig (p- value)	M2 Coefficient	t-value	Sig (p- value)	M3 Coefficient	t-value	Sig (p-value)
Intercept	-.018	-.272	.786	.009	.039	.969	.170	.579	.564
OUT	.047	.595	.553	.005	.015	.988	-.364	-.877	.383
AC	-.006	-.202	.840	.004	.130	.896	.036	.975	.332
AUD	-.008	-.833	.407	-.002	-.167	.868	-.001	-.124	.902
BRDSIZE				.012	.993	.323	.011	.824	.412
FGREY				.134	1.261	.210	.167	1.399	.165
SIZE				.033	.797	.427	.041	.870	.387
CFO				-.060	-1.610	.111	-.084	-2.165	.033 ^c
LEV				-.244	-.502	.617	-.788	-1.201	.233
LEV*OUT				.230	.355	.724	1.043	1.172	.244
BRDOWN							.175	.633	.528
BRDOWN * OUT							-.061	-.159	.874
EDOWN							.003	.027	.978
INSTOWN							.081	.987	.326
CHAIR							-.071	-.963	.338
INCRE							.082	2.484	.015 ^c
LOSS							-.123	-1.962	.053 ^d
R ²	0.12			.061			.216		
F	.408			.699			1.553		
Significance	.748			.708			.099 ^d		
N	107			107			107		

Significance levels a = $p < .0005$, b = $p < .005$, c = $p < .05$ and d = $p < .10$.

TABLE 5.15

OLS Regressions of two accruals measures⁵² without partitioning for takeover activity for all firm – years.

Variable	AA M1 Coefficient	t- value Sig (p-value)	AA M2 Coefficient	t- value Sig (p-value)	TA M1 Coefficient	t- value Sig (p-value)	TA M2 Coefficient	t- value Sig (p-value)
Intercept	-.021	-.333 (.739)	.026	.289 (.773)	-.072	-.985 (.325)	-.187	-1.928 (.055) ^c
OUT	.049	.886 (.376)	.049	.819 (.414)	.133	2.059 (.041) ^a	.120	1.854 (.065)
AC	.032	1.714 (.088) ^d	.031	1.51 (.132)	-.003	-.120 (.905)	.012	.570 (.569)
AUD	.008	1.301 (.194)	.010	1.55 (.120)	.003	.377 (.706)	.005	.778 (.437)
BRDSIZE	.001	.115 (.908)	.003	.412 (.681)	-.004	-.646 (.519)	-.004	-.670 (.503)
FGREY	.040	.683 (.495)	.032	.507 (.613)	.096	1.409 (.160)	.134	1.965 (.051) ^c
SIZE			.006	.263 (.793)			.123	4.902 (.000) ^a
CFO			-.015	-.713 (.477)			-.123	-5.591 (.000) ^a
LEV			.036	-.771 (.442)			-.100	-2.002 (.047) ^c
BRDOWN	-.015	-.394 (.694)	-.008	-.204 (.839)	.003	.072 (.943)	-.005	-.113 (.910)
EDOWN	-.048	-.799 (.425)	.069	-1.059 (.291)	-.001	-.009 (.993)	.054	.770 (.442)
INSTOWN	-.086	-2.154(.032) ^c	-.094	-2.08 (.039) ^c	-.057	-1.226 (.221)	-.052	-1.074 (.284)
CHAIR	.001	.044 (.965)	.007	.210 (.934)	-.017	-.472 (.637)	-.017	-.482 (.630)
INCRE			-.029	-1.551 (.122)			.024	1.215 (.226)
LOSS			.010	.346 (.730)			-.077	-2.518 (.012) ^c
			-					
R ²	0.041		.058		.025		.190	
F	1.179		.975		.723		3.841	
Significance	.309		.479		.687		.000 ^a	
N	259		236		268		244	

Significance levels a = p<.0005, b = p<.005, c = p<.05 and d = p<.10.

⁵² Regression results of the DA model are omitted from Table 5.15 as the results closely reflect those of the TA regression.

The regression results of abnormal accruals (the extent of earnings management) in target firms show no significant coefficients for variables apart from BRDOWN which is marginally significant ($p = .056$). In control firms, OUT and LEV have significant coefficients at $p < .10$ and $p < .05$ levels respectively. The significant coefficient on the interactive variable LEV*OUT ($p < .05$) for control firms. The three R^2 values, shown in Table 5.12 for both target and control firms, indicate low percentages (2.5%-13%) to explain the variation in AA. The models are not significant and none of the independent variables contribute to the explanation of the variation in abnormal accruals. In the M3 regression, the negative coefficients on the independent director and ownership variables OUT and BRDOWN are consistent with the view held by Shivdasani (1993) that increased equity ownership provides outside directors with an incentive to monitor which reduces the likelihood of a disciplinary takeover. Increased ownership by the board can also be a reason to defeat a takeover bid. The signs of the coefficients of INCRE and LOSS are both negative for target firms whereas a positive sign for INCRE is expected. In control firms, both these variables have coefficient signs that differ from the expected signs which may indicate that any earnings management to avoiding earnings decreases and losses is not performed by manipulating abnormal accruals. However this is only conjecture as neither INCRE nor LOSS has a significant coefficient result in the regressions.

Using the same independent variables but in the regression of Healy's total accruals quite a different pattern emerges. Both M2 and M3 regression models are significant with R^2 values of nearly 17% and 23% respectively explaining the variance in the TA measure of earnings management. In M3 for target firms, the presence of an audit committee has a significant coefficient ($p < .05$). The firm attributes of SIZE and CFO both have strongly significant coefficients ($p < .0005$). Regression results for the control firms in Table 5.13 again produce very significant regression models M2 ($p < .005$) and M3 ($p < .0005$) with the latter model explaining 37% (R^2) of the variance in total accruals. The governance variables (OUT, FGREY and CHAIR) and firm attribute variables (SIZE, CFO, LEV, INCRE and LOSS) all have significant coefficients. Ownership variables are not significant. The negative sign for LOSS and positive sign for INCRE are consistent with the view held by

Burgstahler & Dichev (1997) to manipulate earnings to avoid earnings losses and earnings decreases. These signs are the same for LOSS and INCRE variables in target firms.

In contrast to the strong regression models for the Healy abnormal accruals, the regression results for the DeAngelo discretionary accruals are disappointing (see Table 5.14). The regression results for target firms indicate a poor explanation of the variance in DA ($R^2 < 10\%$) although for control firms the full M3 regression model provides more explanation of the variance in DA where $R^2 = 21.6\%$. The only variable of some marginal significance ($p < .10$) for target firms is CFO. The significant coefficients for control firm variables are again CFO ($p < .05$) but also INCRE ($p < .05$) and LOSS ($p = .053$). Thus discretionary accruals in control firms are influenced by earnings loss and earnings increase variables. The signs of these coefficients are consistent with the signs (positive for INCRE and negative for LOSS) in the Healy model confirming that both target and control firms manipulate earnings via discretionary accruals to maintain earnings increases and avoid earnings losses. This result is expected following on from the univariate analysis of variance result⁵⁴ that finds no difference between target and control firms in terms of TA and DA.

Regression results for non-partitioned accruals measures using pooled all firm-year observations and omitting the takeover variable are reported in Table 5.15. These regressions further test the corporate governance hypotheses and examine the effect of corporate governance features on measures of earnings management. The regression M1 model of AA is unimpressive and yields little more information than the partitioned regressions apart from a significant ($p < .05$) effect of the coefficient for institutional ownership and a marginal significant effect ($p < .10$) of the presence of an audit committee. The TA regression however produces a significant coefficient ($p < .05$) for OUT the percentage of outside or independent non-executive directors but the overall model is not significant and there is a poor low explanation of the variance in TA. In marked contrast to

⁵⁴ Described in Section 5.2.3

the M1 regression, a comprehensive M2 regression of TA is highly significant and the explanatory variables are related more to firm-specific attributes rather than corporate governance features. However, OUT and FGREY (fraction of grey directors that are affiliated with the firms) have significant coefficients ($p < .05$). The overall TA M2 regression explains 19% of the variance in the measure of TA. Although not reported, the DA regression produced similar but weaker results than the TA model.

5.3.5 HYPOTHESES CONCLUSIONS

The results of all the multiple regressions of AA, TA and DA are used to test the corporate governance hypotheses which are in effect tests of the link between earnings management and board effectiveness are ambiguous. The different models each provide different evidence. There is evidence to partly support the hypothesis H2 that states: “the extent of earnings management is not related to the proportion of outside directors on the board in target firms” on the basis of all the regression results where OUT has no significant coefficients in target firms. However in the case of control firms, H2 is not supported because the coefficients on OUT are significant in the AA and TA regressions (see Panel B in Tables 5.12 and 5.13). Also H2 is not supported by the pooled regression of AA (Table 5.15). Therefore target firms have earnings management not constrained by independent directors.

The next hypothesis, H3, states “the extent of income increasing (or decreasing) earnings management is not affected by the presence of an audit committee” but the evidence from the regressions of TA do not support H3. The AC variable has a significant coefficient ($p < .05$) for target firms in the presence of other variables (Table 5.13, Panel A) and for control firms M1 where AC has a significant coefficient at $p < .05$. The non-partitioned AA regression (Table 5.15) also has a marginally significant coefficient for AC at $p = .088$. This evidence is contrary to prior research where AC is not significant (Beasley, 1996 and Peasnell et al., 1999). Despite this evidence there is still support for the hypothesis with the other regressions of abnormal accruals (both large and control firms consistent with the

findings of Peasnell et al.(1999) and the DeAngelo discretionary accruals where the coefficient on AC is insignificant in the M1 regressions.

Ownership effects on earnings management provide insignificant coefficients for all regressions apart from BRDOWN in the regression of AA for target firms and INSTOWN for non-partitioned regression of AA both with significant coefficients ($p < .05$) and negative signs. Hence there is no overwhelming support for H4 which states that earnings management is not affected by institutional or board ownership.

There is no support for H5 which states that target firms do not differ from control firms with respect to earnings management to avoid earnings losses and decreases. This has been discussed above in relation to the earnings management hypothesis with results reported in Table 5.9 which clearly indicate the differences between target and control firms. The regression analyses for the corporate governance hypotheses also confirm the lack of support for H5 where control firms have significant coefficients ($p < .05$ and $< .005$) on the INCRE and LOSS variables in regressions of TA and AA (Tables 5.13 and 5.14). In contrast there is evidence to support H5 from the regression of AA but the results are weak (Table 5.12).

Similarly for H6 which effectively states that corporate governance monitoring mechanisms in target firms are not different to those in control firms, the regression results suggest otherwise. These mechanisms relate to OUT, AC, AUD, BRDSIZE and BRDOWN. The M2 regression results of AA and TA displayed in the Panel B for control firms have greater R^2 (9.1% and 20% respectively) than those R^2 (4.7% and 16.8% respectively) in Panel A for target firms suggesting weaker governance mechanisms in the target firms as expected and providing strong evidence not to support H6.

5.4 TAKEOVER ACTIVITY

Takeover activity has been fully integrated throughout the research and as such does not require additional testing. However logit regressions (because TARGET is a dichotomous variable) are performed to investigate the significance of corporate governance variables as further tests of the hypotheses. Beasley (1996) and Shivdasani (1993) use this type of regression analysis.

TABLE 5.16 LOGIT REGRESSION OF TARGET
(THE DEPENDENT VARIABLE EQUALS 1 IF THE FIRM IS A TAKEOVER TARGET)

Independent Variables	Coefficient	Wald statistic	Significance
Intercept	-.012	.007	.935
AA	-1.793	2.161	.142
TA	1.539	.885	.347
DA	-.303	.120	.729
Chi square	3.066		.382
R ²	.018		
N	222		

Although the model and the results are not significant there is a hint of a relationship between TARGET and the measure of AA at $p = .142$. In this series of logit regressions the number of observations varies because missing values are excluded so only those cases where there are observations for all variables are included in the analysis.

TABLE 5.17 LOGIT REGRESSION OF TARGET**(THE DEPENDENT VARIABLE EQUALS 1 IF THE FIRM IS A TAKEOVER TARGET)**

Independent Variables	Coefficient	Wald statistic	Significance
Intercept	-1.029	1.037	.309
AC	-.641	4.746	.029
OUT	-1.564	3.278	.070
BRDSIZE	.087	1.78	.240
BRDOWN	-.233	.689	.689
EDOWN	.931	.302	.302
INSTOWN	2.222	11.488	.001
FGREY	1.363	.126	.126
Chi square	28.635		<.0005
R ²	.132		
N	275		

The value of R² indicates a measure of 13.2% of the significance of the model. It is clear that AC, OUT and INSTOWN are significant variables for target firms in this study.

TABLE 5.18**LOGIT REGRESSION OF TARGET (THE DEPENDENT VARIABLE EQUALS 1 IF THE FIRM IS A TAKEOVER TARGET)**

Independent Variables	Coefficient	Wald statistic	Significance
Intercept	-.100	.230	.632
INCRE	-.023	.009	.926
LOSS	1.098	7.309	.007
Chi square	8.969		.010
R ²	.040		
N	298		

Results presented in Table 5.18 confirm the significance of the earnings LOSS variable for target firms. The results of both logit regressions provide additional evidence to support the alternative hypotheses for H5 and H6 in that there are differences between target and control firms.

With reference to H7 which states that directors of target firms have lower levels of remuneration and lower levels of share ownership than directors of control firms, the first part relating to remuneration is discussed early in the chapter (see Table 5.3). There is no evidence from the comparison of the means of remuneration levels for target and control firms to support H7. The second limb of the hypothesis is addressed in the summary of variable descriptive statistics reported in Table 5.10. There is sufficient evidence to refute H7 on the basis of the insignificant t-test result for the comparison of means of board ownership in target and control firms in the event year. An additional comparative means test on all firm year observations ($n = 147$ control firms and 140 target firms $t = .527$, $p = .599$) confirms the previous result. Interestingly though for all firm-year observations, there is a strong significant difference ($t = -3.007$, $p < .005$) between institutional ownership by target firms and by control firms. The overall mean of institutional ownership for target firms is 57.72% whereas 66.43% of target firm ownership is by institution investors.

Managerial ownership of target (9%) and control (11%) firms does not differ significantly overall.

In summary, this chapter presents descriptive statistics of the numerous variables relating to earnings management and corporate governance features as well as results of the statistical tests of the seven hypotheses. The first hypothesis is not supported in that while earnings management does exist in both target and control firms it is not more pronounced in target firms. The second hypothesis which relates to corporate governance is partly supported by the evidence of association between earnings management and the proportion of outside directors only in control firms but not in target firms. The third hypothesis relating to the presence of an audit committee, is not supported as there is some evidence of the association between earnings management and the audit committee. The fourth hypothesis is not supported because there is evidence of board and institutional ownership effects. The fifth and sixth hypotheses are also not supported because target firms do differ from control firms and there are stronger corporate governance mechanisms operating in control firms. The seventh hypothesis is rejected because the remuneration levels of directors are the same for both target and control firms.

CHAPTER SIX DISCUSSION AND CONCLUSION

6.0 INTRODUCTION

This chapter discusses further the research findings. The chapter includes comments on the limitations of the study and suggests some future lines of research on earnings management and corporate governance. Concluding remarks are presented at the end.

6.1 DISCUSSION

The study investigates the extent of earnings management in a sample of NZ publicly listed companies and the mitigating effect of corporate governance mechanisms on earnings management in the context of takeover activity. Three estimates of earnings management are based on three different measures of abnormal or discretionary accruals developed in prior research. The estimate of AA differs from two estimates of discretionary accruals because different elements of financial statements are used in the detection methods. The three accruals measures produce very different regression outcomes that provide somewhat ambiguous answers to the research questions. Nevertheless, the previous chapter discusses the statistical tests of the hypotheses formulated in Chapter 3. This discussion now revisits the series of general questions posed in the first chapter.

Firstly, what is the extent of earning management in NZ and is it common or frequent?

The research findings suggest that it is pervasive throughout the corporate sector - both in target and control firms in NZ. It is widespread in 39% of firms that experience earnings declines and 12% of firms with earnings losses in the entire sample period. Firm size is expected to have an effect on the extent of earnings management but in fact the results below are contrary to expectations, with no difference between the three measures for the three firm size levels. The results of ANOVA are shown below in Table 6.1. It is interesting to note that the signs for means of AA and TA are both negative, suggesting income-

increasing accounting choices consistent with Peasnell et al.(1999). The extent of earnings management by use of abnormal or discretionary accruals varies for each year of the study period (see Appendix 4, Graph 1).

TABLE 6.1

SIMPLE COMPARISON OF MEANS OF ABNORMAL ACCRUALS BY FIRM SIZE

Firm size	AA	TA	DA	N
Small	-.003	-.041	.009	108
Medium	-.003	-.009	-.034	111
Large	-.008	-.034	.003	52
F statistic (SIZE)	.150	1.232	1.269	
Significance	.861	.293	.283	

Secondly, the question as to what conditions prevail for earnings management to occur can be answered by examining the results of the statistical tests. Although predicted to occur in takeover situations for various incentive reasons, evidence of earnings management in this situation is very slight (see Table 5.8) where the TARGET variable is marginally significant ($p < .10$) for the measure of AA. Otherwise there is no discretionary accruals evidence to predict earnings management by target firms. Erickson & Wang (1999) suggest target firms have little time to manipulate their earnings as they are most likely unaware of preliminary takeover buyout activity prior to the event. This may explain the weak earnings management results in targets compared to strong results in acquiring firms who can identify the precise date of takeover.

However a significant ($p < .005$) situation where earnings management occurs by manipulating TA (total accruals in Table 5.8) is in an earnings loss situation. Table 5.9 shows earnings management by control firms in the loss situation. Also, but less significantly, earnings management by manipulating AA and DA occurs in an earnings decrease situation. Firm size has an effect, such that the larger the firm the more there is some earnings management by TA and the larger the value of cash flows from operations, the more there is earnings management by TA and DA. An additional firm attribute where

earnings management is likely to occur is where there are increased leverage ratios. The significant corporate governance features associated with earnings management are: existence of an audit committee in control firms, higher board ownership in target firms, higher percentage of outside directors in control firms and a higher fraction of grey directors in control firms⁵⁵. All these situations are summarized in Table 6.2 where it can be seen that the results of the earnings management models are not consistent.

TABLE 6.2 SITUATIONS WHERE EARNINGS MANAGEMENT IS LIKELY TO OCCUR

Situations	AA	TA	DA
Takeover target firm	✓		
Takeover control firm		✓	✓
Earnings increase			✓
Earnings increase by target	✓		
Earnings increase by control		✓	✓
Earnings loss		✓	
Earnings loss by control		✓	✓
Higher % of board ownership in target	✓		
Higher % of outside directors in control	✓		
Higher % of institutional ownership in target			✓
Audit committee in both target and control		✓	
Higher % of grey directors in control firms		✓	
Firm size for both target and control		✓	
CFO in both target and control		✓	✓
Leverage in control		✓	

⁵⁵ There is a significantly higher number of grey directors in target firms for all firm-years.

The third question relates to the effect of firm size or industry or managerial ownership and the answer is positive only for firm size effects in regressions with other variables. The research does not demonstrate any significant effect of managerial ownership. The effect of industry is omitted from the study because of the very few firms in each industry category.

The next question relates to the magnitude of the earnings management and whether or not it is material. The actual extent of earnings management measured by abnormal and discretionary accruals is relatively small in dollar terms. The interesting feature is that all three measures are negative indicating income-increasing earnings management.

TABLE 6.3

SIMPLE COMPARISON OF MEANS OF ABNORMAL ACCRUALS

	AA	TA	DA
Mean \$(000)	-.001657	-.02704	-.00977
Median	-.00185	-.02455	-.0211
N	262	273	224

Inclusion of extreme values in this type of study can affect the statistical measures. One of the problems associated with the estimate of abnormal accruals or discretionary accruals is the effect of an extreme financial performance. This study has not excluded such values. One observation⁵⁶ does have such an extreme value that, with hindsight, should have been excluded from the estimations of TA that reflects net income. Dechow et al. (1995) note that the earnings management models do not work in cases of extreme financial performance. Perry & Williams (1994) winsorise their results at 1% and 99% levels but believe the effect of a single firm's results should not have a substantial impact. However in the NZ context with such a small sample of firms the result is probably significant and probably explains the more significant level of earnings management with the TA model. The TA result is comparable, however, to the mean abnormal accruals obtained by Perry & Williams (1994) whereas the AA and DA means are less than means reported by Peasnell

⁵⁶ Fletcher Challenge Paper in 1997 reported a loss of \$385 million.

et al., (1999). Thus earnings management does occur in NZ at a slightly lower magnitude than reported elsewhere and it is probably unlikely to be material. The magnitude varies according to proxy measures and over time (see Tables 5.5 and 5.6).

The next question relates to the relationship between earnings management and corporate governance. This question is addressed by the corporate governance hypotheses and the evidence supports the relationship only with the TA models (see Tables 5.13 and 5.15)

The TA regression model is significant for both target and control firms but the only corporate governance mechanisms of significance are the existence of an audit committee (contrary to findings by Peasnell et al.(1999) which may have a constraining effect in control firms where the sign on the AC coefficient is negative. In the overall, non-partitioned significant TA model (see Table 5.15), the fraction of grey directors is significant⁵⁷ but positive so is unlikely to have a constraining effect on earnings management. The relationship in this model is significant but only for corporate governance features in the presence of significant firm attributes CFO, LEV and SIZE⁵⁸. OUT has a significant and positive coefficient in the overall non-partitioned model for both AA and TA whereas OUT for Peasnell et al.(1999) is negative. The TA model does support the hypothesis H2 for the control firms because the coefficient on OUT is significant and negative (see Table 5.13) indicating evidence of an earnings management constraint by independent directors. Ownership effects on earnings management are considered to be a feature of corporate governance. To avoid the possibility of double counting board equity ownership, in all cases where two or more directors owned the same number of shares only one block was included. A series of alternative regressions experimented with a range of different combinations of variables in an effort to strengthen the models. Thus BRDOWN*OUT is included but does not provide any significant coefficients. Considering all the regression results the institutional ownership variable has a significant negative

⁵⁷ The coefficient on the % of grey directors is significant but negative for fraud firms according to Beasley (1996).

⁵⁸ Consistent with findings by Peasnell et al.(1999).

coefficient in the TA model for target firms and the AA non-partitioned model that suggests some monitoring effect by institutional investors.

The last question regarding any beneficial effects of earnings management is not addressed at this time.

Thus NZ firms provide evidence of some sound corporate governance mechanisms that serve to constrain earnings management. The failure of US companies such as Enron can be attributed to many factors and the lack of appropriate corporate governance practices is just one aspect. In fact US corporate failures can also be attributed to audit failure as well as prescriptive or rule-based accounting standards whereas NZ firms comply with principle-based financial reporting standards. Hence NZ firms, whether target or control companies, are unlikely to fail for lack of good corporate governance practices. Firms that have weak corporate governance mechanisms are more likely to be targets of takeovers in line with disciplinary theory of takeovers. In this study the evidence indicates that the targets of takeovers do have weaker corporate governance features than control firms with respect to the number of grey directors, the percentage of outside directors, board size and board ownership (see Tables 5.10 and panel A of 5.12 and 5.18). It is interesting to note that in all of the regression results there is no effect on earnings management by the predominant “Big 4” audit firms⁵⁹.

6.2 LIMITATIONS AND FURTHER RESEARCH

The principal limitation of this research is not the methodology but the total sample size that has restricted the scope of the study. There is a thin market in NZ that has had relatively few firms subject to takeover or merger in the study period. Also there are the relatively few firms in any one industry-group for industry-effect comparisons with overseas studies. The research would have encountered even more difficulties if the study

⁵⁹ This finding is consistent with Peasnell et al. (1999).

period had been extended further back in time regarding the lack of disclosure of directors' interests prior to 1994. With few companies in each firm-size category, the results can be biased by just one extreme financial performance. Pooling of all firm-size variables is justified to maximize the sample size but in the case of accruals such a pooling fails to take account of any prior period accrual reversals hence the estimates are, at best, approximate measures of earnings management. This type of research in NZ is limited by the availability of data which has to be manually extracted from annual reports. In the US this type of data is readily available in great quantity for many years on data files such as the Compustat files.

The research did not delve into the motivational aspects of earnings management. Another limitation of this study is that the research did not address any benefits of earnings management which could be of significant interest in any future research on this topic. The study concentrates only on corporate governance factors (board size, number of independent directors and share ownership) considered important by previous researchers. While structural aspects of these mechanisms are necessary components of corporate governance to protect against fraud⁶⁰ and failure⁶¹, future research could examine the quality of directors in terms of board members' relevant qualifications, firm-specific attributes, expertise and experience. Rather than focus on board structure⁶² or composition, a study of the calibre and activity of board members and the competence of the chairman could establish a better link with corporate performance. Another factor too for consideration is the "board culture" which has been identified as a component of board failure (Jensen (1993) cited in Healy, 2003).

⁶⁰ Beasley (1996) finds no-fraud firms have a significantly higher percentage of outside directors (NEDs) than fraud firms.

⁶¹ Enron failed to comply with best corporate governance practice (Cadbury, 2002) as did HIH and One.Tel in Australia (Healy, 2003).

⁶² See Vafeas (2000).

In the context of takeover activity, further research could investigate the earnings management and corporate governance mechanisms in NZ regarding acquiring firms.

Future research too could examine before and after effects of the tightening of audit engagements⁶³ and the independent provision of auditors' financial and management consulting services in the context of earnings management and corporate governance.

Thus the possibility of further research on the topic is endless.

6.3 CONCLUDING REMARKS

In a response to the call for more research on earnings management by Healy & Wahlen (1999), this study has examined a large number of variables (both absolute values and estimated values from an even larger number of data items) all considered relevant to the research on earnings management and corporate governance in the context of New Zealand financial reporting. Although the evidence from the research is ambiguous because the earnings management models do not produce consistent results, it is apparent from the evidence that earnings management exists in NZ and is used in situations to avoid earnings losses and earnings decreases. The evidence suggests income - increasing earnings management. Takeover activity is used to partition the sample of NZ firms into targets and controls to detect whether there are signs of weak corporate governance structures that could signal whether or not a firm is likely to be a target for takeover activity.

Notwithstanding the limitations of the study, the evidence is in general agreement with evidence on earnings management and board independence⁶⁴ and ownership⁶⁵ obtained in prior studies. The research provides some insight into earnings management in the context of takeovers and supports the need for good corporate governance practice to improve the quality of financial reports by NZ companies.

⁶³ NZSE has recommended that auditors be rotated every five years (Fox, 2003).

⁶⁴ Beasley (1996).

⁶⁵ Shivdasani (1993).

LIST OF APPENDICES

- Appendix 1 Abbreviations
- Appendix 2 List of firms
- Appendix 3 Worksheet and SPSS Data File
- Appendix 4 Graphs
- Appendix 5 Examples of Statements of Corporate Governance

APPENDIX ONE

ABBREVIATIONS

AA	Abnormal accruals
ASX	Australian Stock Exchange
CEO	Chief Executive Officer
DA	Discretionary accruals
FRSB	Financial reporting standards board of ICANZ
GAAP	Generally accepted accounting practice/principles
IASC	International Accounting Standards Committee
ICANZ	Institute of Chartered Accountants of New Zealand
MBO	Management Buy Out
NED	Non executive directors
NZ	New Zealand
NZSC	New Zealand Securities Commission
NZSE	New Zealand Stock Exchange
OECD	Organisation for economic co-operation and development
R & D	Research and development
SEC	Securities and Exchange Commission (US)
TA	Total accruals
UK	United Kingdom
US	United States of America

APPENDIX TWO

LIST OF FIRMS EXAMINED

Advantage Corporation Ltd	Mainfreight Ltd
AFFCO Holdings Ltd	Michael Hill International Ltd
Carter Holt Harvey Ltd	Milburn NZ Ltd
Cavalier Corporation Ltd	Montana Group (NZ) Ltd
Cedenco Ltd	Mr Chips Ltd
Ceramco Ltd	Nuplex Industries Ltd
Dairy Brands Ltd	NZ Light Leathers Ltd
DB Ltd	NZ Rural Properties Ltd
Designer Textiles Ltd	Otter Gold Mines Ltd
Donaghys Ltd	Owens Group Ltd
Eastern Equities Ltd	PDL Holdings Ltd
EBOS Group Ltd	Progressive Enterprises Ltd
Ernest Adams Ltd	Radio Otago Ltd
Fletcher Energy Ltd	Reid Farmers Ltd
Fletcher Paper Ltd	Richmond Ltd
Fruitfed Supplies Ltd	Seafresh NZ Ltd
Grocorp Pacific Ltd	Shortland Properties Ltd
Hallenstein Glasson Holdings Ltd	South Eastern Utilities Ltd
Hellaby Holdings Ltd	Steel & Tube Holdings Ltd
Kingsgate International Corporation Ltd	St Lukes Group Ltd
Kiwi Income Property Trust Ltd	Tasman Agriculture Ltd
Lion Nathan Ltd	Taylors Group Ltd
LWR Industries Ltd	The Warehouse Group Ltd
Lyttleton Port Company Ltd	Wrightson Ltd
Macraes Mining Co Ltd	Zuellig NZ Ltd

LIST OF TARGET FIRMS MATCHED BY CONTROL FIRMS

Target firms	Total Assets/ Revenue \$000,000s/ Industry	Date of removal from NZZE/ takeover or merger by firm	Control firms	Total Assets/ Revenue \$000,000s/ Industry
Ceramco renamed Bendon Group Ltd 1999	68/84/A	2002 Pacific Retail Group Ltd	Hallenstein Glasson Holdings Ltd	53/167/R
Donaghys Ltd	97/116/M	January 2000/ Balclutha Holdings Ltd	Cavalier Corporation Ltd	127/218/M
Eastern Equities Ltd	85/105/T	November 1999/ AMP Investments, Schola Capital & Clintush Investments	Owens Group Ltd	115/365/T
Ernest Adams Ltd	38/65/F	November 1999/Goodman Fielder Intertrade Ltd	Dairy Brands Ltd	40/11/F
Fletcher Challenge Energy Ltd*	4184/1564/O	March 2001 / Shell NZ Holding Company	Lion Nathan Ltd*	3495/1530/F
Fletcher Challenge Paper Ltd*	8062/3805/M	2000/ Norske Skog	Carter Holt Harvey Ltd*	8502/3377/M
Fruitfed Supplies Ltd	14/54/P	December 1999/Williams & Kettle Ltd	Mr Chips Ltd	10/17/P
Grocorp Pacific Ltd	16/12/P	13 July 2001 Camrant Holdings Ltd	EBOS Group Ltd	35/72/C
LWR Industries Ltd	105/160/A	December 1999/ CHL Ltd	Michael Hill International Ltd	74/ 157/R
Macraes Mining Co Ltd*	216/88/O	December 1998/Gold Resources	Otter Gold Mines Ltd*	152/74/O
Milburn NZ Ltd	408/225/M	1999/ Zealhoff Holdings Ltd	Nuplex Industries Ltd	304/384/M
Montana Group (NZ) Ltd renamed from Corporate Investments Ltd	426/550/F	September 2001/ Allied Domecq	DB Group Ltd	306/533/F
NZ Light Leathers Ltd	18/26/A	1999 / Argent Group NZ Ltd	Designer Textiles Ltd	17/19/A
NZ Rural Properties Ltd	27/5/P	1999/Williams & Kettle Ltd	Cedenco Ltd	22/10/P

PDL Holdings Ltd	235/356/M	August 2001/Scheider Electronic Electric Industries SA	Steel & Tube Holdings Ltd	223/390/M
Progressive Enterprises Ltd	488/2042/R	1999/ Foodland (NZ) Holdings Ltd	The Warehouse Group Ltd	346/933/R
Radio Otago Ltd	13/13/CT	1999/Merger with Radio Pacific Ltd	Advantage Corporation Ltd	10/21/CT
Reid Farmers Ltd	108/86/P	2001/Merger Pyne Gould Guinness Ltd	Mainfreight Ltd	116/312/T
Richmond Ltd	254/892/P	2000/ PPCS ongoing t/o	AFFCO Holdings Ltd	227/836/P
Seafresh NZ Ltd	16/10/P	2002/ MBO	Taylor's Group Ltd	28/39/R
Shortland properties Ltd	164/31/I	January 2000/ Capital Properties NZ Ltd	Kingsgate International Corporation Ltd	287/87/I
South Eastern Utilities Ltd	70/24/T	March 2001/ Pyne Gould Guinness	Lyttleton Port Company Ltd	72/58/T
St Lukes Group Ltd	1015/103/I	August 2000/ merger with Westfield Trust	Kiwi Income Property Trust Ltd	670/49/I
Tasman Agriculture Ltd	289/48/P	October 2001 Voluntary liquidation	Wrightson Ltd	225/59/P
Zuellig NZ Ltd	131/435/C	1999/Wahn Investments Ltd	Hellaby Holdings Ltd	120/172/D

* Foreign exchange listing

INDUSTRY KEY

A Apparel manufacture

C Chemicals and pharmaceuticals

CT Communications and technology

D Diversified industries

F Food and beverages

I Investment properties

M Manufacturing

O Oil, gas, minerals and electricity

P Primary sector (Agriculture)

R Retail and services

T Transport

Code No:

Industry:

Target: 0

Control: O

CFO:

Total Assets:

Total Liabilities:

Non cash Current Assets:

Receivables/debtors:

Current liabilities:

Revenue:

Net Income:

Earnings loss:

Earnings decline:

Board size:

Grey:

Independent directors NED):

Executive directors:

Chairman also CEO:

Total number of shares:

Number of Board owned shares:

Number of ED owned shares:

Number of shares owned by institutions:

Block: if one shareholder $>10\%$: O if one shareholder $<10\%$ shares: O

FX listing:

Audit Committee: Yes ☐ No ☐

No O

Remuneration Committee:

Yes O

No O

Auditor:

Audit opinion:

NED remuneration:

Statement of Corporate Governance: Yes ☐ No ☐

No O

117

	Name	Type	Width	Decimals	Label	Values
1	id	Numeric	8	0	Company cod	None
2	company	String	10	0	Name	None
3	year	Numeric	2	0	Takeover Year	{1, 1998}...
4	size	Numeric	8	0	Size	{1, large}...
5	contrlco	Numeric	8	0	Control compa	None
6	cfo93	Numeric	8	0	CFO 93	None
7	cfo94	Numeric	8	0	CFO 94	None
8	cfo95	Numeric	8	0	CFO 95	None
9	cfo96	Numeric	8	0	CFO 96	None
10	cfo97	Numeric	8	0	CFO 97	None
11	cfo98	Numeric	8	0	CFO 98	None
12	cfo99	Numeric	8	0	CFO 99	None
13	cfo00	Numeric	8	0	CFO 00	None
14	cfo01	Numeric	8	0	CFO 01	None
15	lev93	Numeric	8	2	Leverage 93	None
16	lev94	Numeric	8	2	Leverage 94	None
17	lev95	Numeric	8	2	Leverage 95	None
18	lev96	Numeric	8	2	Leverage 96	None
19	lev97	Numeric	8	2	Leverage 97	None
20	lev98	Numeric	8	2	Leverage 98	None
21	lev99	Numeric	8	2	Leverage 99	None
22	lev00	Numeric	8	2	Leverage 00	None
23	lev01	Numeric	8	2	Leverage 01	None
24	execsh94	Numeric	8	4	Executive own	None
25	execsh95	Numeric	8	4	Executive own	None
26	execsh96	Numeric	8	4	Executive own	None
27	execsh97	Numeric	8	4	Executive own	None
28	execsh98	Numeric	8	4	Executive own	None
29	execsh99	Numeric	8	4	Executive own	None
30	execsh00	Numeric	8	4	Executive own	None
31	execsh01	Numeric	8	4	Executive own	None
32	instow94	Numeric	8	4	Fraction of eq	None
33	instow95	Numeric	8	4	Fraction of eq	None
34	instow96	Numeric	8	4	Fraction of eq	None
35	instow97	Numeric	8	4	Fraction of eq	None
36	instow98	Numeric	8	4	Fraction of eq	None
37	instow99	Numeric	8	4	Fraction of eq	None
38	instow00	Numeric	8	4	Fraction of eq	None
39	instow01	Numeric	8	4	Fraction of eq	None
40	brdeq94	Numeric	10	0	Equity owned	None
41	brdeq95	Numeric	10	0	Equity owned	None

	Name	Type	Width	Decimals	Label	Values
42	brdeq96	Numeric	10	0	Equity owned	None
43	brdeq97	Numeric	10	0	Equity owned	None
44	brdeq98	Numeric	10	0	Equity owned	None
45	brdeq99	Numeric	10	0	Equity owned	None
46	brdeq00	Numeric	10	0	Equity owned	None
47	brdeq01	Numeric	10	0	Equity owned	None
48	brdow94	Numeric	8	4	Fraction of eq	None
49	brdow95	Numeric	8	4	Fraction of eq	None
50	brdow96	Numeric	8	4	Fraction of eq	None
51	brdow97	Numeric	8	4	Fraction of eq	None
52	brdow98	Numeric	8	4	Fraction of eq	None
53	brdow99	Numeric	8	4	Fraction of eq	None
54	brdow00	Numeric	8	4	Fraction of eq	None
55	brdow01	Numeric	8	4	Fraction of eq	None
56	fx94	Numeric	8	0	Foreign excha	{1, no}...
57	fx95	Numeric	8	0	Foreign excha	{1, no}...
58	fx96	Numeric	1	0	Foreign excha	{1, no}...
59	fx97	Numeric	8	0	Foreign excha	{1, no}...
60	fx98	Numeric	8	0	Foreign excha	{1, no}...
61	fx99	Numeric	8	0	Foreign excha	{1, no}...
62	fx00	Numeric	8	0	Foreign excha	{1, no}...
63	fx01	Numeric	8	0	Foreign excha	{1, no}...
64	ac94	Numeric	8	0	Audit committe	{0, No audit co
65	ac95	Numeric	8	0	Audit committe	{0, No audit co
66	ac96	Numeric	8	0	Audit committe	{0, No audit co
67	ac97	Numeric	8	0	Audit committe	{0, No audit co
68	ac98	Numeric	1	0	Audit committe	{0, No audit co
69	ac99	Numeric	8	0	Audit committe	{0, No audit co
70	ac00	Numeric	8	0	Audit committe	{0, No audit co
71	ac01	Numeric	7	0	Audit committe	{0, No audit co
72	accomp	String	60	0	Audit committe	None
73	aud93	Numeric	8	0	Auditor 93	{0, Not audited
74	aud94	Numeric	8	0	Auditor 94	{0, Not audited
75	aud95	Numeric	1	0	Auditor 95	{0, Not audited
76	aud96	Numeric	8	0	Auditor 96	{0, Not audited
77	aud97	Numeric	8	0	Auditor 97	{0, Not audited
78	aud98	Numeric	8	0	Auditor 98	{0, Not audited
79	aud99	Numeric	8	0	Auditor 99	{0, Not audited
80	aud00	Numeric	8	0	Auditor 00	{0, Not audited
81	aud01	Numeric	8	0	Auditor 01	{0, Not audited
82	brdsze93	Numeric	8	0	Total board siz	None

	Name	Type	Width	Decimals	Label	Values
83	brdsze94	Numeric	8	0	Total board siz	None
84	brdsze95	Numeric	8	0	Total board siz	None
85	brdsze96	Numeric	8	0	Total board siz	None
86	brdsze97	Numeric	8	0	Total board siz	None
87	brdsze98	Numeric	8	0	Total board siz	None
88	brdsze99	Numeric	8	0	Total board siz	None
89	brdsze00	Numeric	8	0	Total board siz	None
90	brdsze01	Numeric	8	0	Total board siz	None
91	outsid93	Numeric	8	0	Number of out	None
92	outsid94	Numeric	8	0	Number of out	None
93	outsid95	Numeric	8	0	Number of out	None
94	outsid96	Numeric	8	0	Number of out	None
95	outsid97	Numeric	8	0	Number of out	None
96	outsid98	Numeric	8	0	Number of out	None
97	outsid99	Numeric	8	0	Number of out	None
98	outsid00	Numeric	8	0	Number of out	None
99	outsid01	Numeric	8	0	Number of out	None
100	dirfees	Numeric	8	0	NED's remune	None
101	firmcat	Numeric	1	0	Firm category	{1, Takeover}..
102	target	Numeric	8	0	Target	{1, Target firm
103	totass93	Numeric	8	1	Total Assets (\$	None
104	totass94	Numeric	8	1	Total Assets (\$	None
105	totass95	Numeric	8	1	Total Assets (\$	None
106	totass96	Numeric	8	1	Total Assets (\$	None
107	totass97	Numeric	8	1	Total Assets (\$	None
108	totass98	Numeric	8	1	Total Assets (\$	None
109	totass99	Numeric	8	1	Total Assets (\$	None
110	totass00	Numeric	8	1	Total Assets (\$	None
111	totass01	Numeric	8	1	Total Assets (\$	None
112	ncca93	Numeric	8	0	Non cash curr	None
113	ncca94	Numeric	8	0	Non cash curr	None
114	ncca95	Numeric	8	0	Non cash curr	None
115	ncca96	Numeric	8	0	Non cash curr	None
116	ncca97	Numeric	8	0	Non cash curr	None
117	ncca98	Numeric	8	0	Non cash curr	None
118	ncca99	Numeric	8	0	Non cash curr	None
119	ncca00	Numeric	8	0	Non cash curr	None
120	ncca01	Numeric	8	0	Non cash curr	None
121	cliab93	Numeric	8	0	Current Liabilit	None
122	cliab94	Numeric	8	0	Current Liabilit	None
123	cliab95	Numeric	8	0	Current Liabilit	None

	Name	Type	Width	Decimals	Label	Values
124	cliab96	Numeric	8	0	Current Liabiliti	None
125	cliab97	Numeric	8	0	Current Liabiliti	None
126	cliab98	Numeric	8	0	Current Liabiliti	None
127	cliab99	Numeric	8	0	Current Liabiliti	None
128	cliab00	Numeric	8	0	Current Liabiliti	None
129	cliab01	Numeric	8	0	Current Liabiliti	None
130	totrev93	Numeric	8	0	Total Revenue	None
131	totrev94	Numeric	8	0	Total Revenue	None
132	totrev95	Numeric	8	0	Total Revenue	None
133	totrev96	Numeric	8	0	Total Revenue	None
134	totrev97	Numeric	8	0	Total Revenue	None
135	totrev98	Numeric	8	0	Total Revenue	None
136	totrev99	Numeric	8	0	Total Revenue	None
137	totrev00	Numeric	8	0	Total Revenue	None
138	totrev01	Numeric	8	0	Total Revenue	None
139	rec93	Numeric	8	0	Receivables (\$	None
140	rec94	Numeric	8	0	Receivables (\$	None
141	rec95	Numeric	8	0	Receivables (\$	None
142	rec96	Numeric	8	0	Receivables (\$	None
143	rec97	Numeric	8	0	Receivables (\$	None
144	rec98	Numeric	8	0	Receivables (\$	None
145	rec99	Numeric	8	0	Receivables (\$	None
146	rec00	Numeric	8	0	Receivables (\$	None
147	rec01	Numeric	8	0	Receivables (\$	None
148	debt93	Numeric	8	0	Total liabilities	None
149	debt94	Numeric	8	0	Total liabilities	None
150	debt95	Numeric	8	0	Total liabilities	None
151	debt96	Numeric	8	0	Total liabilities	None
152	debt97	Numeric	8	0	Total liabilities	None
153	debt98	Numeric	8	0	Total liabilities	None
154	debt99	Numeric	8	0	Total liabilities	None
155	debt00	Numeric	8	0	Total liabilities	None
156	debt01	Numeric	8	0	Total liabilities	None
157	industry	String	2	0	Industry	{A, Apparel m
158	netinc93	Numeric	8	0	Net income (\$	None
159	netinc94	Numeric	8	0	Net income (\$	None
160	netinc95	Numeric	8	0	Net income (\$	None
161	netinc96	Numeric	8	0	Net income (\$	None
162	netinc97	Numeric	8	0	Net income (\$	None
163	netinc98	Numeric	8	0	Net income (\$	None
164	netinc99	Numeric	8	0	Net income (\$	None

	Name	Type	Width	Decimals	Label	Values
165	netinc00	Numeric	8	0	Net income (\$	None
166	netinc01	Numeric	8	0	Net income (\$	None
167	tshare93	Numeric	12	0	Total number	None
168	tshare94	Numeric	12	0	Total number	None
169	tshare95	Numeric	12	0	Total number	None
170	tshare96	Numeric	12	0	Total number	None
171	tshare97	Numeric	12	0	Total number	None
172	tshare98	Numeric	12	0	Total number	None
173	tshare99	Numeric	12	0	Total number	None
174	tshare00	Numeric	12	0	Total number	None
175	tshare01	Numeric	12	0	Total number	None
176	earndc94	Numeric	8	0	Earnings decli	{0, Earnings d
177	earndc95	Numeric	8	0	Earnings decli	{0, Earnings d
178	earndc96	Numeric	8	0	Earnings decli	{0, Earnings d
179	earndc97	Numeric	8	0	Earnings decli	{0, Earnings d
180	earndc98	Numeric	8	0	Earnings decli	{0, Earnings d
181	earndc99	Numeric	8	0	Earnings decli	{0, Earnings d
182	earndc00	Numeric	8	0	Earnings decli	{0, Earnings d
183	earndc01	Numeric	8	0	Earnings decli	{0, Earnings d
184	corp94	Numeric	8	0	Corporate Gov	{0, No stateme
185	corp95	Numeric	8	0	Corporate Gov	{0, No stateme
186	corp96	Numeric	8	0	Corporate Gov	{0, No stateme
187	corp97	Numeric	8	0	Corporate Gov	{0, No stateme
188	corp98	Numeric	8	0	Corporate Gov	{0, No stateme
189	corp99	Numeric	8	0	Corporate Gov	{0, No stateme
190	corp00	Numeric	8	0	Corporate Gov	{0, No stateme
191	corp01	Numeric	8	0	Corporate Gov	{0, No stateme
192	grybd94	Numeric	8	0	Number of gre	None
193	grybd95	Numeric	8	0	Number of gre	None
194	grybd96	Numeric	8	0	Number of gre	None
195	grybd97	Numeric	8	0	Number of gre	None
196	grybd98	Numeric	8	0	Number of gre	None
197	grybd99	Numeric	8	0	Number of gre	None
198	grybd00	Numeric	8	0	Number of gre	None
199	grybd01	Numeric	8	0	Number of gre	None
200	block94	Numeric	8	0	External share	{0, At least on
201	block95	Numeric	8	0	External share	{0, At least on
202	block96	Numeric	8	0	External share	{0, At least on
203	block97	Numeric	8	0	External share	{0, At least on
204	block98	Numeric	8	0	External share	{0, At least on
205	block99	Numeric	8	0	External share	{0, At least on

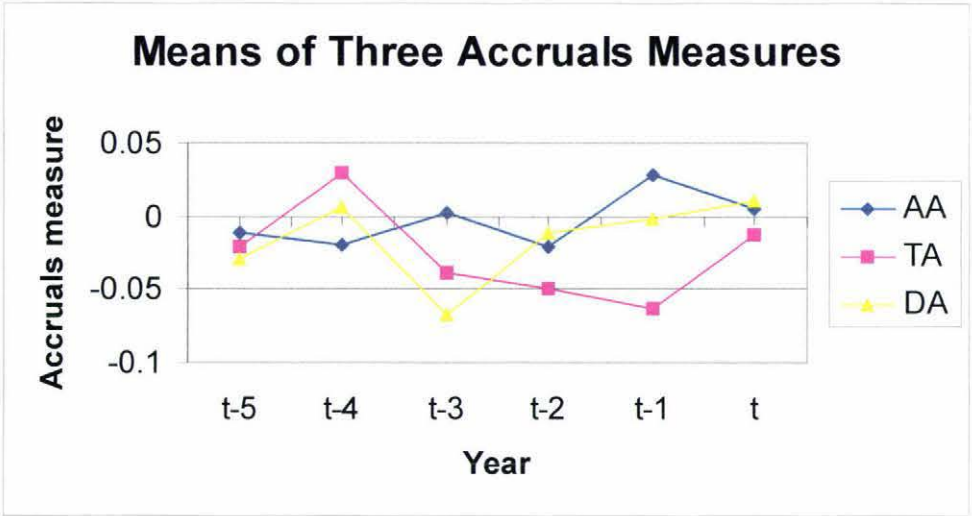
	Name	Type	Width	Decimals	Label	Values
206	block00	Numeric	8	0	External share	{0, At least on
207	block01	Numeric	8	0	External share	{0, At least on
208	eloss94	Numeric	8	0	Earnings loss	{0, Income sur
209	eloss95	Numeric	8	0	Earnings loss	{0, Income sur
210	eloss96	Numeric	8	0	Earnings loss	{0, Income sur
211	eloss97	Numeric	8	0	Earnings loss	{0, Income sur
212	eloss98	Numeric	8	0	Earnings loss	{0, Income sur
213	eloss99	Numeric	8	0	Earnings loss	{0, Income sur
214	eloss00	Numeric	8	0	Earnings loss	{0, Income sur
215	eloss01	Numeric	8	0	Earnings loss	{0, Income sur
216	wc94	Numeric	8	0	Working capita	None
217	wc95	Numeric	8	0	Working capita	None
218	wc96	Numeric	8	0	Working capita	None
219	wc97	Numeric	8	0	Working capita	None
220	wc98	Numeric	8	0	Working capita	None
221	wc99	Numeric	8	0	Working capita	None
222	wc00	Numeric	8	0	Working capita	None
223	wc01	Numeric	8	0	Working capita	None
224	boss94	Numeric	8	0	Chair also CE	{0, Chair not C
225	boss95	Numeric	8	0	Chair also CE	{0, Chair not C
226	boss96	Numeric	8	0	Chair also CE	{0, Chair not C
227	boss97	Numeric	8	0	Chair also CE	{0, Chair not C
228	boss98	Numeric	8	0	Chair also CE	{0, Chair not C
229	boss99	Numeric	8	0	Chair also CE	{0, Chair not C
230	boss00	Numeric	8	0	Chair also CE	{0, Chair not C
231	boss01	Numeric	8	0	Chair also CE	{0, Chair not C
232	out94	Numeric	8	3	Fraction of out	None
233	out95	Numeric	8	3	Fraction of out	None
234	out96	Numeric	8	3	Fraction of out	None
235	out97	Numeric	8	3	Fraction of out	None
236	out98	Numeric	8	3	Fraction of out	None
237	out99	Numeric	8	3	Fraction of out	None
238	out00	Numeric	8	3	Fraction of out	None
239	out01	Numeric	8	3	Fraction of out	None
240	audop94	Numeric	8	0	Audit opinion 9	{1, Qualified}...
241	audop95	Numeric	8	0	Audit opinion 9	{1, Qualified}...
242	audop96	Numeric	8	0	Audit opinion 9	{1, Qualified}...
243	audop97	Numeric	8	0	Audit opinion 9	{1, Qualified}...
244	audop98	Numeric	8	0	Audit opinion 9	{1, Qualified}...
245	audop99	Numeric	8	0	Audit opinion 9	{1, Qualified}...
246	audop00	Numeric	8	0	Audit opinion 0	{1, Qualified}...

	Name	Type	Width	Decimals	Label	Values
247	audop01	Numeric	8	0	Audit opinion 0	{1, Qualified}...
248	balance	String	9	0	Balance date	None
249	comments	String	51	0	narrative	None
250	remunera	String	50	0	Remuneration	None
251	chrev94	Numeric	8	0	Change in rev	None
252	chrev95	Numeric	8	0	Change in rev	None
253	chrev96	Numeric	8	0	Change in rev	None
254	chrev97	Numeric	8	0	Change in rev	None
255	chrev98	Numeric	8	0	Change in rev	None
256	chrev99	Numeric	8	0	Change in rev	None
257	chrev00	Numeric	8	0	Change in rev	None
258	chrev01	Numeric	8	0	Change in rev	None
259	chrec94	Numeric	8	0	Change in rec	None
260	chrec95	Numeric	8	0	Change in rec	None
261	chrec96	Numeric	8	0	Change in rec	None
262	chrec97	Numeric	8	0	Change in rec	None
263	chrec98	Numeric	8	0	Change in rec	None
264	chrec99	Numeric	8	0	Change in rec	None
265	chrec00	Numeric	8	0	Change in rec	None
266	chrec01	Numeric	8	0	Change in rec	None
267	dirremu	Numeric	8	0	Non executive	None
268	filter_\$	Numeric	1	0	size = 3 (FILT	{0, Not Selecte

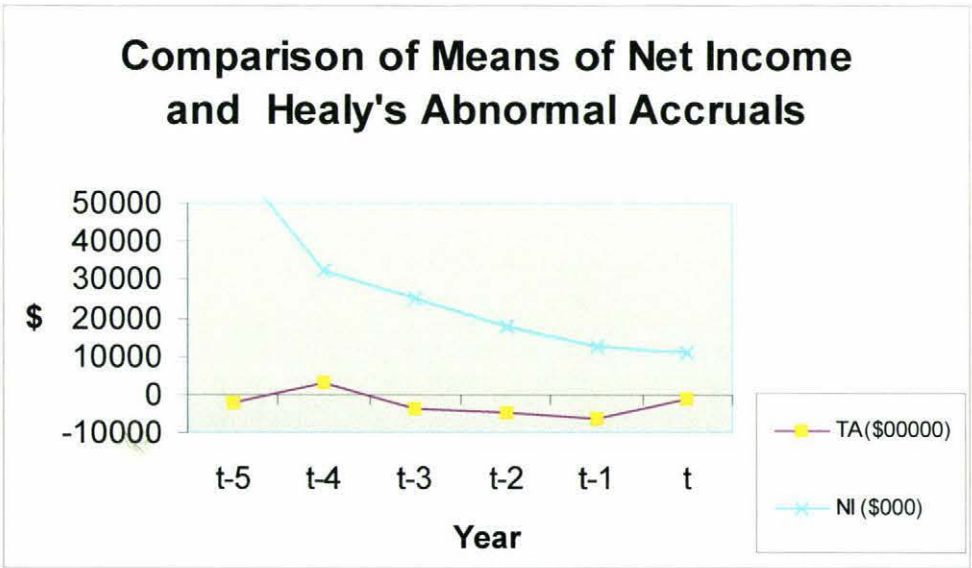
APPENDIX FOUR GRAPHS

TRENDS IN ACCRUALS MEASURES

Graph 1

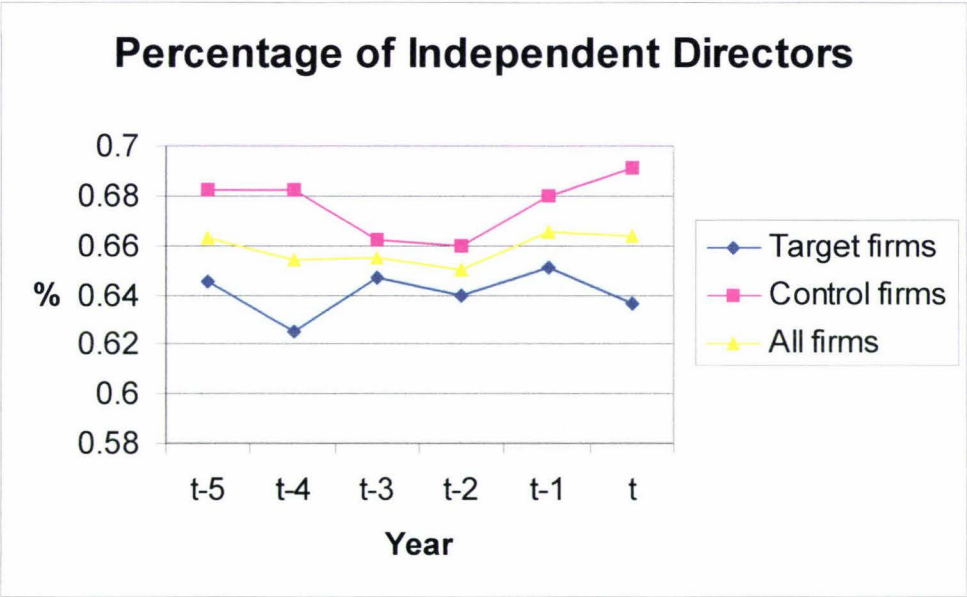


Graph 2

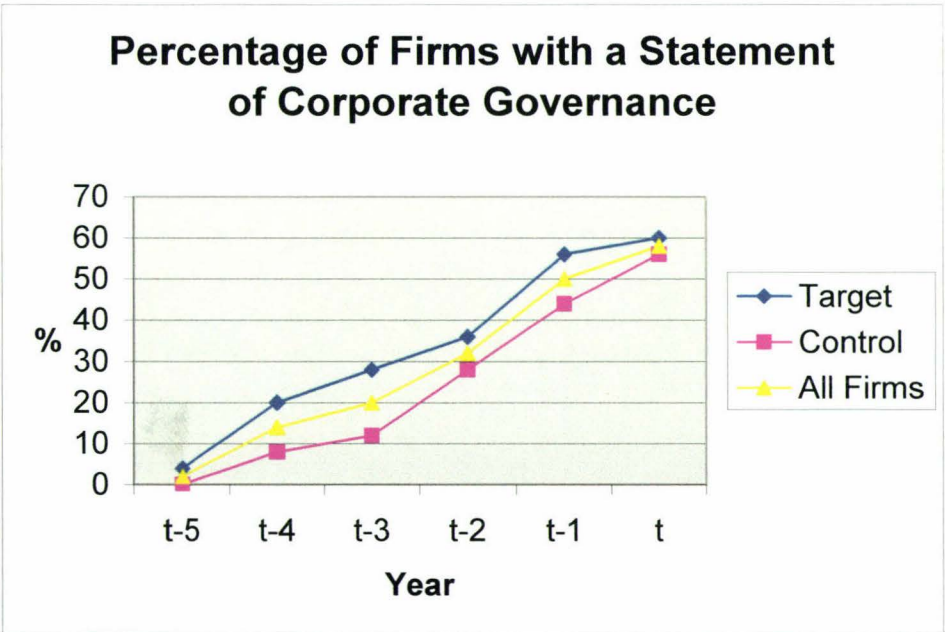


TRENDS IN CORPORATE GOVERNANCE DISCLOSURES

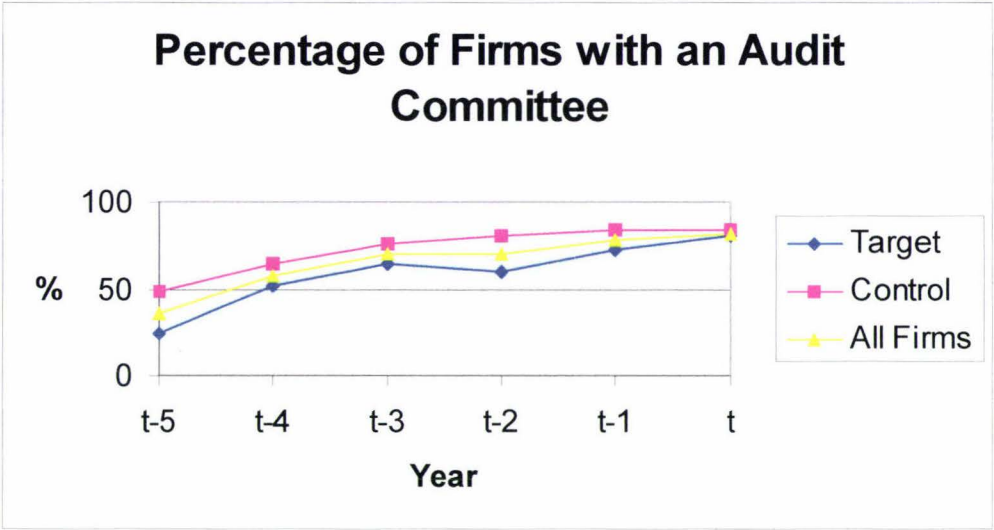
Graph 3



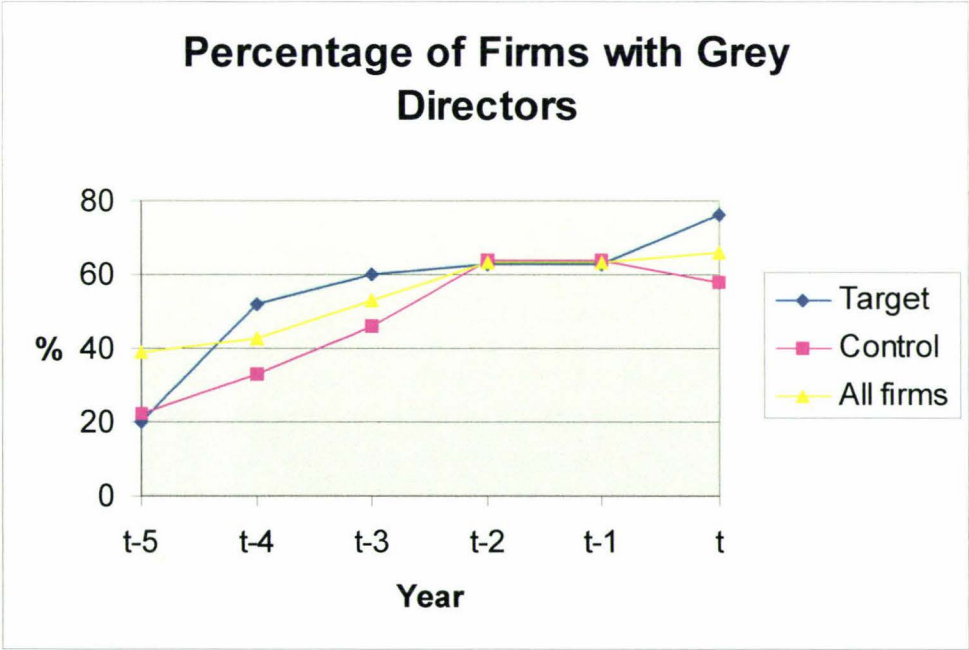
Graph 4



Graph 5

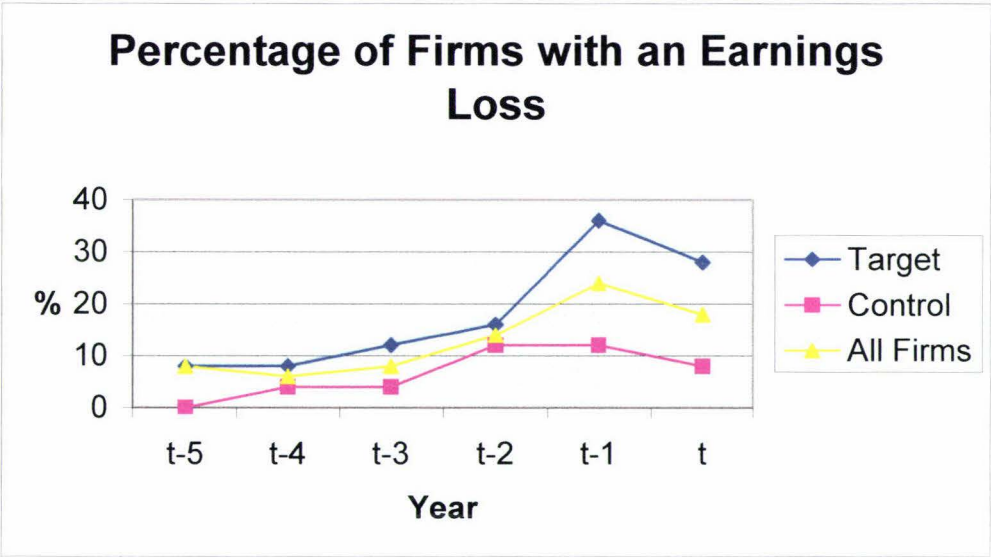


Graph 6

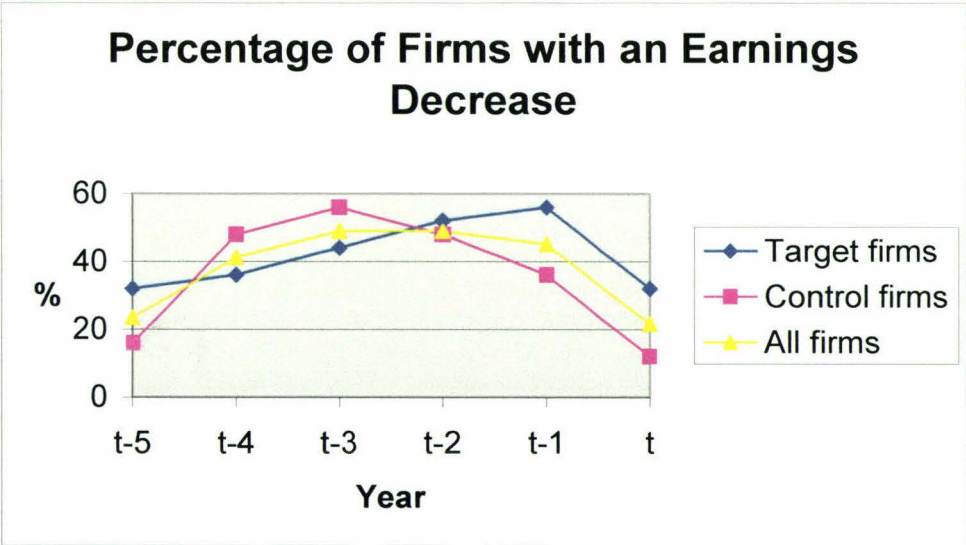


TRENDS IN EARNINGS LOSSES AND EARNINGS DECREASES

Graph 7



Graph 8



APPENDIX FIVE STATEMENTS OF CORPORATE GOVERNANCE

These examples are extracted from annual reports of the following companies:

Donaghys, 1998

Hellaby Holdings, 2000

Montana Group, 2001

Macraes Mining, 1998

Lion Nathan, 2000

Extract from Annual Report of Donaghys Ltd, 1998

Group sales for the year were \$110.85 million which was marginally ahead of the previous year. After charging the restructuring costs of \$7.53 million, the Group incurred a net loss of \$5.93 million.

During the year, the Group sold its 65% shareholding in Stafix Electric Fencing Limited for a consideration in excess of its carrying value, thus allowing Donaghys to focus on the manufacture and distribution of its polywire and hottape products to all electric fencing distributors.

Following the write-off of goodwill and write-down in value of some assets, the Group's balance sheet and financial position remain strong, with Shareholders' Funds of \$53.81 million which represent an asset backing of \$1.76 per share.

At balance date, the Group's debt to debt plus equity ratio was 31% and current assets to current liabilities ratio was 2.94:1, with the Group generating a positive net operating cash flow of \$1.92 million.

The Directors have declared a dividend of three cents per share unimputed, which will be paid on 30 October 1998.

Corporate Governance

The Board of Directors is the governing body of Donaghys Limited and has primary responsibility to oversee all corporate governance issues and to ensure that the business of the Group is conducted in the best interests of all shareholders and with appropriate consideration of corporate responsibility to other stakeholders.

This function also encompasses the fostering of the corporate culture, responsibility for the appointment and remuneration of senior executives, the adoption of corporate policies, the approval of transactions of substance and the review of business risks.

Group Management Structure

The Group is structured into four semi-autonomous divisions, with the General Manager of each division and the Group Financial Controller reporting to the Group Managing Director.

Board Membership and Operation

The Board now comprises five Directors, of which four are non-executive Directors, one of whom is the Chairman. The Group Managing Director is a member of the Board.

Last year, the Board included two additional executive Directors, but Mr Mander resigned to return to his former employer and Mr Ware resigned to remain in Dunedin.

In June 1998, the Directors appointed Mr Ross Callon as Group Managing Director of Donaghys Limited. Mr Callon has considerable experience in financial and management positions in the United Kingdom and New Zealand, and has been a senior executive in the Donaghys Group for more than ten years.

Statutory Information

Corporate Governance Statement

The main corporate governance policies, practices and processes for the Hellaby Holdings Group are:

Role of Shareholders

- To appoint members to the board of directors in general meeting.
- To receive and consider interim and annual reports, financial statements and audit reports.
- To consider and if acceptable approve major transactions and such other matters as required by statute, company's constitution and/or on the referral from the board of directors.
- To evaluate the performance of the board of directors and the company.

Role of Board of Directors

- To enhance the value of Hellaby Holdings shares and returns thereon relative to sharemarket trends and economic conditions.
- To evaluate investment business opportunities on an ongoing basis.
- To undertake the stewardship responsibilities of the company.
- To appoint the chief executives of the operating businesses.
- To discharge the duties and responsibilities of directors as embraced under statute and common law, and in accordance with the company's constitution and the standards required of public listed companies.

Role of Management

- To discharge directives of the board of directors in a professional and timely manner.
- To manage the business affairs of the group effectively and to maximise the operational performance relative to the business environment.
- To fully inform the board of directors of all relevant matters.
- To comply with statutory requirements, including health and safety, resource management and building acts.

Director's Shareholding

	30.6.00 Shares	30.6.99 Shares
W.J. Falconer	440,000	440,000
D.M.J. Houldsworth - Managing Director	243,220	243,220
A. Borren	-	-
W.B. Capp	70,000	70,000
R.W. Carter	-	-
H. Green	-	-

Holdings by associated parties:

- R.W. Carter and H. Green are associated with Green and McCahill Group, beneficial owners of 16,383,000 shares (32.5%)
- A. Borren's family trust, Quatro Management, holds 4,000,000 shares (8.0%)
- A. Borren's private company Demi Holdings holds 350,000 shares (0.7%)
- W.B. Capp's family superannuation trust holds 56,315 shares (0.1%)
- R.W. Carter's family trust holds 234,985 shares (0.5%)

Dealings in Hellaby Shares by Directors & Related Parties

30 September 1999

Purchase of shares at \$1.60 per share:

• Castle Investments Limited	1,125,000	shares
• Demi Holdings Limited	300,000	shares
• R.W. Carter Family Trust	9,000	shares
• Letterkenny Lodge Limited	8,000	shares

Disclosure of interest by Directors and Related Parties

W J Falconer

- Shares in Total Metering Limited acquired November/December 1997 (prior to Hellaby's August 1999 investment) at a cost of \$1.00 per share 110,000 shares

R W Carter Family Trust

- Shares in New Zealand Wool Services International Limited acquired February/March 2000 at an average cost of 21.25 cents per share 20,000 shares

Corporate Governance

Board

The Board consists of an Executive Chairman, one Executive Director and five Non-executive Directors who meet formally eleven times per annum and informally whenever required.

The Constitution of the Company requires that one third of the Board must retire at each annual meeting of shareholders. Retiring directors are eligible for re-election.

Board Responsibilities

The Board of Directors, having been elected by shareholders, is responsible for the direction, corporate governance and monitoring of the Group's business and affairs. Specifically the Board:-

- Determines in conjunction with management the strategic plans of the Group and regularly reviews and revises long and short-term objectives.
- Appraises and approves all major transactions of capital expenditure or divestment.
- Appoints and monitors performance of senior executives.
- Manages risk by ensuring that Group companies implement adequate systems of internal control together with appropriate monitoring of compliance activities.

Audit Committee

A board Audit Committee, comprising the Executive Chairman and two Non-executive Directors, meet at least twice yearly with external auditors and management to review and discuss the Group's financial statements, announcements and related issues.

Independent Advice

The Board and management clearly understand that before a Group company is placed at any financial or social risk through any action or inaction, proper and timely professional advice should be sought.

Share Dealing

Montana Group (NZ) Limited has adopted a code of conduct in respect of share dealing that strictly follows the Insider Trading (Approved Procedures for Company Officers) Amendment Notice 1996 of the Securities Amendment Act 1988.

No Director or officer is to trade in company securities without first seeking the consent of the Board.

Statutory Compliance

At no longer than quarterly intervals the Board requires of management a full report on the Group's current compliance with pertinent governmental and local regulations. Full details are required of any matters subject to litigation or potential litigation as is confirmation that appropriate action is being taken to alleviate claims, fines or social injustice.

Year 2000

The following is a copy of the company's latest 'Year 2000 Information Disclosure Statement' given to the NZSE on 23 August 1999.

"The Board of Montana Group (NZ) Limited first addressed the potential problem of business systems not being Y2K compliant in June 1997. Since that date the various management groups within the Group have been reviewing computer applications and operations both internally and externally with a view to either remedying or replacing any aspect that may cause a problem.

From a recent full Group review presented to the Parent Board in July 1999 it is assessed that:

- (a) There are no major outstanding exposures arising from internal systems, from suppliers or customers.
- (b) The outstanding business risk from identified non-compliant systems, if not corrected or replaced in time, would be low.
- (c) The only area of Group business that may suffer significantly from factors outside the control of the business is with the travel industry, however this forms only a minor part of Group business.
- (d) The major non-compliant business system within the Group was replaced in May 1999. Other systems have either been confirmed by their manufacturer/supplier as being compliant or are in the process of being upgraded.

The process of reviewing potential exposures, testing, upgrading or replacing, and formation of contingency plans, will continue until Year 2000.

Contingency plans appear to be particularly relevant in the travel industry and are either already formulated or being developed currently.

Where reasoned necessary the operating units within the Group have sought external assistance in verification of Y2K compliance of its various systems.

At this stage it is assessed that any remaining non-compliant systems do not require special provision for remedial costs outside normal operational budgets".

CORPORATE GOVERNANCE STATEMENT

General

The Board of Directors is responsible to holders of the Company's securities for ensuring that the Company's affairs are properly managed and for setting the Company's strategic direction and goals. The day to day management of the Company is the responsibility of the Managing Director and the management team.

The Board and the management team work closely together and the performance of each depends particularly on mutual confidence, teamwork and a sense of common purpose. This close working relationship is actively fostered by the Chairman, the Managing Director and the Board.

The Company's policy is to maintain commercial expertise on the Board relevant to the Company's current and anticipated business activities.

Any Director or Committee of the Board can seek independent external advice, as considered necessary, at the Company's expense.

Committees

The Board maintained the following Committees throughout the year:

Audit;
Remuneration;
Investment; and
Executive.

The members of the Committees are:

	Audit	Remuneration	Investment	Executive
B T Fogarty			✓	✓
P O'Connor				✓
J G E Benton	✓	✓	✓	
T G Stapleton	✓			
K A Westland		✓		

In brief, the Committees' terms of reference are:

- Audit:** to provide the Board with additional assurance regarding the Company's audit and the quality and reliability of financial information prepared for use by the Board in determining policies or for inclusion in financial statements. The Company's external auditors are asked to participate in meetings of this Committee as required.
- Remuneration:** to review the Executive Directors' compensation in order to align with individual contribution, expertise, market considerations and shareholder expectations.
- Investment:** to formulate, maintain and review with Senior Management the Company's overall investment strategy.
- Executive:** to direct Senior Management to ensure the Company's activities align with its strategic plans and to facilitate timely Board responses in relation to the Company's activities and progress. This Committee also addresses the Company's management of business risk.

Directors not formally appointed to the Committees may attend and participate at any of the Committees' meetings.

The Board endorses the development and maintenance through its Committees and Senior Management of the Company's corporate governance, ethical, occupational health and safety and environmental standards to reflect the most appropriate New Zealand and/or international practices.

Internal Controls, Risk Management and Maintaining Ethical Standards

The Company has in place procedures designed to safeguard the Company's assets and interests and ensure the maintenance of ethical standards and integrity of its reporting. These include accounting, financial reporting and internal control policies and procedures. Funding, cash management, financial instruments and gold and foreign exchange derivatives are managed through a set of policies, procedures and limits that are subject to internal and external review. Further details of the Company's policies relating to financial instruments and commodity derivatives are included in the notes to the financial statements. An overall framework has been developed, and guidelines formulated, for risk management structures and processes in areas other than financial risk.

corporate governance

Board of Directors

Role of the Board

The Board is responsible for setting the Company's overall strategic direction and delegates responsibility for the management of the Company to the Chief Executive Officer.

The Board's focus is on the creation of shareholder wealth and on ensuring that the Company is run in accordance with best international management practices.

The specific functions of the Board are:

- establishing long term goals and approving strategies to achieve these goals;
- approving annual operating plans and regularly reviewing performance against plan;
- appointing, evaluating and rewarding senior management;
- considering management proposals including material capital expenditures and divestments, and providing input and approvals where appropriate;
- ensuring that the Company has implemented adequate systems of internal controls in areas such as risk management, occupational health and safety and environmental compliance; and
- ensuring that the Company acts legally and responsibly, and that the highest ethical standards are maintained.

Composition of the Board

There are nine directors on the Board, seven non-executive directors and two executive directors. During the period, two directors, Mr Douglas Myers and Mr Michael Smith, retired and one new director, Mr Glenn Barnes, was appointed. The Board is looking to appoint up to two additional directors. The names and qualifications of the directors can be found on page 53.

Four of the directors are directors or employees of the Company's largest shareholder, Kirin Brewery Company Limited ("Kirin"), which acquired a 45 per cent shareholding in the company in April 1996. At that time it was agreed that Kirin would have four seats on the Board and that Mr Douglas Myers would remain as chairman for a further three years. With the retirement of Mr Myers, the Board unanimously appointed Mr Geoffrey Ricketts, Chairman, effective 2 August 2001.

Where a casual vacancy on the Board arises during the year, the Board endeavours to select the most suitable candidate with the appropriate expertise and experience to ensure a balanced and effective board. A director appointed during the year to fill a casual vacancy or as an addition to existing directors holds office until the next Annual General Meeting and is eligible for re-election.

The Company's shareholders are responsible for voting on the appointment of directors. In appointing new directors, a balance between sound business experience and relevant industry knowledge is sought. Directors are subject to re-election by rotation at Annual General Meetings. One third of the directors or any other director who has held office for three years or more must retire. All directors are eligible for re-election and may be re-elected by resolution at the same Annual General Meeting at which they retired.

The directors appoint a Chief Executive Officer for a period of up to 5 years. He/she is exempt from retirement by rotation and is not counted in determining the number of directors to retire by rotation.

There is no maximum term for directors and no share qualification.

The Company recognises that non-executive directors play important role in supervising executive management. Accordingly, its policy is to keep the roles of Chairman and Chief Executive Officer separate.

Operation of the Board

The Board and committees meet regularly to review strategies and operational performance. In addition, Board members receive regular updates from management on key issues between Board meetings. In the course of their regular activities, Board members are exposed to a wide cross section of the Company's management. The Chairman and Chief Executive Officer meet regularly to discuss issues relating to the business and set Board agendas.

In accordance with the Corporations Act 2001 and the Company's constitution, directors are required to keep the Board advised of any interests they have that could potentially conflict with those of Lion Nathan.

The Board has a policy under which individual directors and Board committees may obtain independent professional advice at the Company's expense in the execution of their duties.

Committees of the Board

The Board has established three sub-committees with clearly defined responsibilities in relation to leadership development and compensation, audit and finance, and strategy.

They enable appropriate involvement by directors, ensure contestability of opinion, and raise the level of interaction with management.

Leadership and Compensation Committee

The Board has established the Leadership and Compensation Committee consisting of the following directors:

- Mr Kevan Gosper (chairman)
- Mr Glenn Barnes
- Mr Gordon Cairns
- Mr Shigeki Ota

The Leadership and Compensation Committee reviews the Company's leadership and development program, compensation levels and structure, senior management performance, and Chief Executive officer succession planning. In fixing compensation levels the Board's aim is to benchmark to the top quartile of similar companies. The Board also believes that linking compensation to performance is a key driver of company success. Accordingly, senior executives have a significant portion of their remuneration at risk.

corporate governance - continued

Audit and Finance Committee

The Board has established an Audit and Finance Committee consisting of three directors. The current members of this Committee are:

- Mr Geoff Ricketts (chairman)
- Mr Hirotake Kobayashi
- Mr Gavin Walker

The Audit and Finance Committee provides a forum for the effective communication between the Board and external and internal auditors. This committee reviews:

- the annual and half-year financial report prior to their approval by the Board;
- the effectiveness of management information systems, and systems of internal control;
- the efficiency and effectiveness of the internal and external audit functions, including reviewing the respective audit plans;
- the effectiveness of the risk management and treasury policies within the Company; and
- capital expenditure proposals.

The Audit and Finance Committee invites the Chief Financial Officer, Group Finance Director, and the external and internal auditors to attend its meetings. The committee also meets with and receives regular reports from the external and internal auditors concerning any matters which arise in connection with the performance of their respective roles, including the adequacy of internal controls.

The Board ensures that recommendations made by the external and internal auditors and other external advisers are investigated and, where considered necessary, action is taken to ensure that the Company has an appropriate internal control environment in place to manage the key risks identified.

Strategy Committee

As part of the Board's commitment to the ongoing performance of the company, a Strategy Committee has been established.

The current members of the committee are:

- Mr Gavin Walker (chairman)
- Mr Gordon Cairns
- Mr Hirotake Kobayashi
- Mr Geoff Ricketts
- Mr Glenn Barnes

This committee generally meets monthly during the year to discuss matters, such as corporate strategy, business unit strategy, acquisitions, divestments, alliances and major capital expenditure. It then makes recommendations to the Board on matters that require Board approval, and engages the Board in discussion on other matters. During the Montana take-over, this committee was actively involved and met on a regular basis to discuss issues with management and make recommendations to the Board.

Kirin Relationship

In April 1998, Kirin acquired 246 million shares (45 per cent) in Lion Nathan Limited at NZ\$5.40 per share. As a result of the Company's share buyback which occurred during the period May to July 2000, in which Kirin elected not to participate, its shareholding increased to 46.13 per cent.

At the time of its investment, Kirin wrote to the Board of Lion Nathan recording the principles and understandings which it

had offered in respect of its investment in Lion Nathan. That letter covered a range of corporate governance issues including:

- Board representation;
- Level of shareholding;
- Operational understandings;
- Management understanding; and
- Dividend policy understandings.

It was agreed that these understandings and principles would be in place for three years but that at the expiration of three years there would be a review, conducted in good faith, to explore how the relationship should be governed going forward.

As a result of Kirin's review, a new letter of understanding was signed on 12 September 2001. A copy of that letter was filed with the Australian and New Zealand Stock Exchanges and is available to shareholders on request from the Company. By way of summary, the Partnership Principles included:

- A commitment to remain a long-term shareholder in Lion Nathan and to maximise value for all shareholders;
- An intention to retain its shareholding at the current level of 46.13 per cent;
- A commitment to the current Board structure and to the highest standards of corporate governance. Retention of four Kirin directors on a Board of up to eleven;
- A commitment to Lion's three pronged strategy of building a strong platform in beer, growing a wine business and exploring related businesses in the leisure and hospitality market;
- Continuation of the practice of Chief Executive Officer and other key appointments being made by the Board;
- Support for practice of incentive based remuneration linked to Company performance; and
- Dividend policy to remain the prerogative of the Board.

Shareholder Relations

The Board is committed to keeping shareholders fully informed of all major developments affecting the Company and ensuring shareholders have the opportunity to participate fully by:

- preparing half yearly financial reports and making these available to all shareholders;
- informing shareholders of the key issues affecting the company;
- disclosing material developments to the stock exchange and media as they occur;
- holding Annual General Meetings which enable shareholders to receive reports by the Board of the Company's activities and to ask questions of the Board. All shareholders who are unable to attend these meetings are encouraged to communicate issues or ask questions by writing to the Company; and
- publishing regular news articles and performance updates on the company's website (www.lion-nathan.com) in a timely fashion and giving all shareholders and other interested parties direct access to management's key external presentation material and webcasts of important announcements and briefings including the Annual General Meeting which will be broadcast live.

corporate governance – continued

The Company has a disclosure policy which is designed to ensure that the market is kept fully informed, by way of a commitment to continuous disclosure. It also conducts its affairs in such a way as to ensure that there is no differential disclosure of material information. It regularly benchmarks its disclosure policies and activities against best practices both domestically and internationally and continues to be rated highly for communications with shareholders and the financial markets.

Management Remuneration

Non-Executive Directors' Fees

Fees for non-executive directors are based on the nature of their work and their responsibilities. The level of fees is assessed having regard to professional advice obtained on current market practices, particularly as they relate to companies similar to Lion Nathan. The total level of fees is currently \$480,000 per annum. At this year's AGM it is proposed that this be increased to a maximum \$700,000 to accommodate the proposed appointment of two new directors.

Non-executive director's fees are \$75,000 per director per year. The Chairman receives an annual fee of \$200,000. Non-executive directors do not receive committee attendance fees, incentive based remuneration or participate in employee share schemes. They are however eligible to receive retirement benefits determined by the directors but not exceeding the amount permitted to be paid by the Corporations Act. During the year, Messrs Smith and Myers were entitled to receive retirement benefits of \$187,808 and \$375,615 respectively.

Messrs Y. Satoh, N. Asano, S. Ota and H. Kobayashi, all of whom are directors or employees of Kirin, did not receive any remuneration or other benefits from the Company or its controlled subsidiaries. Their services, together with those of other Kirin personnel, are made available to the Company pursuant to a Strategic and Management Advice Agreement under which Kirin receives fees for the provision of those personnel.

In addition, all directors who at the request of the Board perform additional or special duties for the Company, receive remuneration via payment of consultancy services. Directors are also entitled to be reimbursed by the Company for reasonable travelling, accommodation and other expenses they may incur whilst travelling to or from meetings of the directors or committees. Full details of remuneration of all directors and key senior executives is set out on pages 56 and 57.

Executive Directors' Fees

The Chief Executive Officer's total remuneration is disclosed on page 57. He does not receive directors' fees in addition to this amount. A significant proportion of his remuneration is performance based with the key criteria being the performance of the business itself, and the growth in the company's share price. The proportion of the package which is performance based varies from year to year but would typically be around 60 percent of total remuneration. A portion of the performance based remuneration is paid annually based on annual performance. The balance is accrued over three years based on medium term results. Further details regarding the remuneration for senior executives are contained in the Directors' Statutory Report

Share Trading

The Company has a Code of Practice governing the sale and purchase of Lion Nathan shares by directors and employees. Short term trading in Lion Nathan shares, and buying or selling while in possession of unpublished price sensitive information, is expressly prohibited. In addition, directors and senior management are only permitted to buy or sell Lion Nathan shares one month following interim and final profit announcements. This group of personnel must also obtain the written consent of the Company Secretary prior to any transaction involving Lion Nathan shares.

Risk Management

The objectives of Lion Nathan in its approach to risk management are to improve business performance, create value and manage exposures through optimising the cost of managing business risk and making informed and conscious risk management choices on a Company wide basis.

The Board has approved principles and policies to manage financial risks of exposures to foreign currencies, commodity prices and interest rates. Lion Nathan policies have been designed to promote non-speculative treasury management, restrict hedging to preset limits, and require senior management approval of hedging instruments. The policies specify who may authorise transactions and segregate duties of those carrying them out. The policy statement is reviewed, updated and resubmitted to the Board for approval annually. The Board requires managers of Lion Nathan businesses to identify areas of risk, to quantify those risks, and for Treasury to adopt cost-effective strategies to manage Lion Nathan's exposure to the risks. Lion Nathan's internal audit team reports to the audit committee on the management of key risks.

REFERENCES

- Adiel, R. (1996). Reinsurance and the management of regulatory ratios and taxes in the property- casualty insurance industry. *Journal of Accounting and Economics*, 22(1-3), 207 - 240.
- Bartlett, S. A., & Chandler, R. A. (1999, September). The private shareholder, Corporate governance and the role of the annual report. *Journal of Business Law*, 415 - 428.
- Bartov, E. (1993). The timing of asset sales and earnings management. *The Accounting Review*, 68, 840 - 855.
- Baumann, G. (2002). *Corporate governance*, Professional development course paper No. S.668, Institute of Chartered Accountants of New Zealand. Wellington.
- Beasley, M. S. (1996). An empirical analysis of the relation between the board of director composition and financial statement fraud. *The Accounting Review*, 71(4), 443 - 465.
- Beneish, M. D. (1998). Detecting GAAP violation: Implications for assessing Earnings management among firms with extreme financial performance. *Journal of Accounting and Public Policy*, 16, 271 - 309.
- Black, E. L., Sellers, K. F., & Manly, T. S. (1998). Earnings management using asset sales: an international study of countries allowing noncurrent asset revaluation. *Journal of Business Finance and Accounting*, 25(9), 1287 - 1317.
- Burgstahler, D., & Dichev, I. (1997). Earnings management to avoid earnings decreases and losses. *Journal of Accounting and Economics*, 27(1), 99 - 126.
- Burgstahler, D., & Eames, M. (2000). *Earnings management to avoid losses and small decreases: Are analysts fooled?* Working paper, University of Washington, Seattle.
- Bushee, B. (1998). The influence of institutional investors on myopic R & D investment behaviour. *The Accounting Review*, 73(3), 305 - 333.
- Cadbury, A. (2002). *Corporate governance and chairmanship: A personal view*. Oxford: Oxford University Press.
- Cadbury Report. (1992). *Report of the committee on the financial aspects of corporate governance*. London: Gee.

- Cahan, S. (1992). The effect of antitrust investigations on discretionary accruals: A refinement of the political cost hypothesis. *The Accounting Review*, 67, 77 -95.
- CCH. (1999). *Corporate governance: A director's handbook*. CCH New Zealand Ltd.
- Companies Act 1993
- Cooke, T. E. (1992). The impact of size, stock market listing and industry type on disclosure in the annual reports of Japanese listed corporations. *Accounting and Business Research*, 22(87), 229 - 237.
- Cotter, J. (1999). Asset revaluations and debt contracting. *Abacus*, 35(3), 268 - 285.
- DeAngelo, L. (1986, July). Accounting numbers as market value substitutes: A study of managerial buyouts of public stockholders. *The Accounting Review*, 400 -420.
- DeAngelo, L. (1988). Discussion of evidence of earnings management from the provision for bad debts. *Journal of Accounting Research*, 26(Supplement), 32 - 40.
- Dechow, P. M., & Sloan, R. (1991, March). Executive incentives and the horizon problem: an empirical investigation. *Journal of Accounting and Economics*, 14, 51 - 89.
- Dechow, P. M., Sloan, R., & Sweeney, A. (1995). Detecting earnings management. *The Accounting Review*, 70, 193 - 225.
- Dechow, P. M., Sloan, R. & Sweeney, A. (1996). Causes and consequences of earnings manipulation: An analysis of firms subject to enforcement actions by the SEC. *Contemporary Accounting Research*, 13, 1 - 36.
- Dechow, P. M., & Skinner, D. J. (2000). Earnings management: Reconciling the views of accounting academics, practitioners and regulators. *Accounting Horizons*, 14 (2), 235 - 250.
- DeFond, M. L., & Jambalvo, J. (1994). Debt covenant violation and the manipulation of accruals. *Journal of Accounting and Economics*, 17, 145 - 176.
- DeFond, M. L., & Park, C. W. (1997). Smoothing income in anticipation of future earnings. *Journal of Accounting and Economics*, 23, 115 - 139.
- Demirag, I., Sudarsanam, S., & Wright, M. (2000). Corporate governance: Overview and research agenda. *British Accounting Review*, 32, 341 - 354.
- Eddey, P. H., & Taylor, S. L. (1999). Directors' recommendations on takeover bids and the management of earnings: evidence from Australian takeovers. *Abacus*, 35(1), 29 - 45.

- Erickson, M., & Wang, S. (1999). Earnings management by acquiring firms in stock for stock mergers. *Journal of Accounting and Economics*, 27, 149 - 176.
- Fama, E., & Jensen, M. C. (1983). Separation of ownership and control. *Journal of Law and Economics*, 26(2), 301 - 325.
- Financial Reporting Act 1993.
- Flew, A. (1984). *A dictionary of philosophy*. London: Pan Books.
- Fox, A. (2003, May 7). New code to keep directors in line. *Dominion Post*, p. C1.
- Frantz, P. (1999). Discretionary write-downs, write-offs, and other restructuring provisions: A signalling approach. *Accounting and Business Research*, 29(2), 109 - 121.
- Guay, W. R., Kothari, S. P., & Watts, R. L. (1996) A market-based evaluation of discretionary accruals models. *Journal of Accounting Research*, 34 (Supplement), 85 - 105.
- Guidry, F., Leone, A., & Rock, S. (1999 January). Earnings based bonus plans and Earnings management by business unit managers. *Journal of Accounting and Economics*, 26 , 113 - 142.
- Hall, S. C., & Stammerjohan, W. W. (1997). Damage awards and earnings management in the oil industry. *The Accounting Review*, 72(1), 47 - 65.
- Healy, J. (2003). *Corporate governance and wealth creation in New Zealand*. Palmerston North: Dunmore Press.
- Healy, P. M. (1995). The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics*, 7, 85 - 107.
- Healy, P. (1996) Discussion of a market-based evaluation of discretionary accruals models. *Journal of Accounting Research*, 34 (Supplement) 107 - 115.
- Healy, P. M., & Wahlen, J. M. (1999). A review of the earnings management literature and its implications for standard setting. *Accounting Horizons*, 13 (4), 365 - 383.
- Ho, S. M., & Wong, K. S. (2001). A study of the relationship between corporate governance structures and the extent of voluntary disclosure. *Journal of International Accounting, Auditing and Taxation*, 10, 139 - 156.
- Institute of Chartered Accountants of New Zealand. (2000). FRS - 15: Provisions, contingent liabilities and contingent assets. *New Zealand Accounting Standards*. Wellington: Institute of Chartered Accountants of New Zealand.

- Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Management behaviour, agency costs and ownership structure. *Journal of Financial Economics*, 3(3), 305 - 360.
- Jensen, M. (1988). Takeovers: their causes and consequences. *Journal of Economic Perspectives*, 2, 21 - 48.
- Jones, J. (1991). Earnings management during import relief investigations. *Journal of Accounting Research*, 29, 193 - 228.
- Kaplan, S. N., & Reishus, D. (1990). Outside directorships and corporate performance. *Journal of Financial Economics*, 27, 389 - 410.
- Kasznik, R. (1999, Spring). On the association between voluntary disclosure and Earnings management. *Journal of Accounting Research*, 37, 57 - 82.
- Levitt, A. (1998, September 28). *The numbers game*. Speech delivered at the NYU Center for Law and Business, New York, NY.
<http://www.sec.gov/news/speeches/spch220.txt>.
- Levitt, A. (1999, June 29). *An essential next step in the evolution of corporate governance*. Speech delivered at the Audit Committee Symposium, New York, NY.
<http://www.sec.gov/news/speeches/spch289.htm>
- Lim, S., & Matolcsy, Z. (1999). Earnings management of firms subjected to product price controls. *Accounting & Finance*, 39, 131-150.
- Mace, M. L. (1986). *Directors: myth and reality*. MA: Harvard Business School Press.
- Mallinson, J. (2002). *Top New Zealand shares*. New Zealand: Reed Books.
- Marsden, A., & Wong, J. (1997). The impact of taxation on the earnings management on New Zealand electric power boards. *Pacific Accounting Review*, 10(2), 1 -31.
- McNichols, M., & Wilson, P. (1988). Evidence of earnings management from the provision for bad debts. *Journal of Accounting Research*, 26(Supplement), 1 -31.
- Merrett, D. T., & Houghton, K. A. (1999). Takeovers and corporate governance. Whose interests do directors serve? *Abacus*, 35(2), 223 - 240.
- Miller, G., & Skinner, D. (1998). Determinants of the valuation allowance for deferred tax assets under SFAS-109. *The Accounting Review*, 73(2) 213 - 233.
- OECD. (1999). *Principles of corporate governance*. Directorate for Financial, Fiscal and Enterprise affairs.

- Peasnell, K. V., Pope, P. F., & Young, S. (1999). Outside directors, board effectiveness and abnormal accruals. Working paper, Lancaster University, Lancaster, U.K.
- Peasnell, K. V., Pope, P. F., & Young, S. (2000). Accrual management to meet Earnings targets: UK evidence pre- and post-Cadbury. *British Accounting Review*, 32, 415 - 445.
- Pincus, K. V., Rusbarsky, M., & Wong, J. (1989). Voluntary formation of corporate audit committees among NASDAQ firms. *Journal of Accounting and Public Policy* 8, 239 – 265.
- Ramsay, I., Stapledon, G. P., & Fong, K. (2000, March). Corporate governance: The perspective of Australian institutional shareholders. *Company and Securities Law Journal*, 18, 110 - 142.
- Read, W. J., & Raghunandan, K. (2001, May). The state of audit committees. *Journal of Accountancy*, 57 - 60.
- Revsine, L. (1991). The selective financial misrepresentation hypothesis. *Accounting Horizons*, 629 - 640.
- Schipper, K. (1989, December). Commentary: earnings management. *Accounting Horizons*, 91 - 102.
- Shivdasani, A. (1993). Board composition, ownership structure, and hostile takeovers. *Journal of Accounting and Economics*, 16, 167 - 198.
- Thomas, J., & Zhang, X. (2000). Identifying unexpected accruals: A comparison of current approaches. *Journal of Accounting and Public Policy*, 19, 347 - 376.
- Trueman, B., & Titman, S. (1988). An explanation for accounting income smoothing. *Journal of Accounting Research*, 26(Supplement), 127 - 143.
- Vafeas, N. (2000). Board structure and the informativeness of earnings. *Journal of Accounting & Public Policy*, 19, 139 - 160.
- Wahlen, P. (1994, July). The nature of information in commercial bank loan loss disclosures. *The Accounting Review*, 455-478.
- Watts, R., & Zimmerman, L. (1978). Towards a positive theory of the determination of accounting standards. *The Accounting Review*, 53, 112 - 134.
- Watts, R., & Zimmerman, L. (1986). *Positive Accounting Theory*. Englewood Cliffs: Prentice Hall.
- Watts, R., & Zimmerman, L. (1990). Positive accounting theory: A ten year perspective. *The Accounting Review*, 65, 131 - 156.

- Worthy, F. S. (1994). Manipulating profits: How its done. In S. A. Zeff, S. A. & B.G. Dharan (Eds) *Readings and notes on financial accounting: Issues and controversies* (pp. 651 – 658). New York: McGraw-Hill.
- Yermack, D. (1996). Higher market valuation of a company with a small board of directors. *Journal of Financial Economics*, 40, 185 – 211.
- Yu, S. C. (1973). The several modes of normative accounting thought: a critical examination. *International Journals of Accounting Education and Research*, 9 (2), 83 - 104.

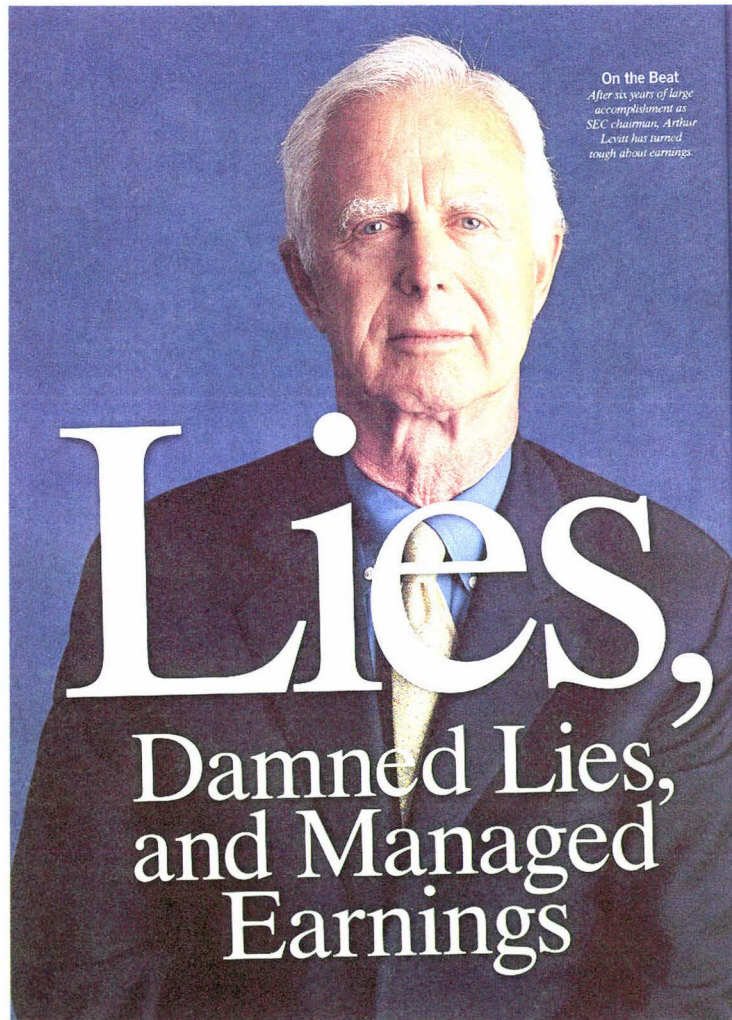
LIST OF PLATES

PLATE 1 ARTHUR LEVITT, CHAIRMAN OF SEC IN 1999.

PLATE 2 A HAPPY BOARD OF DIRECTORS

PLATE 1

Motivation for the Research

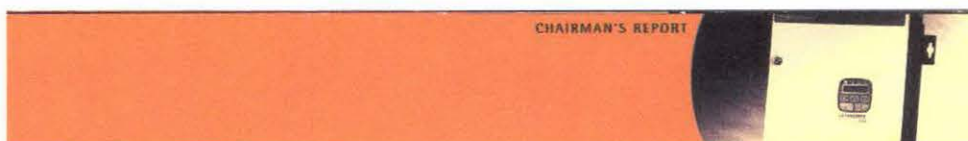


Arthur Levitt, SEC Chairman

Fortune, August 2, 1999

PLATE 2

A happy Board, June 1999



PDL DIRECTORS JUNE 1999

PAUL MORTLOCK

A lawyer specialising in business law, Paul Mortlock has been a director of PDL Holdings since incorporation and listing in 1974. He was appointed Chairman in 1998. He is a director of several unlisted companies and was chairman of Radio Avon during its initial eight years.

MARK STEWART

Since commencing with PDL in 1983, Mark Stewart has worked in a number of key roles in the Group, including Sales Manager, PDL-Wylex with responsibility for all Asian and Middle Eastern sales; CEO of Mistral Fans (Asia) with responsibility for all PDL operations in the Asian region. He returned to New Zealand in 1991 to the position of Commercial Director and was appointed CEO of MasterTrade Group Ltd. A director of PDL Holdings since 1991, he was appointed CEO of the Group in June 1998.

ALAN SHADWELL

Alan Shadwell was Managing Director of the Mair Astley Group from 1979 until his retirement in 1988. He was the inaugural Chairman of the Lyttelton Port Company, a position held for eight years. A former President of the Canterbury Manufacturers' Association and NZ Manufacturers' Federation, he has been a director of PDL Holdings for the past eleven years. He is a director of several other companies including Enterprise NZ Trust and publicly-listed Alliance Textiles Ltd.

LADY STEWART (ADRIENNE) OSM

A director and major shareholder of PDL Holdings Ltd, Lady Stewart has been involved in industry and commerce for over 30 years, including past board member of Trustbank Canterbury. Awarded the OSM in 1996, she has held a wide variety of public appointments encompassing her business and charitable interests.

HON. PHILIP BURDON

Philip Burdon has had a distinguished career in the fields of law, business and politics. His ministerial portfolios in the National Government from 1990-96 included Commerce, State-Owned Enterprises and Trade Negotiations. Appointed to the PDL board in 1998, he holds positions on the boards of several other New Zealand and Australasian businesses. These include: Chairman of the Board of Superannuation Investment Ltd, MFL Mutual Fund Ltd and EBOS Ltd; Deputy Chairman of NZ Post; Director of the CGU Insurance Group, Brierley Investments Ltd, ANZCO, Air New Zealand and OPUS International Consultants Ltd.

Directors left to right:

Lady Stewart; Hon. Philip Burdon;
Mark Stewart (Chief Executive Officer);
Alan Shadwell; Paul Mortlock (Chairman).



PDL was taken over and delisted in August, 2001