Are Attributes of

Corporate Governance

Related to the Incidence of

Fraudulent Financial Reporting?

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Nicola M. Bourke

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Abstract

This study investigates whether a relationship exists between fraudulent financial reporting and a variety of corporate governance attributes. Numerous high profile accounting scandals perpetuated over recent years have brought prominence to the corporate governance structure employed by US public companies. Many of these scandals involved manipulation of the financial reporting process by high level managers. It is therefore thought that a lack of effective oversight provided by the governing bodies engaged to monitor the actions of management may be at the heart of the problem.

A review of prior research is used to identify the attributes of corporate governance relevant for inclusion in this study and to provide support for the posing of twenty directional hypotheses. The selected corporate governance attributes are classified into four broad categories depicting Audit Committee Functionality, Board of Director Composition, Ownership Structure, and External Auditor Factors. A matched pair research design is utilised to determine whether significant differences exist between the corporate governance attributes employed by fraud and non-fraud companies. A sample of 76 fraud companies, identified through an examination of Accounting and Auditing Enforcement Releases issued by the Securities Exchange Commission and drawn from a total of 223 companies examined, are tested along with an industry-size matched sample of non-fraud companies. The results of univariate paired t-tests and a conditional logistic regression equation find that statistically significant relationships do exist between a number of corporate governance attributes and fraudulent financial reporting. Specifically, the study finds that the percentage of independent directors on a company's board, the existence of a nominating committee, and the engaging of a Big6 auditor are negatively related to the incidence of fraud. Whereas, the average number of directorships held by audit committee members, the duality of the CEO and Chairman of the Board positions, and the percentage of company ownership held by outside blockholders are positively related to the incidence of fraudulent financial reporting.

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Chapter One

INTRODUCTION

> "The publicly held business corporation is an awesome social invention. Millions of individuals voluntarily entrust billions of dollars, francs, pesos, etc. of personal wealth to the care of managers on the basis of a complex set of contracting relationships which delineate the rights of the parties involved. The growth in the use of the corporate form as well as the growth in market value of established corporations suggests that at least, up to the present, creditors and investors have by and large not been disappointed with the results…" (Jensen & Meckling, 1976, p.71).

1.1 Statement of the Problem

While Jensen and Meckling's conclusion might have been valid in the mid-70's, the present reality portrays a very different picture. Although individuals are still investing billions of dollars of their personal savings in public companies, and on the whole the majority are still reaping the benefits of their investments, the public's faith in the corporate form has been badly shaken over recent years. The prevalence with which public companies are falling prey to the incidence of fraudulent financial reporting, carried out at the hands of their contracted agent, could be partially to blame for a substantial change in this perspective.

Fraudulent financial reporting costs the world's economies billions of dollars each year. In the US alone the cost of corporate fraud is estimated at $US600 billion annually (Frieswick, 2003), and is said to be responsible for severely reducing investor confidence in the nation's capital markets. Kaminski, Wetzel and Guan (2004) described fraudulent financial reporting as "…a matter of grave social and economic concern" (p.15).

The discernible increase in corporate collapses due to fraudulent financial reporting over the last few years has drawn substantial attention to many aspects of the financial reporting and corporate governance of publicly traded companies in the US. In an attempt to stem the growing wave of corporate fraud a number of Government-commissioned, and industry-sponsored, studies have been undertaken aimed at understanding the dimensions of the problem and identifying appropriate solutions. Two such studies include the Report of the National Commission on Fraudulent Financial Reporting (NCFFR) released in 1987, and Fraudulent Financial Reporting 1987-1997: An Analysis of U.S. Public Companies released in 1999 by the Commission of Sponsoring Organisations of the Treadway Commission (COSO). Both reports sought to discover causal factors associated with fraudulent financial reporting and identify areas where improvements to the corporate financial reporting environment could be made.

One association that has been consistently recognised in not only the above-mentioned studies but also numerous subsequent studies, has been the management level of the persons responsible for financial reporting fraud. Of particular concern is the frequency with which senior management and/or other members of the governing body are involved in this type of deceptive behaviour. For example, the 1999 COSO report noted that together the CEO and CFO were named in 83% of the company frauds investigated by the study. The NCFFR study also recorded similar results of senior management being implicated in a vast majority of cases involving financial reporting violations. These results give good reason for concern, particularly considering the Association of Certified Fraud Examiners' observation that the "…position a perpetrator holds within an organisation will tend to have the most significant effect on the size of losses in a fraud scheme. As the level of authority for perpetrators rise, fraud losses rise correspondingly" (ACFE, 2005, p.36).

Over the years since these studies were conducted a number of legislative changes have been promulgated with the aim of alleviating fraudulent financial reporting. One of particular consequence was the 2002 implementation of the Sarbanes-Oxley Act (SOA). This Act, which contains comprehensive reforms in corporate governance, increased the statutory requirements mandatory for companies

publicly traded in the US and strengthening the penalties imposed on entities contravening these requirements. The SOA was sanctioned expressly for the purposes of protecting investors by not only improving the accuracy and reliability of corporate disclosures, but also by deterring and punishing corporate and accounting fraud and corruption.

Given the overwhelming association between fraud and senior levels of management, it is deemed important to understand the underlying forces that give rise to financial statement fraud and whether certain attributes of corporate governance are effective in mitigating the likelihood of this deceptive behaviour occurring. To accomplish this the paper will investigate known cases of fraudulent financial reporting with the aim of identifying differences in corporate governance between fraud and non-fraud companies. In particular, the objective of this study is to establish whether a relationship exists between selected corporate governance attributes and the incidence of fraudulent financial reporting. It asks whether fraud is associated with a lack of effective corporate governance diligently monitoring the actions of management. Or is there no substance to this assumption?

1.2 Purpose of the Study

The approach of this study will be to test a number of related hypotheses to determine if elements of corporate governance are associated with the likelihood that financial results may be fraudulently reported. To establish a thorough understanding of both fraudulent financial reporting and corporate governance a methodical examination of prior research will be conducted. This examination will evaluate the findings of earlier studies in related areas and use this information to provide a basis upon which the investigation will be carried out.

The study will draw upon past regulatory research such as the NCFFR to gain an understanding of what fraudulent financial reporting is. The findings of these earlier studies will also be utilised to aid in establishing a definition of this type of fraud. The objective will be to create a definition for fraudulent financial reporting, based on regulatory findings, that closely corresponds with the intent of this study. Therefore, a thorough comprehension of what constitutes fraud from a

regulatory perspective is relevant to discerning how the term will be interpreted by this study.

The selection of independent variables and the development of hypotheses will be based on the results of prior academic research, with an aim of making particular use of those variables already shown to have some degree of explanatory power. (This concept is further developed in Chapter 3.) In addition, this study will draw on an agency theory framework to provide support for the inclusion of each variable and to explain the interrelationships among them. Agency theory will also be used to identify the underlying relations between the variables so that the nature and direction of the relationships can be postulated. The objective being to develop a number of hypotheses that will ultimately provide an understanding of whether a significant relationship exists between variables depicting a variety of corporate governance attributes and fraudulent financial reporting.

As corporate governance entails a structure for monitoring the actions of a company and the persons who run it, the purpose of using attributes of the governance system as the independent variables is to ascertain if differences exist with regard to the monitoring maintained by entities. In this respect, it is thought that ineffective corporate monitoring may be positively related to the occurrence of fraudulent financial reporting. Therefore, relevance will be afforded to any observable differences in corporate governance attributes between the sample of fraud companies and their matched non-fraud counterparts.

The SOA was enacted to provide greater assurance for the integrity of financial reporting in US listed companies and as such, where it was deemed appropriate, new rules were established in relation to corporate governance. These rules were seen as strengthening and broadening the role of corporate governance as a whole, but in particular the responsibilities of monitoring bodies such as the audit committee, board of directors and external auditors. By strengthening the obligations of these key monitoring players, which along with management are considered to have primary responsibility for the prevention and detection of fraud (NACD, 1999), the SOA sought to increase the effectiveness of corporate governance. Therefore, this legalisation will be used to provide guidance and aid

in the selection and measurement of many of the corporate governance variables included in this study.

Prior research, along with the findings of initial descriptive tests conducted on the data collected, will be used to determine which statistical testing methods are most appropriate for this study. Specifically, the tests will be performed with the objective of providing empirical evidence to answer the primary research question:

> Is there a relationship between corporate governance attributes and the incidence of fraudulent financial reporting?

1.3 Overview of Fraud

Fraud is a broad legal term that encompasses a wide range of wrongful acts undertaken by an entity or its representatives. These acts can range from minor employee theft or unproductive behaviour, to gross and deliberate distortion of corporate records (NCFFR, 1987). Misappropriation of assets and fraudulent financial reporting are of particular concern because they have an adverse affect on the integrity of a company's reported financial condition. Material misstatement of a company's financial statements, such as that which arises in cases of fraudulent financial reporting, can have a detrimental influence on the market value, reputation, and ability to achieve the strategic objectives of an entity (KPMG, 2004). This in turn can have serious consequences for a company's shareholders, employees, suppliers, directors, management and other stakeholders.

While fraud can take many forms, fraudulent financial reporting was defined by the NCFFR as "…intentional or reckless conduct, whether by act or omission, that results in materially misleading financial statements" (1987, p.3). The investing public relies heavily upon the financial statements of a publicly traded company to provide an impression of the economic and operational performance achieved by the organisation during the previous fiscal year. When the figures or disclosures conveyed in these statements are fraudulently reported, or pertinent information is omitted, shareholders and potential investors are manipulated into thinking the company is achieving better results than it actually is. Viton (2003) described

management fraud as "…the most costly fraudulent act. It involves the deliberate misstatement of financial statements to reflect financial performance that is better than economic reality"(p.22). As the basis upon which many shareholders make their investment decisions, misrepresentations reported in financial statements can cause investors to make inaccurate or misinformed investment decisions, which could ultimately cost them millions of dollars in lost market capitalisation. It is this type of fraud with which this investigation is concerned, and its meaning is further discussed in Chapter 2.

1.4 Overview of Corporate Governance

The term 'corporate governance' is synonymous with the systems by which organisations are directed, administered and controlled. "It encompasses authority, accountability, stewardship, leadership, direction and control exercised in the organisation. It is the control of corporations and systems of oversight and the accountability of those in control" (Willis, 2005, pg.87). Furthermore, corporate governance is the process through which an organisation establishes, achieves and monitors its objectives. Hence, an understanding of what corporate governance is and how it works may contribute to an awareness of how attributes of this monitoring structure may be associated with the incidence of fraudulent financial reporting. It is anticipated that the monitoring aspects of corporate governance, which are the predominant focus of this study, may prove to significantly differ between fraud and non-fraud companies.

Of primary importance to corporate governance are the relationships and responsibilities between the board of directors, management, shareholders and other relevant stakeholders. To this extent corporate governance is fundamentally concerned with creating an environment that encourages managers to act in a manner that ensures the organisation is properly and honestly managed in the interests of the entity itself and its shareholders. Of equal importance, is the existence of conditions whereby managers will be held accountable for their actions. In this manner corporate governance is considered to be a multi-faceted influence that deals with issues of fiduciary duty and accountability, as well as incorporating economic aspects related to the maximisation of shareholder wealth.

It is therefore proposed that a breakdown in the governance structure could be what attracts fraudulent behaviour. Archambeault (2000) described, "An effective corporate governance structure should, in addition to ensuring optimal financial performance and maximising shareholder wealth, ensure the integrity of financial reporting". Furthermore, the author determined that, "…failure to prevent the occurrence of fraud and financial reporting violations is an ex-post indication of ineffective corporate governance" (pg.18). Likewise, analysis of corporate governance structures by DeChow, Sloan and Sweeney determined that there was a systematic relationship between financial manipulations and weaknesses in oversight. The authors concluded that, "…poor oversight of management through weak governance structures is an important catalyse for earning manipulation" (1996, pg.30).

While a structure that adequately governs the conduct of an organisation includes both management and other corporate governance participants it is understood that a principal weakness in the past has been the "…excessive concentration of power in the hands of top management. Rebalancing or equalising this power is a prerequisite for controlling management fraud and promoting accurate financial reporting (Tipgos & Keefe, 2004, pg.46). In what could be thought of as an effort to create an improved balance of power, the SOA clearly delineates the roles of the various participants in the corporate governance structure, being senior management, audit committees, board of directors, and external auditors (Sack, 2004). It is considered that by introducing increased statutory requirements for all parties involved in corporate governance, especially through maintaining greater vigilance over the financial reporting process, the desired effect of attaining better control over any abuse of corporate power is more likely to be achievable. It is these monitoring functions, or more precisely how and to what degree they are implemented, that may create a difference between fraud and non-fraud companies.

1.5 Theoretical Perspective

This study will draw on agency theory to test whether hypothesised relationships exist between corporate governance monitoring bodies, such as audit committees, boards of directors and external auditors, and the incidence of fraudulent financial

reporting. It is considered an agency theory framework has the ability to not only help explain why a fraud might occur, but also how monitoring mechanisms, such as those provided by corporate governance, could be associated with this type of deceptive behaviour. In this way agency theory will help to explain the motives of those that commit or allow fraud to occur, explain why the selected variables may be relevant to test, and why certain patterns may (or may not) be found in the test results.

Nowadays, the vast majority of medium to large size organisations have numerous and widely dispersed ownership in the form of shareholders. It is this kind of dispersed ownership arrangement that inhibits shareholders from being more actively involved in the management of the companies they own. In these instances an agent is appointed to manage the day-to-day operation of the company, thereby creating a situation where there is a separation of ownership and control. Berle and Means (1932) suggested that this distinction between ownership and control, which is inherent in the corporate form, could give rise to the potential for conflicts of interests between agents and principals. Hence, the separation of ownership and control can lead to an agency problem.

An agency relationship exists when "…the actions of one individual affect both his welfare and that of another person in an explicit or implicit contractual relationship" (Padilla, 2002, p.5). Jensen and Meckling recognised that the "…contractual relationship between the stockholders and the managers of a corporation fits the definition of a pure agency relationship" (1976, p.6). As such, there are two major problems that can arise in an agency relationship of this nature, namely adverse selection and moral hazard. In 1987 Kotowitz defined moral hazard as the "…actions of economic agents in maximising their own utility to the detriment of others…" (p.549). In other words the consequence of benefiting oneself inequitably is a 'moral hazard' (Hsieh & Tsai, 2005). For the purposed of this study the reference is to the managers who commit fraud and in doing so serve there own interests at the expense of others.

The cost of resolving conflicts of interests caused by separation of ownership and control are termed agency costs and include the cost of contracting with the agent,

and the cost to owners of monitoring the actions of agents. Agency theory recognises that monitoring mechanisms, being "…mechanisms for observing, recording and measuring the output of the efforts and strivings of the agent" (Moldoveanu & Martin, 2001, p.3), may be quite costly for the principal. However, it also acknowledges that such monitoring of agent behaviour is one way in which self-interest factors can be moderated. Corporate governance, such as that provided by audit committees, boards of directors, and external auditors, enable shareholders to more closely monitor the actions of managers. Whereas, imperfect or ineffective monitoring of agents might encourage managers, in their role as corporate agents, to take additional risks that may include committing fraud; improving the effectiveness of corporate monitoring may reduce the occurrence of this type of deceptive behaviour.

In the context of this study, agency theory will be used to portray why a conflict of interests may lead to the occurrence of fraudulent financial reporting, and how a relationship between this type of fraud and the monitoring mechanisms provided by corporate governance may exist. Thus, taking agency theory into consideration it could then be deemed that the predominance with which senior management are found to be involved with the occurrence of fraudulent financial reporting may be indicative of an agency problem. For that reason, it may then be justifiable to assume that by enhancing corporate governance, monitoring efficacy should improve and a reduction in fraud should occur as a consequence. Given these agency assumptions, independent variables will be identified with the aim of detecting associations between corporate governance attributes and financial reporting fraud.

1.6 Method

The study will use three databases from which to gather data. Firstly LexisNexus will be used to identify cases of fraudulent financial reporting. This will require an examination of all Accounting and Auditing Enforcement Releases (AAER's) issued by the Securities Exchange Commission (SEC) between 1 January 2004 and 30 June 2006 (being the time period covered by this study), to determine which cases constitute fraudulent financial reporting. It will then be necessary to establish that sufficient financial and corporate governance data for each of the

companies identified in the AAER's is publicly available. To accomplish this, both the Thomson ONE Banker and SEC EDGAR databases will be utilised, with each company being individually checked against these databases to determine sufficient information exists.

The Thomson ONE Banker database will provide access to the companies' financial information, which will be electronically downloaded and transferred to an Excel spreadsheet. The EDGAR database will be used to retrieve the necessary information pertaining to the corporate governance maintained by each company. This data will need to be collected manually by conducting a review of the statutory filings (Form 10-K and/or Proxy Statements) held for each company by the SEC and then transferring the information collected onto a spreadsheet. Those cases found to constitute fraudulent financial reporting and which have accessibility to sufficient data will form the basis of the fraud company sample.

Once the fraud company sample has been determined the matching process to pair each fraud company with an industry-size matched control company will begin. The Thomson ONE Banker and EDGAR databases will be used to collect the data necessary to allow the matching process to be accomplished. In particular the search facility of the Thomson ONE Banker database, which allows explicit search criteria to be specified, will be used to identify possible matches for each fraud company. Those companies identified as possible matches then need to be individually checked against the EDGAR database to ascertain whether the SEC has previously taken action against them pertaining to fraudulent activities. Any company found during this stage to have prior indictments for fraud will be eliminated from further inclusion in the matching process. Of the remaining possible matches, the company that most closely resembles the fraud company based on the matching criteria (being industry, time, size and stock exchange) will then be selected to form the non-fraud company sample.

In a similar manner to fraud companies, all non-fraud companies must have sufficient corporate governance data publicly available so that the independent variables can be populated. The EDGAR database will be used to examine the SEC filings of each 'non-fraud' company to obtain the required information.

Once this information has been collected and the matched pairs have been confirmed the data will be transferred from the Excel spreadsheet to the SPSS system for statistical analysis.

A number of tests will be performed on the fraud companies and their appropriately matched non-fraud counterparts to identify attributes of corporate governance that may predispose a company to fraudulently report its financial statements. These tests will include paired t-tests and Wilcoxon signed-rank tests to determine whether significant differences exist between the corporate governance attributes employed by fraud and non-fraud companies, and also provide evidence as to the quality of the matched pairs. This will be followed by Spearman's rank-order correlation test to evaluate if multicollinearity is present among the independent variables and conditional logistic regression to develop and test the model. Lastly, validation tests will be performed to check the robustness of the regression model and determine it is sensitive to changes in data sets. The results of these tests will be based on the computed differences in corporate governance attributes observed between the pairs of matched fraud and non-fraud companies, and ultimately determine which attributes are positively or negatively associated with the incidence of fraudulent financial reporting. Further detail with regard to the methods and databases used in this study is provided in Chapter 4.

1.7 Significance of the Study

This paper will be aimed at providing relevant and insightful information on fraudulent financial reporting and in particular the consequence enhancements to corporate governance may have on its occurrence. While some research exists with regard to the various aspects of corporate governance, only a small quantity is linked with fraudulent financial reporting per se. The lack of empirical evidence linking these two elements adds considerably to the significance of this study. The consequence of fraud, and in particular what corporate governance attributes may be associated with its occurrence, is a very important and worthy topic of research, and one that could have a substantial impact on a number of parties. Accordingly, it is considered that the findings of this research will be of

significant benefit to regulators, professional associations, corporate governance bodies, and additionally, the investing public.

As a result of prior research a number of amendments to regulation and legislation have been implemented in relation to corporate governance. It is proposed that this research will provide new findings as to the effects regulated enhancements (composed under the new corporate governance rules promulgated in the SOA) will have on the incidence of fraudulent financial reporting. In this regard this study will be able to test variables not previously tested in earlier studies due to the inaccessibility of the information needed to populate the variables. New regulatory requirements are such that disclosure of certain governance information, such as the expertise of the audit committee members, is now mandatory, making information not previously obtainable now available for testing purposes.

Of relevance to this study are the attributes of corporate governance that depict an audit committees' functionality, a board of directors composition, a company's ownership structure and factors relating to the company's appointed external auditor. Whilst some research pertaining to the deterrent qualities of audit committees' and board of directors on the occurrence of fraud exists, only one previous study has examined the presence of new corporate governance standards on the existence of financial statement fraud (Persons, 2005). It is intended that this study will refine and expand upon Persons (2005) findings and thereby provide additional evidence to support the existence of a relationship between various attributes of corporate governance and fraudulent financial reporting.

Taking into consideration the recent amendments made to legislation it is deemed timely to investigate whether some of the new rules may have a likely effect on the incidence of fraudulent financial reporting. With this in mind the time span over which the investigation will be conducted will extend between the years 2004 and 2006. It is believed the study will contribute significantly to the corporate governance and fraud literature in that it will be the first of this nature to analyse this most recent and consequential timeframe. Furthermore, the study's findings will be closely aligned with many of the corporate governance attributes

that are now mandatory under the SOA and new listing rules making the results more relevant to present day conditions.

1.8 Organisation of the Report

The remainder of this paper is organised as follows. The next chapter provides a discussion on the dependent variable, fraudulent financial reporting. This is followed by a review of the relevant literature on corporate governance from which the independent variables will be selected for inclusion in a statistical model to be used for testing purposes and hypotheses development. The methods chapter will present the research design and provide further information about the matching process, variable measurement and chosen statistical model. Chapter 5 will report the findings of the study, while a discussion on the implication of these findings, examination of the study's limitations and suggestions for future research, will be provided in chapter 6.

Chapter Two

FRAUDULENT FINANCIAL REPORTING

2.1 Introduction

Fraud can take many forms and include numerous deceitful actions. This chapter will provide a general understanding of what fraud is and in particular the act of fraudulently reporting financial information. Once this is established the paper will use regulatory based studies to aid in the creation of a definition that will be used by this study to characterise fraudulent financial reporting. The rationale for establishing this definition and a breakdown on how this study will interpret the proposed definition will be addressed, along with the importance of identifying this type of fraud.

This chapter will then discuss how it intends to measure fraudulent financial reporting. To undertake this task an examination of the SEC will be performed to clarify the role the it plays in legislating and enforcement of the securities laws that serve to protect billions of US public investors. Awareness of how this authority works is considered imperative to understanding why enforcement proceedings undertaken by the SEC will be used to measure fraudulent financial reporting. This will also help to establish why AAER's issued by the SEC will be the source from which the sample of fraud companies will be drawn.

2.2 What is Fraudulent Financial Reporting?

In recent years US investors have been hit hard by the numerous blatant cases of fraudulent financial reporting found to be prevalent in some of the countries biggest and most influential companies. Frauds perpetrated by such companies as Enron, Worldcom, Quest and HealthSouth, to name but a few, have resulted in monumental losses for the investing public. Enron, once the seventh largest company by market capitalisation in America, averaging US$90 per share and worth US$70 billion in 2000, was by late 2001 the largest bankruptcy in US

history. The cause of the collapse, "…the largest financial fraud and audit failure on record" (Morrison, 2004, pg.125). With statistics like these it is understandable that financial reporting frauds '…have helped to fuel a massive loss of confidence in the integrity of American business and have contributed to a very sharp decline in the U.S. stock market" (Carson, 2003, p.389).

Many of these financial reporting scandals include such actions by management as manipulating earnings, misapplication of accounting principles and/or failing to report significant events. More specifically, many prior studies (Persons, 2006; Bédard, Chtourou & Courteau 2004; Uzun, Szewczyk & Varma, 2004; Archambeault, 2002; Abbott, Parker & Peters, 2000; Beasley, 1999) have found that fraudulent financial reporting generally involves:

- Manipulation, falsification or alteration of accounting records or supporting documents from which financial statements are prepared
- Misrepresentation in, or intentional omission from, the financial statements of events, transactions, or other significant information
- Misapplication of accounting principles relating to amounts, classification, manner of presentation, or disclosure (Grice Sr., 2001, p.11).

These actions, which are usually perpetrated in an attempt to improve the company's financial appearance, can severely corrupt the legitimacy of the accounting statements and distort the disclosures presented in the financial report. As such, the issuance of materially misleading financial statements by a company listed on one of the US stock exchanges is a violation of the Securities Act 1933 and/or the Securities Exchange Act 1934. The anti-fraud provisions contained within these Acts, namely, section 17(a) of the Securities Act 1933 and section 10(b) (in conjunction with Rule 10(b)-5) of the Securities Exchange Act 1934, make it unlawful for any person to use any manipulative or deceptive device, scheme, or artifice to defraud, in connection with the offer or sale of any security. Pursuant to these provisions it is also a violation to use any untrue statement of a material fact, or omit to state a material fact that would be necessary to make a statement not misleading.

To further comprehend what constitutes fraud and how this deceptive behaviour is regulated against under US law, a review of selected regulatory based studies such as the NCFFR, COSO, Report and Recommendations of the Blue Ribbon Committee, and Statement on Auditing Standards No. 99 was undertaken. Since it is the investing public that suffers most from fraudulent financial reporting and as regulation can be seen as a formal expression of public expectations of what is and what should occur, it would appear justified to look to regulation for further guidance on what constitutes this type of fraud. Knowledge of current and past regulation can also help to understand what the courts determine as fraudulent financial reporting. The review of the above mentioned studies therefore enabled an appreciation to be gained of their findings and the implementation of any changes that were proposed to address concerns relating to fraudulent financial reporting. A discussion of the findings of these studies is provided in Appendix A.

In brief, the review identified a number of areas that have been deemed significant to regulatory and oversight bodies with regard to fraudulent financial reporting. Specifically, the studies demonstrated that senior management were typically at the heart of fraudulent activity and further established some causal factors that helped to explain why this was so. Techniques commonly used by perpetrators to misrepresent the financial statements of a company were also recognised and evidence was provided to support the belief that it is primarily revenue and asset accounts that are manipulated. This action along with the fact that the fraudulent behaviour is principally perpetrated by senior management has lead to the opinion that override of the internal control system is the most likely avenue used to tamper with the necessary accounting transactions and orchestrate many of the frauds that occur. This type of interference with the accounting system can provide signals of abuse that necessitates the effective functioning of a company's corporate governance structure.

The regulatory studies under review also served to further establish the importance of researching fraudulent financial reporting. The studies impress upon the reader the significance of ensuring the accuracy of the financial reports issued by public companies. Investments made by the public are a key source for

many companies of obtaining the capital funds necessary to function adequately and expand their operations. If the oversight structure is not functioning adequately and senior management is able to override internal controls unhindered, manipulated financial statements may ultimately be presented to a company's shareholders. This practise can have severe consequences for shareholders and therefore it is of the utmost importance that investors can depend on a company's financial report to give a true and fair view of the company they have investing in.

2.3 Fraudulent Financial Reporting Defined

A reasonably broad definition of fraud is that it generally involves "…a deliberate misrepresentation, which causes another person to suffer damages, usually monetary losses" (Infozech, 2005, pg.2). Or, more specifically in relation to fraudulent financial reporting, it has been defined as "…intentional or reckless conduct, whether by act or omission, that results in materially misleading financial statements" (NCFFR, 1987, p.3). This latter definition more closely equates with the focus of this study, which is aimed at investigating whether a relationship exists between various corporate governance attributes and fraudulent financial reporting. To provide a better understanding of what this type of fraud involves and ultimately propose a definition by which this study will measure fraudulent financial reporting, the meaning of various aspects of the NCFFR definition will be examined in greater detail.

2.3.1 Intentional or Reckless Behaviour

Fraud is an act that typically involves intent and deception. In addition to intentional deceptive behaviour, the definition offered by the NCFFR includes reckless conduct, which broadens the performance of this type of deed to those that should have known better but chose to ignore the signs. Fraudulent financial reporting is therefore considered to include persons that act with the intention of defrauding others, along with persons that act in a reckless manner. Fraud of this nature does not however incorporate acts of pure error that result in materially misleading financial statements.

To act with intent can be further explained in terms of a person's knowledge of the underlying facts. It is said that a person acts knowingly if they are aware that their conduct will cause harm but willingly pursues their course of action anyway. "To act knowingly means to do so voluntarily and deliberately, and not owing to mistake or some other innocent reason" (The Gale Group, 1998, pg.2). Whereas, to act recklessly entails, for instance, a person who entertains serious doubts, or should with regard to their position or comprehension of the subject matter harbour serious doubts, as to the veracity of a fact but chooses not to act on those suspicions. In other words,

> A person is reckless or acts recklessly, when he/she consciously disregards a substantial and unjustifiable risk that circumstances exist or that a result will follow…and such disregard constitutes a gross deviation from the standard of care which a reasonable person would exercise in the situation (Municipal Code Corporation, 1998, pg.2).

2.3.2 Materiality

In particular, fraudulent financial reporting pertains to conduct of the above nature that results in a ***material*** misrepresentation of the financial statements of an entity. To determine what is material and what is not requires consideration of both qualitative and quantitative factors and as such is not a simple calculation. Consequently, accessing materiality requires judgement to be made on what would or would not be considered likely to influence the decision of a knowledgeable investor given a specific set of circumstances (SEC, 1999). Accordingly, the US Supreme Court has previously determined that, "A fact is material if there is a substantial likelihood that a reasonable shareholder would consider it important in making his investment decision". It was further judged by the Court that "…to fulfil the materiality requirement there must be a substantial likelihood that the disclosure of the omitted fact would have been viewed by the reasonable investor as having significantly altered the 'total mix' of information made available" (Horwich, 2000, pg.1024). However, due to inherent difficulties and the complexity involved in qualitative analysis, quantitative methods have predominantly been used to calculate materiality.

Over the years a quantitative 5% 'rule of thumb' has often been used by management and accountants to aid in the identification of "potentially material

transactions and events" (Vorhies, 2005, pg.2). In reference to this, it is generally thought that a reasonable and prudent investor's decision would not be influenced by a 5% or less fluctuation in activities reported in the financial statements. However, it has been found that caution should be exercised in using this 5% threshold as it is not deemed to included misstatements or omissions in the financial report that are as a result of "…particularly egregious circumstances, such as self dealing or misappropriation by senior management" (Horwich, 2000, pg.1025). The SEC also advise that it is inappropriate to rely solely on a quantitative approach that dictates what is material simply by exceeding or not a predetermined numerical threshold, and that such a reliance "…has no basis in the accounting literature or the law" (SEC, 1999, pg.2).

The SEC Staff Accounting Bulletin no. 99 addresses issues pertaining to materiality. In this bulletin the SEC reminded registrants that while they do not object to a 'rule of thumb' approach being used as a preliminary step in assessing materiality, this type of quantitative measurement "…cannot appropriately be used as a substitute for a full analysis of all relevant considerations" (SEC, 1999, pg.2). Similar to the definitions given by US Supreme Court and the Financial Accounting Standards Board[1], the SEC considers that the most relevant factor concerning materiality lies with the significance of an item to the financial statements user. "A matter is 'material' if there is a substantial likelihood that a reasonable person would consider it important" (SEC, 1999, pg.2).

2.3.3 The Perpetrators

Fraudulent financial reporting can be perpetrated by a number of different players in the corporate environment but in reality it usually involves either management or those undertaking governance duties. In this regard it is generally management that actually orchestrates and carries out the fraud, and therefore acts with intent. While on the other hand, it is those in monitoring positions, such as boards of directors, audit committees and external auditors that act recklessly by not having

[1] The omission or misstatement of an item in a financial report is material if, in the light of surrounding circumstances, the magnitude of the item is such that it is probable that the judgement of a reasonable person relying upon the report would have been changed or influenced by the inclusion or correction of the item.

assessed the risk correctly or acted on their reservations as to the accuracy of the assertions presented in the financial report.

Nieschwietz, Schultz, and Zimbelman (2000), claim that,

> By definition fraudulent financial reporting involves intent and deception. Typical frauds involve scheming by highly motivated, clever teams of knowledgeable managers with the capacity for considerable political persuasion and intimidation of both their own employees and their auditors (p.236).

As indicated by the above interpretation, a company's senior management is normally the main offender when it comes to actually devising and executing the scheme to defraud. This primarily comes about because of the position managers hold and their ability within that position to override internal controls, or as the above implies, persuade employees to do so on their behalf. In support of this assertion the American Institute of Certified Public Accountants, found that "…many financial statement frauds have been perpetrated by intentional override by senior management of what might otherwise appear to be effective internal controls" (AICPA, 2005, pg.1). It has been suggested that management may override controls to achieve a number of objectives, chief amongst them being to create an artificial picture of the company's economic condition. To achieve this fraudulent image managers may "…intentionally misstate the nature or time of revenue by recording fictitious business transactions or changing the timing of legitimate transactions; establishing or reversing reserves to manipulate results; and altering records related to significant or unusual transactions" (Morrow, 2005, pg.1).

On the other hand, reckless behaviour by persons in a position of corporate governance is normally as a consequence of inadequate monitoring of management. Persons holding monitoring positions, such as the members of a company's board of directors, or audit committee and also the elected external auditor are appointed to these positions of influence to oversee the running of the company on behalf of its owners, the shareholders. When these persons (whom are generally considered appropriately skilled to undertake the monitoring task) fail to adequately assess the risk or at least apply a healthy amount of scepticism

and take appropriate action when doubts exist, they are deemed to have acted in a reckless manner.

Taking all the above into consideration it was deemed that for the purposes of this paper fraudulent financial reporting would be defined as:

> ***The conscious effort by management or other members of the governance body to sanction, or otherwise support, the production of materially incorrect financial reports.***

2.3.4 Interpretation of the Definition

Similar in essence to the NCFFR definition, this definition also seeks to distinguish that the fraud was intentionally executed by the use of the words 'conscious effort', which is taken to infer intent and awareness. Furthermore, fraudulent financial reporting can be 'sanctioned'; meaning authorised or simply allowed to occur, by management or other members of the governance body. 'Support' is deemed to have been given in cases where it is obvious that the circumstances under which the fraudulent activities occurred were such that failure to detect a problem represents a dereliction of duties and consequently the conduct of the party involved is thought to be reckless. The inclusion of this expression is seen as embodying situations where although the party involved was not directly aware of the fraud, their position of authority is such that they should have known something was amiss and taken appropriate action to allay their suspicions.

For the purposes of this report the governance body of a company is considered to include not only the board of directors and its appointed committees, but also the appointed external auditor. This was deemed appropriate because of the monitoring function performed by the external auditor, which is considered a very important part of the governance of a company. If we interpret the term governance to include all the processes, systems, and controls that are used to safeguard and grow a company's assets, then the external auditor could be judged (a medium whose purpose is) a control used to protect the interests of the public in much the same manner as a board of directors. Therefore, the definition for this study includes instances where any member of the management or

governance body of a company sanctions or otherwise supports the occurrence of fraudulent financial reporting.

Finally, the term 'materially incorrect' is deemed to include the common knowledge interpretation of materiality discussed in subsection 2.3.2, and pertains to information that is of an accounting nature. Furthermore, the use of this materially incorrect information in the production of financial reports is intended to encompass all types of financial statements and disclosures made in both the interim or annual reports of a public company.

2.8 The Securities Exchange Commission

Companies found to be flaunting the bounds of reliable corporate reporting in violation of US anti-fraud provisions may find themselves the subject of a SEC enforcement proceeding. As such SEC enforcement actions are used as a proxy for companies in which fraudulent financial reporting is deemed to have occurred. The following sets out the SEC's authority over financial reporting in the US. It also establishes how the SEC comes to issue an enforcement action and why doing so is a reasonable indicator of fraud.

The SEC is the regulatory authority that administers both the Securities Act 1933 and the Securities Exchange Act 1934, and in doing so has oversight responsibility for financial reporting in the US. This oversight responsibility means that the SEC is actively involved in monitoring the integrity of the financial statements reported by publicly listed companies. Bearing in mind the purpose of their obligations and the intent of the Acts they administer, the SEC has declared one of its missions as protecting the interests of investors. In fulfilment of this mission the SEC has judged that,

> The laws and rules that govern the securities industry in the United States derive from a simple and straightforward concept: all investors, whether large institutions or private individuals, should have access to certain basic facts about an investment prior to buying it, and so long as they hold it. To achieve this, the SEC requires public companies to disclose meaningful financial and other information to the public. This provides a common pool of knowledge for all investors to use to judge for themselves whether to buy, sell, or hold a particular security. Only through the steady flow of timely, comprehensive, and accurate

> information can people make sound investment decisions (SEC, 2006, pg.2).

In accordance with the Securities Act 1933 and the Securities Exchange Act 1934 it is a violation to issue materially misleading financial statements. The anti-fraud provisions contained within these two Acts confer upon the SEC wide-ranging powers to investigate possible infringements and take enforcement proceedings against any offender found to be in violation of these securities laws. These powers allow the Commission to bring enforcement actions against entities or individuals for such misconduct as misrepresentation or omission of important information about securities, manipulating the market prices of securities, and/or insider trading. "The violators may be a company, directors, officers or employees, a company's attorneys, an accounting firm or individual accountants, or any other party involved in the preparation of false financial information or other information required by the SEC" (Licata, Bremser & Rollins, 1997, pg.539).

The SEC uses a number of avenues to determine when enforcement action may be necessary. Since listed companies are required by law to disclose documents to the SEC, including financial reports, proxy materials, and any other information relating to the sale or disposal of securities, this allows staff to undertake routine reviews of disclosure records filed by these entities. Through this review process it is possible to check whether publicly listed companies are meeting their disclosure requirements and/or if it is considered a potential violation of the securities laws have in the past, or may currently be occurring. The Enforcement Division of the SEC acquires evidence pertaining to possible violations from many sources, "…including from its own surveillance activities, other Divisions of the SEC, the self-regulatory organisations and other securities industry sources, press reports, and investor complaints" (SEC, 2006, pg.8).

Enforcement actions may be filed in the Federal Court or internally before an administrative law judge depending upon the seriousness of the offence and the technical nature of the matter concerned (SEC, 2006). While a few violators may choose to contest the indictments laid by the SEC, most choose to settle the case

without admitting or denying the charges. In fact, it is estimated that more than three-quarters of all enforcement cases end in settlement (Swartz, 2006).

Where the choice to settle a case is elected, a motion for settlement is offered by the alleged offender and negotiated with the SEC who takes into consideration the appropriateness of the offer bearing in mind the nature of the proceedings and the public interest. In the event a settlement is sanctioned in a fraudulent financial reporting case, a cease and desist order would normally be imposed either with or without the issuing of a disgorgement order or monetary penalty and the requirement to restate financial statements (SEC, 2003). In so offering and accepting a motion to settle the alleged offender waives their rights to further judicial proceedings and consents to the disciplinary terms of the settlement.

As the Commission is a government agency and only has access to limited funds it must choose what cases it considers are worthy of pursuing. The probability of a successful prosecution is high on the agenda and hence great importance is placed upon the evidence able to be obtained. Whilst this does create a limitation for this type of research (see Chapter Six for further discussion on this limitation), it does provide an amount of certainty as to the probability that the offence occurred. Therefore, taking this aspect into consideration along with the fact that many settlements incur substantial monetary penalties, entities that choose to settle without a formal judicial hearing will be included in the sample of fraud companies, regardless of the fact that the charges were neither admitted nor denied. The inclusion of settled cases was further deemed applicable on account that earlier research of this nature (Persons, 2005; Erickson, Hanlon & Maydew, 2004; Kaminski, Wetzel & Guan, 2004; COSO, 1999; Beasley, 1996) also considered their selection appropriate.

When the SEC takes enforcement proceedings against an offender an Accounting and Auditing Enforcement Release (AAER) is issued. AAER's are legal briefs that provide a detailed summary of the relevant facts of each case brought by the SEC in relation to auditing or accounting matters. The AAER will generally give a list of the named defendants and some background as to their designation, history with the company, and what part they played in the fraud. It also

describes the alleged offences and the remedy sought by the SEC, the period covered by the fraud, as well as giving a brief account of the fraudulent activities undertaken and the techniques used. While AAER's only relate to public companies listed on one of the US stock exchanges, and thereby subject to SEC regulation, they are the source most predominantly used for selecting fraud companies. In addition to the research listed above, other studies that have used AAER's as a method of sample selection include Geriesh, 2003; SEC, 2003a; Archambeault, 2002; Saksena, 2001; Bonner, Palmrose and Young, 1998; and McMullen, 1996.

Taking into consideration the above, as well as keeping in mind that the purpose of the aforementioned Acts administered by the SEC is - "(a) to provide investors with material financial and other information concerning securities offered for public sale; ***and*** (b) to prohibit misrepresentation, deceit, and other fraudulent acts and practices in the sale of securities generally" (Fanning & Cogger, 1998, pg.3), it would appear that the use of enforcement proceedings taken by the SEC is an appropriate measure by which to identify the occurrence of fraudulent financial reporting. Therefore, for the purposes of this study, fraud will be considered to have occurred where an AAER has been issued alleging a violation against section 17(a) of the Securities Act 1933 and/or section 10(b) (in conjunction with Rule 10(b)-5) of the Securities Exchange Act 1934. These two sections are deemed the anti-fraud provisions of the Acts that deal specifically with misrepresentations made my public companies regarding their financial condition.

2.9 Summary

This chapter has served to provide a general understanding of what fraudulent financial reporting is. To achieve this a literature review of prior regulatory fraud research was performed with the aim of providing a more comprehensive understanding of what is considered to constitute this type of fraud. The review covered four studies believed to be of significant importance, and included such aspects of fraud as the predominant perpetrators, causal factors, commonly used techniques, and the role of audit committees and external auditors. A common theme shared by all of these studies appears to endorse the belief that

strengthening corporate governance may aid in restraining the incidence of fraudulent financial reporting.

Prior to settling on a definition to be used by this study, various aspects of the NCFFR definition of fraud were discussed and the meaning of several words examined in greater detail. A definition that characterises fraudulent financial reporting for the purposes of this paper was then given along with guidance on how the definition would be interpreted.

The chapter's final objective was to discuss how the study intends to measure the occurrence of fraudulent financial reporting. This was achieved by discerning what the SEC's responsibility with regard to financial reporting of public companies in the US is, and how the issuance of an enforcement action by this regulatory authority could be used as a measure of fraud. The following chapter undertakes a further review of the fraud literature but from a Corporate Governance stance. This review is intended to provide support for the inclusion of the independent variables depicting a variety of governance aspects that have been shown to have deterrent qualities in the fight against financial statement fraud.

Chapter Three

CORPORATE GOVERNANCE

3.1 Introduction

This chapter will firstly look at what, in general terms, corporate governance is. It will then identify and justify the independent variables to be used in this study as proxies for corporate governance attributes. A review of prior corporate governance and fraud literature will be used to justify the inclusion of each independent variable and provide an understanding of why these attributes may be associated with the incidence of fraudulent financial reporting.

The independent variables depicting corporate governance attributes have been grouped into four categories that include Audit Committee Functionality, Board of Directors Composition, Ownership Structure and External Auditor Factors. Once support for the inclusion of each variable has been provided a number of individual hypotheses will be posed. In some instances two similar hypotheses will be posed, one relating to the distinct number and the other based on a percentage. This has been done to take into account that more accuracy can be achieved in some cases by a percentage-based calculation rather than a discrete number. In this regard it was considered that by using a discrete number-based answer the sheer variability amongst the paired samples for several of the corporate governance attributes might distort the test results. The results of testing the hypotheses will be furnished in Chapter 5.

3.2 What is Corporate Governance?

In a speech to the Global Corporate Governance Forum, Sir Adrian Cadbury determined, “The corporate governance framework is there to encourage the efficient use of resources and equally to require accountability for the stewardship of those resources. The aim is to align as nearly as possible the interests of individuals, corporations and society” (2000, pg.1). As recognised earlier in this

paper, the separation of ownership and control that is inherent in the corporate form can give rise to the potential for conflicts of interest between owners and their appointed agents who manage the day-to-day operation of the company (Berle & Means, 1932). To constrain any divergence in interests and ensure appropriate accountability of resources it is necessary for a comprehensive structure of controls that encourages efficient performance and responsible behaviour to operate within the organisation.

Charreaux and Desbrieres (2001) described the corporate governance system as covering "…all the mechanisms that 'govern' the managers' behaviour and delineates their discretionary latitude" (pg.108). Corporate governance has also been described as dealing with "…the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment" (Shleifer & Vishny, 1997, pg.737). Persons (2006) noted, "One scenario, which greatly casts doubt on whether stockholders will be able to receive reasonable return, is when a corporation is engaged in fraudulent conduct" (pg.27). Accordingly, corporate governance is used to deter any conflict of interests between shareholders and managers that may result in fraudulent behaviour causing a reduction in shareholder wealth.

As stockholders play a substantial role in supplying the necessary capital to corporations and because the outlay of personally monitoring companies actions would be to costly for individual investors, it is essential that oversight of the fiduciary duty owed to these investors is competently performed by the corporate governance structure. Hermanson's 2006 study, which contributed ten fundamental conclusions about corporate governance, determined that, "Effective corporate governance is critical to investor confidence in the financial markets" (2006, pg.45). Although countless interpretations of corporate governance exists, regardless of which rendering is used, it would appear that the authority of the governing body affords a degree of control over management and provides for processes by which the actions of managers can be monitored and held to account.

In today's corporate environment a good governance structure includes an adequately functioning audit committee, a thoughtfully composed board of

directors, balanced ownership structure, and an independent and vigilant external auditor. However, to ensure optimal oversight is achieved by these monitoring mechanisms they all need to work mutually and in conjunction with a comprehensive system of internal controls. Cohen, Krishnamoorthy and Wright recognised that "…one of the most important functions that corporate governance can play is in ensuring the quality of the financial reporting process" (2002, pg.587). In this realm of thinking effective oversight of the financial reporting process by the aforementioned monitoring mechanisms is thought to improve the accuracy of what is reported to shareholders and act as a deterrent against possible fraudulent behaviour by managers.

Taking into consideration that effective corporate governance may mitigate the incidence of financial reporting fraud, it could therefore be postulated that cases where fraudulent reporting has been found to occur may be as a consequence of lax supervision of top management by monitoring mechanisms. This chapter is aimed at providing support for the inclusion of various attributes of corporate governance that will be used as independent variables in testing this conjecture. In this respect it is proposed that significant differences in the corporate governance attributes may exist between fraud and non-fraud companies, and that these differences might help explain how effective governance is related to the incidence of fraudulent financial reporting.

3.2 Audit Committee Functionality

In 1940 the Securities Exchange Commission (SEC) acknowledged the concept of an audit committee and proposed the establishment of such committees in US publicly traded companies. The purpose of the audit committee was seen as serving the important function of ensuring the accuracy of the financial reports presented by the entities that they served (Buchalter & Yokomoto, 2003). It wasn't however, until the 1970s that the New York Stock Exchange (NYSE) first required the board of directors of their registrants to appoint an audit committee. In so requiring, the NYSE was of the opinion that "…a strong audit committee could stimulate improvements in financial reporting and control and strengthen the credibility of corporate reports" (Vanasco, 1994, pg.19). The Nasdaq Stock Market (NASDAQ) and American Stock Exchange (ASE) did not follow the

NYSE's example until the 1980s, when it became a requirement to maintain an audit committee for all companies listed on the major American stock exchanges.

In his September 1998 speech, now commonly known as the 'Numbers Game' speech, SEC Chairman Arthur Levitt stated that "…qualified, committed, independent and tough-minded audit committees represent the most reliable guardians of the public interest" (1998, pg.5). Consequently, it is considered audit committees play an integral oversight role, particularly when it comes to providing some protection for the investing public from financial reporting shenanigans. Or, as Verschoor determined, "Audit committees are needed because, simply stated, without investor confidence, there isn't the necessary capital for businesses to thrive" (Verschoor, 2001, pg.3). Therefore, it would appear that an audit committee is a vital ingredient in the corporate governance mosaic, such that their existence is seen as providing a safeguarding quality so that investor interests are protected and confidence in the equity markets can be maintained.

The audit committee is a separately designated committee composed of members of the board of directors. One of the committees' primary roles is to oversee the financial reporting process, a responsibility that can include such duties as:

- Reviewing all financial statements prior to their release
- Analysing the existing, and any subsequent changes to, accounting policies and principals
- Monitoring the effectiveness of the internal control system
- Evaluation of the entities exposure to fraud
- Examination of any significant transactions, and appraisal of key management estimates (Archambeault, 2002).

To be capable of satisfactorily fulfilling responsibilities of such a consequential nature it is paramount that the committee performs effectively. Accordingly, audit committee functionality has attracted a lot of scrutiny over recent years. In particular, the Report and Recommendations of the Blue Ribbon Committee (BRC) on Improving the Effectiveness of Corporate Audit Committees and the enactment of the Sarbanes Oxley Act (SOA) in 2002 have transformed and

strengthened many of the minimum standards for compliance applicable to audit committees. These minimum standards are aimed at ensuring audit committees comprise the attributes considered pertinent to function effectively in their role as corporate governance monitors. Attributes that have been offered as enhancing effectiveness are the independence, competence and diligence of the audit committee members.

3.2.1 Independence

The SOA recognised the importance audit committee impartiality plays in the oversight of management, and as a result has been instrumental in requiring improved standards of independence. Section 301 of the Act requires the audit committee to be comprised solely of independent directors. An independent audit committee member is a person who is not affiliated with the company in any way, and does not accept compensation (including consulting, advisory, or other compensatory fee) from the company, other than in their capacity as a member of the board of directors and any board committee.

The independence of audit committee members was seen as pertinent in the attempt to provide a form of corporate governance whose unbiased conduct could be counted upon to appropriately monitor the financial activities of the company and safeguard against questionable accounting practices being used. While it is not the audit committee's responsibility to guarantee the accuracy of a company's financial statements, the independence of the audit committee is considered to offer some assurance to the investing public as to the reliability of the financial assertions made by the entity. The BRC Report recognised that,

> In its oversight capacity, the audit committee is neither intended nor equipped to guarantee with certainty to the full board and shareholders the accuracy and quality of a company's financial statements and accounting practices. Proper financial reporting, accounting, and audit functions are collaborative efforts conducted by full-time professionals dedicated to these purposes. The audit committee, as the first among equals, oversees the work of the other actors in the financial reporting process -- management, including the internal auditor, and the outside auditors -- to endorse the processes and safeguards employed by each (1999, pg.38).

3.2.2 Competence

The competence of audit committee members is also of the upmost importance to the effectual functioning of the committee. The National Association of Corporate Directors (NACD) acknowledged the important role played by the audit committee and as a consequence expressed a heightened need for members to possess accounting and/or related financial expertise (1999). The SEC judged that, "Without some level of financial competence, members of an audit committee may be unable to adequately perform their vital corporate duties" (SEC, 2003b, p.4). The investing public can not seek comfort in simply the provision of an audit committee, that committee has to have the knowledge and skills to be capable of doing the job (Hermanson, 2006).

Effective monitoring of financial information by competent audit committee members is thought to further motivate management to provide an accurate account of the company's economic state of affairs, and hence reduce the likelihood of fraudulent financial reporting. The NYSE acknowledged the significance the audit committee plays in the oversight of management when it introduced listing requirements to ensure that committees' achieved at least a minimum level of competence in accounting and financial matters. Furthermore, to reinforce the concept that competent audit committee members are essential to improving oversight, the SOA implemented legislation requiring disclosure of whether the audit committee is composed of at least one member who possesses accounting or related financial management expertise. And, while this rule comprises a disclosure requirement only, companies that do not have a expert serving on their audit committee must disclose that fact and offer an explanation as to why they have not retained the services of such an expert (Morrison & Foerster, 2003).

Given that a great number of the past corporate scandals have hinged on the quality of disclosures in the company's financial statements, and given the complexities of these disclosures, along with financial reporting requirements as a whole, it would seem justified to require at least one member of the audit committee to have financial reporting expertise. This kind of expertise is believed to greatly enhance the audit committee's chances of detecting, or at least

discouraging, questionable financial practices. Financial sophistication gained through past employment, professional certification or comparable experience in accounting or finance by at least one member of the audit committee can have a beneficial effect on the relative level of understanding of the whole committee. Increased comprehension of accounting regulations is likely to reduce the possibility that questionable accounting practices or judgements will go unnoticed.

In addition to the above stipulations, many of the listing authorities of the various US stock exchanges now compel all audit committee members to be no less than financially literate. Listing rules define financial literacy as "…the ability to read and understand fundamental financial statements, including a company's balance sheet, income statement, and cash flow statement" (Rezaee, Olibe & Minmie, 2003, pg.534). An audit committee member's ability to ask probing questions about a company's accounting practices and financial risks, and the members ability to then intelligently evaluate the answers, necessitates the possession of at least a rudimentary level of financial literacy (BRC, 1999). Furthermore, it is considered that the involvement of individuals on the audit committee that have an understanding of accounting and financial issues can help educate other less knowledgeable board members about the risks associated with financial reporting (COSO, 1999).

3.2.3 Diligence

Another aspect considered to be fundamental to the improved functioning of the audit committee is the diligence of its members. Diligence is deemed the process factor in achieving audit committee effectiveness (DeZoort, Hermanson, Archambeault & Reed, 2002). As a consequence it is considered that the diligence of an audit committee is characterised by the persistence with which its members execute their oversight duties.

Robert Herdman, the Chief Accountant for the SEC, determined that an effective audit committee requires a commitment of both quality and quantity of time. Quality time is needed to ensure the critical corporate governance, accounting and disclosure issues are given the appropriate attention and quantity of time to permit

thorough deliberations and discussion to occur (2002). A significant degree of commitment to the company is needed by audit committee members so that they have adequate time to prepare for and attend meetings, along with a willingness to learn and stay abreast of the company's business environment and topical issues (BRC, 1999). Furthermore, while one hundred percent attendance would be admirable, it is of more consequence that each member is attentive and appropriately participates during the committee meetings. Entering into pro-active discussion with senior management and external auditors regarding the companies critical accounting practices and policies adopted can be of substantial benefit to a member's core understanding and hence the value of their contribution to the committee (Herdman, 2002). In this respect Kowhn and Ueng noted that, "…there simply is no substitute for thoughtful people willing to deliberate long and to probe deeply" (2005, pg.122).

The above assertions would seem to indicate independent corporate audit committees, whose members possess a degree of financial sophistication and are willing to devote sufficient time to discharging their monitoring duties, provide superior performance of oversight functions. This deduction is supported by a modest amount of research that has been conducted over the years into a variety of issues surrounding the audit committee. The following review of the prior literature will provide support for the inclusion of the independent variables classified within the Audit Committee Functionality category.

3.2.4 Number of Members (NmbACMem)

The Blue Ribbon Commission report (1999) recommended that audit committees of listed companies with a market capitalisation of over $200 million should be composed of a minimum of three members. The foundation for this judgement is related to the complicated nature of the responsibilities undertaken by the audit committee. In particular, the commission determined that the complexity of reviewing accounting and financial matters merited a significant number of directors be dedicated to the committee. Bedard, Chtourou & Courteau (2004) considered a minimum of three members provided "…the necessary strength and diversity of expertise and views to ensure appropriate monitoring" (pg.12). It was also recognised that while three members was the recommended minimum, the

benefits additional members could bring to the committee should be weighed against the possibility of incremental cost brought about by poorer communication and decision-making associated with larger groups. "The objective is to have a committee not so large as to become unwieldy, but large enough to ensure effective monitoring" (Bedard et al., 2004, pg.18). To achieve this it was generally recommended that no more than a maximum of five or six members should form the audit committee.

In support of this judgement, Felo, Krishnamurthy and Solieri (2003) hypothesised there would be a positive relationship between audit committee size and financial reporting quality. After taking into consideration that audit committees were less likely to suffer from many of the problems facing larger sized boards of directors, such as slower decision making and a tendency to be predisposed to management manipulation caused by fragmented and less cohesive groups, the authors still found a significant relation existed. Univariate test results identified a significantly positive relationship between audit committee size and financial reporting quality, such that the number of members on the committee increased the quality of the financial statements issued. The authors also verified that the results were robust to different measures of financial reporting quality.

Along the same lines, Lin, Li and Yang (2006) found evidence to suggest that a negative association was present between the size of an audit committee and the occurrence of earnings restatement. While earnings restatement is not fraudulent financial reporting per se, it does indicate the inclination to manipulate financial reports, and has been associated with an increased tendency to commit fraud (Palmrose & Scholz, 2002). This negative association indicates that as the number of members on an audit committee increased the occurrence of earnings restatement decreased. In addition, the researchers ascertained that this result remained stable to changes in committee size measurement, from the actual number of members to a dichotomy of whether the committee existed of at least four directors (Lin et al., 2006).

Univariate tests conducted in a 2002 study by Archambeault also found that fraud companies tended to have smaller audit committees than their no-fraud

counterparts. It was contemplated that the reason for these findings could result from smaller committees not possessing enough manpower to adequately oversee the financial process, or alternatively that with fewer members the committee held less expertise. In either case it is apparent that the size of a company's audit committee can influence the incidence of fraudulent financial reporting. It is therefore hypothesised that:

H_1: Fraudulent financial reporting is less likely to occur as the number of audit committee members' increase.

3.2.5 Independence of Members (NmbIndAC and %IndAC)

The extent to which audit committee members are independent from management can have positive effects on the objectivity and credibility of a company's financial reporting system. Prior research (Persons, 2005; Uzun, Szewczyk & Varma, 2004; Bédard et al., 2004; Abbott, Parker & Peters, 2000; Beasley, Carcello, Hermanson & Lapides, 2000) also concur that audit committee independence improves the integrity of financial statements. These studies found a relationship between the independence of the audit committee and the likelihood of a company succumbing to some form of financial reporting manipulation.

More specifically, Persons (2005) found that fraud firms were more likely to have audit committees that did not comprise solely of independent directors. Beasley et al. (2000) produced similar results when focusing their research specifically on three volatile industry sectors, technology, health care and financial services. The study found that the audit committees of fraud companies within the three industries were less independent than their non-fraud industry benchmarks. Whereas, Abbott et al. (2000) and Uzun et al. (2004) attained results that confirmed a lower incident of misstated or fraudulent financial reports in companies that had a completely independent audit committee.

Additional research has investigated the relationship between audit committees and earnings management. While earlier studies of this nature, such as that conducted by Dechow, Sloan and Sweeney (1996), focused on the existence of an audit committee, later research has focused more prominently on the

independence of the members of such a committee. For example, Klein used a sample of 687 publicly traded US companies to investigate whether the magnitude of discretionary accruals (as a proxy for earnings management) was related to audit committee independence. After controlling for a number of other factors identified as being related to abnormal accruals and audit committee composition, the author found that earnings management was more pronounced for firms that had audit committees comprised of less than a majority of independent directors (Klein, 2000).

In addition, research conducted by Bedard et al. (2004) and Klein (2002a) both found negative relationships between audit committee independence and earnings management. Bedard et al. (2004) considered three aspects of independence, "The number of non-related outside members, whether these members are managers in other firms, and whether they participate in the firm's stock option plans" (pg.7). They found that audit committees composed solely of unrelated outside directors significantly decreased the probability of earnings management. Whilst, Klein (2002a) on the other hand, found that it was the presence of a majority of outside directors, rather than the independence of the entire audit committee, that had a significant effect on the level of abnormal accruals reported by a company.

DeZoort and Salterio (2001) also referred to the importance of audit committee independence when their research found that independent and more highly knowledgable audit committee members were more likely to support external auditors if a dispute with management over proper revenue recognition arose. A study by Carcello & Neal (2003) found that the higher the percentage of affiliated directors (insiders) in the audit committee the more likely the external auditor is of being dismissed subsequent to issuing a going-concern report. Both of these studies further highlight the importance of appointing independent members to the audit committee. Therefore it is hypothesised that:

H_2: Fraudulent financial reporting is less likely to occur as the number of independent audit committee members' increase; and

H_3: Fraudulent financial reporting is less likely to occur as the percentage of independent audit committee members' increase.

3.2.6 Competence of Members (NmbACFE and %ACFE)

A number of studies have found significance between having a financial or accounting expert on the audit committee and the occurrence of earnings management or fraud (Agrawal & Chadha, 2005; Mangena & Pike, 2005; Baswell & Mauldin, 2004; Felo, Krishnamurthy & Solieri, 2003; Abbot, Parker, Peters, & Raghunandan, 2002; Archambeault, 2000). Consistent with many of these studies is the notion that competent members of the audit committee, particularly those with financial expertise, are valuable in providing enhanced oversight of a firm's financial reporting practices. In this regard, the inclusion of a financial expert on the audit committee "…is likely to affect the committee's overall assessment of the quality of a company's financial reports" (Baswell et al., 2004, pg.5).

One of the specific corporate governance issues analysed by Agrawal and Chadha (2005) was the use of independent directors with financial expertise on the audit committee. The authors used a sample of 159 public companies that restated their earnings in 2000 or 2001 and an identical number of industry-size matched control companies that did not restated earnings during that period. Using a definition similar in spirit to that adopted by the SEC, Agrawal et al. defined a financial expertise as those directors with a CPA or CFA, or experience in corporate financial management (e.g., as CFO, treasurer, controller, or VP-Finance). Both univariate tests and a matched-pairs logistic regression model detected a significant difference between restating and non-restating firms and audit committees with at least one independent member with financial expertise.

Mangena and Pike's 2005 investigation into the quality of interim financial reports was based on the mean responses of 79 investment analysts who gave their opinion of the perceived importance of 113 items of information disclosed in the interim reports of companies listed on the London Stock Exchange. The study hypothesised that there would be a positive significant relationship between the quality of interim financial reporting and the presence of financial expertise on the audit committee. In accepting this hypothesis the authors stated that the

"…results appear to suggest that audit committees which include members with accounting or financial management expertise are likely to encourage management to disclose higher levels of investor-oriented information in interim reports" (Mangena & Pike, 2005, pg.340).

A 2004 study conducted by Baswell et al., investigated the change in financial or accounting expertise amongst members of audit committees subsequent to the enactment of Section 407 of the Sarbines Oxley Act, 2002. The study found that firms significantly increased the number of members on their audit committee with accounting experience. Their findings also confirmed however, that "…many firms continue to rely on the weaker definition of financial expertise as CEO/President without direct accounting or finance experience for regulatory compliance…" (pg.4). Given that this result indicates an over reliance by companies on persons who do not have direct accounting or finance experience the authors urged reconsideration of the definition used by the SOA to limit the scope of persons who could be deemed financial experts.

Finally, in 1999 a survey was carried out by Read and Raghunandan to provide insight into whether an audit committee's effectiveness would improve if they adopted the recommendations on independence and director qualifications that were proposed by the Blue Ribbon Commission. The survey results implied that "independent audit committees whose members have expertise in accounting or finance are more likely to execute their duties and act as reliable guardians of the public interest" (2001, pg.3). Of further interest however, were the findings of Felo, et al. (2003) who suggested that "…mandating greater expertise on audit committees rather than simply requiring one expert on the audit committee may be beneficial to investors" (pg.1). This study therefore not only tests for the number of 'financial experts' on the audit committee, but more precisely the percentage of the committee that are considered to have 'financial expertise'. Consequently, it is hypothesised that:

H_4: Fraudulent financial reporting is less likely to occur as the number of ACFE's on a company's audit committee increase; and

H_5: Fraudulent financial reporting is less likely to occur as the percentage of ACFE's on a company's audit committee increase.

3.2.7 Number of Meetings (NmbACMeet)

The frequency with which an audit committee holds meetings per year has often been used as a proxy for diligence (Abbott, Parker & Peters, 2004; Carcello, Hermanson, Neal & Riley, 2002; DeZoort et al., 2002; Abbott et al., 2000; Beasley, Carcello & Hermanson, 1999). More often than not the use of this measurement for diligence is as a result of the ready availability to the information required to populate the proxy. In contrast it has been noted that many of the other attributes that could indicate an audit committee's diligence are not observable by researches and therefore lack the measurement capabilities required for inclusion in many corporate governance studies (DeZoort et al., 2002).

Although not a specific stipulation of the SOA the number of meetings held per year by an audit committee is also considered to enhance functionality and improve oversight of the financial reporting process. The increasing frequency of audit committee meetings shown to be prevailing in compliant firms is thought to be representative of the growing importance given to this matter (Read et al., 2001). Furthermore, the Report of NACD Blue Ribbon Commission on Audit Committees indicated that the diligence of the audit committee is of critical importance when they suggested as a 'rule of thumb' at least four half-day audit committee meetings per year (1999). The stance that more frequent audit committee meetings enhances functionality, therefore helps to achieve the objective of effective corporate governance.

An analysis of proxy data in 1999 by the Committee of Sponsoring Organisations of the Treadway Commission (COSO) identified that most fraud companies either did not have an audit committee, or had an audit committee that met less than twice annually. The authors of the report opined that, "In such an environment, the external auditors may have had little support or oversight from the board, and company executives may have been in a better position to commit fraud" (Beasley et al., 1999). It was proposed that oversight is destined to suffer when insufficient

time is spent undertaking monitoring functions such as financial oversight, risk analysis, and assessment of management integrity.

A study conducted by Abbott et al. (2000), used the number of meetings held by the audit committee as a preliminary proxy to represent the breadth of compliance by public companies with BRC audit committee activity recommendations. The proxy identified a significant negative relation between the number of meetings held and the misstatement of financial reports. A further study by the same authors in 2004 investigated the impact on misstatements when a threshold level of four audit committee meetings per year was used. Consistent with their earlier research a significantly negative association was found to exist between financial report restatements and audit committees that met at least four times per annum. Similarly, results of a study conducted by Carcello et al., led the authors to propose that an audit committee that "…demonstrates greater diligence in discharging its responsibilities… may seek an enhanced level of oversight of the financial reporting process" (2002, pg.372).

Along with several of the above named studies[2] that have indicated a negative relation between the number of meetings held by an audit committee and fraudulent reporting, Xie, Davidson and DaDalt (2003) reported that the frequency of audit committee meetings is associated with reduced levels of discretionary current accruals. The diligence of audit committees has also been found to positively influence external audit coverage and as a result is positively associated with audit fees (Lee & Mande, 2005). Moreover, companies with suspicious changes in external auditors were found to be less likely to meet on a regular basis (Archambeault & DeZoort, 2001).

The above studies point at an increase in audit committee meetings leading to improved functionality and oversight by this monitoring body and hence reducing the likelihood of fraudulent activity. It is expected that a more diligent audit committee, measured by the number of meetings held per year, will be less likely to incur incidences of fraud. In this frame of mind it is hypothesised that:

H_6: Fraudulent financial reporting is less likely to occur as the number of audit committee meetings increase.

3.2.8 Committee Membership (AvgACTen and AvgACDtrships)

Relatively new to corporate governance research is the testing of variables measuring such attributes as the length of tenure and the number of directorships held in unaffiliated companies by members of the audit committee. While these attributes have been included in a limited number of recent studies (Persons, 2005; Yang, 2002), variables measuring similar attributes in the board of directors have been tested slightly more regularly and may therefore provide some indication as to viability of testing these variables. In this way, it is considered the results for testing these attributes in a board of directors setting will be comparable to testing them in a subset of this group, from which the audit committee is composed.

Understandably a director's lack of seniority on the board, and subsequently as a member of it's monitoring committees, can affect their ability to scrutinise top management. It has been suggested that the length of time a director serves on the board can effect the member's willingness to challenge senior management's actions (Beasley, 1996). On the other hand, longer tenure on the board (or committee) may make a member more inclined to raise concern over questionable accounting practices (Person, 2005). In this regard it is considered that newer members to the board (or committee) may be more susceptible to group pressures to conform. Furthermore, new members may hold some concern over the retention of their position following the challenging of certain decisions made or practices undertaken by management. This can especially be the case given that senior management is often heavily involved in identifying and recommending directors to serve on the board and it's monitoring committees (Beasley, 1998). It is also proposed that, "A committee with high turnover may not be as effective as possible given the investment of time required of audit committee members to understand the company's business, financials and other relevant information" (Emmerich, Racz & Unger, 2005, pg.73).

[2] DeZoort, et al., 2002; Abbott et al., 2000; and Beasley, Carcello, Hermanson, & Lapides, 2000.

In support of these theories, Beasley (1996) found that the likelihood of financial reporting fraud is a decreasing function of the average tenure of outside directors. Univariate tests performed by the author identified that the average tenure of directors in fraud companies was 3.8 years of service. Whereas, the same tests on matched no-fraud companies produced a result of 6.6 years of service, giving quite a substantial difference between the two. Beasley concluded that the "…mere inclusion of outside members on the board of directors may not be sufficient to prevent occurrences of financial statement fraud. Instead, the board's effectiveness in preventing such fraud may be affected by…the length of the tenure of board service by outside directors" (1998, pg.58).

Abbott et al's. (2000) study of tenure for board of director members also concurred that longer service was associated with a decrease in the incidence of fraud. Of a similar nature, Yang (2002) found a significantly negative relation existed between audit committee tenure and earnings management. In consideration of this finding the author suggested that committee members with longer tenure might be more effective in limiting earnings management. While a study conducted by Bedard et al. revealed that the average tenure of outside committee members had a negative effect on the likelihood of abnormal accruals. "Thus, knowledge of the company's operations and of its executive directors acquired though experience as a member of the board seems to be effective in constraining aggressive earnings management…" (Bedard et al., 2004, pg.29)

Persons (2005) examined the relationship between fraudulent financial reporting and certain corporate governance attributes. Using a logit regression analysis on a sample of 111 fraud firms and their matched no-fraud counterparts, she found that the likelihood of fraud is lower when audit committee members have longer tenure. Persons considered this result indicated that motivating audit committee members to serve for longer periods of time could be beneficial to improving corporate governance efforts. In consideration of these studies, Hypothesis 7 therefore proposes that:

H_7: Fraudulent financial reporting is less likely to occur as the average tenure of Audit Committee members' increase.

Consistent with the earlier research into the diligence of audit committee members, being able to contribute fully to a committee takes time. If a member of the audit committee holds a number of directorships in other companies it may place constraints on the amount of time he or she can dedicate to any particular entity. This can have a detrimental effect on the monitoring quality of the audit committee as a whole, whereby individual members become too busy to comprehensively undertake their duties. In this regard, Core, Holthausen and Larcker (1999) considered three or more directorships would make a director very busy.

Thinking along the same lines, the NYSE introduced new listing standards for public companies regarding the number of audit committees a member of their audit committee can serve on. And while the listing rule does not actually limit the number, it does discourage registrants from allowing members to serve on more than three audit committees. The exchange does however require that if this guideline is exceeded then the board of directors must determine that the simultaneous service does not impair the ability of the director to serve effectively on the company's audit committee. A survey undertaken by Windram and Song in 2004 upheld the concept of this recommendation when their results confirmed that on average the audit committee chairman of top Fortune 500 companies in the UK held more than three outside directorships. The survey showed that audit committee chairpersons cited the single greatest impediment to audit committee effectiveness was a lack of time (Windram & Song, 2004).

Once more, Beasley (1996) and Persons (2005) are the primary studies that have so far investigated a relation between outside directorships and fraudulent financial reporting. Both report the existence of a significantly negative relationship, which indicates that the likelihood of fraud is lower in firms that have audit committee members with fewer outside directorships. In a similar, but UK orientated study, Song and Windram (2004) used a logit regression to benchmark financial reporting quality against English financial reporting standards during the 1991 to 2000 period. A sample of UK companies that had been subject to adverse rulings by the Financial Reporting Review Panel were tested to identify the impact audit committee characteristics had on the probability

of compliance with financial reporting standards. Their results showed that "…multiple directorships could undermine audit committee effectiveness in financial reporting" (2004, pg.195).

Other empirical studies that have incorporated additional outside directorships as a variable have included Carcello et al. (2002) who, using an agency framework, found that a positive relationship existed between audit fees and the number of outside directorships held in other corporations by board of director members. Therefore, when the assumption that higher audit fees is a surrogate for audit quality is applied their results indicate that directors with more outside directorships improve audit quality. Another study (Shivdasani & Yermack, 1999) investigated whether the involvement of the CEO in the selection of new directors influenced the nature of appointments to the board. It was hypothesised that when CEO's are involved in the appointment process, directors predisposed to monitor CEO actions are less likely to be appointed. Shivdasani and Yermack (1999) found a significantly positive association between appointments of 'busy' directors (directors who are employed and serve on three or more boards, or retired and serve on six or more boards) and CEO involvement.

As shown above the research into the consequences that multiple directorships have on corporate governance, and in particular fraud, is somewhat limited. However, it is considered that the predominant view is that directors who spread their time too thin by taking on too many additional outside directorships may compromise their ability to monitor management well. Therefore, it is hypothesised that:

H_8: Fraudulent financial reporting is more likely to occur as the average number of directorships held by Audit Committee members' increase.

3.3 Board of Director Composition

A substantial body of research exists with respect to corporate governance provided by a company's board of directors. A key element of providing effectual board oversight is said to entail not only the monitoring of management actions but also requires a board to work with senior management to achieve corporate

legal and ethical compliance (BRC, 1999). The BRC described the oversight functions of the board as, "…ensuring that quality accounting policies, internal controls, and independent and objective outside auditors are in place to deter fraud, anticipate financial risks and promote accurate, high quality and timely disclosure of financial and other material information to the board, to the public markets, and to shareholders" (1999, pg.20).

The composition of the board is of particular importance in ensuring effective governance oversight. Board composition not only refers to the independence of its members but also the processes observed for nominating new members to sit on this corporate governing council and, some may say more importantly, whether the board is chaired by an impartial person. Individually each of the above features of board composition can either improve oversight or create monitoring problems. However, a board that combines large qualities of inside directors[3], a chairman who is also the CEO, and one that does not have a functioning nominating committee may be more susceptible to incidents of fraudulent financial reporting.

The level of independence of a company's board of directors has been shown to be an integral part of effective corporate governance, and thus an increase in board independence may bring about a reduction in fraudulent financial reporting. Klein (2003) noted that, "The empirical research, on a whole, supports the markets' view that increasing director independence will lead to more transparent and more reliable financial reports" (p.352). Furthermore, the COSO study found that fraud companies' board of directors were generally not independent, and suggested that a board's "…effective monitoring of management relies on *independent* (emphasis added) experts devoting sufficient time and energy to their task" (COSO, 1999, p.44). In this manner, independence is seen as heightening the objectivity of the monitoring functions performed by this governance body.

As a consequence of falling investor confidence caused by perceived deficiencies in corporate governance the NYSE, NASDAQ and ASE have taken steps to

[3] An insider director is an officer or employee of the company or one of its subsidiary; or an officer of an affiliated company.

increase the level of independence in corporate boards. New listing standards adopted by these exchanges require the majority of the board to have no material relationships with the firm and lengthens the 'cooling off' period for board service by former employees of the issuer or its auditor from three to five years. The NYSE considered that requiring a majority of independent directors would increase the quality of board oversight and lessen the possibility of damaging conflicts of interest. This action in itself stresses the importance with which some regulatory agencies view BOD independence, and brings to light the notion that this factor could be a critical ingredient in the fight against fraudulent financial reporting.

Other factors that are believed to merit attention when considering a board of directors' composition is whether the CEO doubles as the chairman of the board and if the company has a nominating committee in existence, through which unbiased appointments to the board can be made. In relation to these board of director attributes there exists a modest amount of literature to support separating the two most powerful positions in a public company, that of the CEO and chairman of the board. A small amount of evidence can also be found that suggests the existence of a nominating company is beneficial to ensuring the impartiality of members appointed to serve on a company's board of directors.

When a CEO of a company also serves as its chairman of the board an unhealthy power concentration can occur (Dunn, 2004). It has been found that the performance of these dual roles can create twice the power, which can be "…used wisely or it can be abused" (Gavin, 2003, pg.8). In this way power centralisation in the hands of just one person who performs both key positions of the CEO and chairperson may be detrimental to the optimal functioning of the board of directors. It is not uncommon for some board of directors to be in thrall of, or even submissive to, their CEO's (Ward, 2003). This disposition can be very unproductive especially when seeking answers to probing questions about the company's financial results, or justification for accounting practices used. Therefore, it is considered duality of the CEO and chairperson positions could limit the effectiveness of the board of directors as a corporate monitor.

Equally problematic is the environment created when the CEO is responsible for the nomination and appointment of new board members. In this regard it would seem unreasonable to expect a board member who has been appointed by the CEO and relies on his/her endorsement for future renomination, to delve into problem areas that might require the challenging of the CEO's decision, or put other top management under scrutiny. The fear of creating an adversarial relationship that could ultimately deprive the member of their position on the board may lead to less emphasis being placed on controversial matters, such as financial misrepresentations. Strier alleged that, "In a perverse corruption of intention, the representatives of the shareholders, the boards of directors, are often de facto selected and therefore controlled by the top management they presumably monitor" (2005, pg.82). The operation of a nominating committee is seen as alleviating, to some degree, this 'beholden' effect.

The nominating committee is another sub-committee of the board of directors. Two of the most important duties a nominating committee is charged with are the identification of qualified candidates to become board members and the selection of nominees for election as directors. And while many nominating committees are currently not totally independent of top management, the concept of a group of individuals partaking in the decision-making process does point to a more objective setting for appointments to the board. It is thought that this reasonably unbiased method of selection will enhance a board's impartial monitoring of management and thus improve corporate governance oversight.

The above assertions suggest that the composition of the board of directors is paramount to effective corporate governance. It can also be surmised that the quality of oversight generated by this monitoring body could benefit from a board with more independent and objectively selected director's lead by an impartial chairperson. Therefore, it is important to identify whether these proposed attributes of corporate boards also have a bearing on the incidence of fraudulent financial reporting. The literature introduced below is aimed at determining this factor by ascertaining what prior research has discovered. Furthermore, the review will draw upon prior findings to support the posing of several hypotheses.

3.3.1 Number of Directors (NmbDtrs)

Persons (2006) included board size as a variable in her study aimed at identifying corporate governance attributes that could potentially reduce the likelihood of non-financial reporting fraud. Her test results, which were based on logit regression analysis, indicated not only that the independence of the board of directors helps to reduce the likelihood of non-financial reporting fraud, but also that "…smaller board size is likely to be more effective in monitoring management" (2006, pg.37). Persons recognised that the ineffectiveness of larger boards was also reflected in the NYSE's intention to limit the current rule, which permits a 27-member board, to a maximum of eight members.

Likewise, Song and Windram (2004) found when testing the impact board of director and audit committee characteristics have on the probability of compliance with UK financial reporting standards, that larger board size increased the probability of companies committing financial reporting violations. Larger boards are also considered to be associated with lower profitability and decreasing firm value (Eisenberg, Sundgren & Wells, 1998), as well as being easier for the CEO to control (Person, 2006). Conversely, small sized boards are considered to be more profitable (Matolcsy, Stokes & Wright, 2004), and be a determinant of audit committee independence (Klein, 2002b).

An explanation for favouring smaller boards over larger ones was given by McColgan (2001). After reviewing the literature it was considered that corporate boards became less effective as they grew in size due to "…larger boards being slower to react to decisions that require immediate course of action" (pg.21). Increasing the number of members on the board can lead to boards losing their ability to operate decisively, such that directors may "…become less candid in their ability to be critical of one another, thus making for less efficient decision making" (McColgan, 2001, pg.21). This line of thought has been mimicked by a number of other researchers (Chiang, 2005; Matolcsy et al., 2004, Uzun et al., 2004; Felo et al., 2003). Chiang deemed that, "Efficiency is reduced if the number of directors is too large because there is an increased difficulty in achieving agreement concerning decisions" (2005, pg.96).

While a variable measuring the number of members on the board of directors has been included quite frequently in various corporate governance studies it has often produced insignificant results (Carcello & Nagy, 2004a; Matolcsy et al., 2004; Uzun et al., 2004; Abbott et al., 2000; Beasley et al., 2000; Beasley, 1996). Furthermore, a few studies have contended that larger boards do have their benefits. One such study, Beasley and Salterio (2001), found that larger boards were positively related to firms who voluntarily create audit committees composed of outsider members with a breadth of relevant financial reporting and audit committee knowledge and experience. Additionally, Vafeas (1999) found that the number of board meetings held by a company is positively related to board size. However, Vafeas did point out that although the size of corporate boards is positively related to board activity, this was consistent with larger groups requiring more time to attain a given level of output. "In firms with larger boards, board meeting time seems to be partly wasted due to inefficient board sizes. Firm value[4] rises significantly as board size declines" (1999, pg.124).

Based on the above, it is considered more support is offered for the position that larger sized boards of directors are more akin with fraudulent financial reporting and therefore the following hypothesis is posed:

H_9: Fraudulent financial reporting is more likely to occur as the number of directors on a company's board increase.

3.3.2 Board Independence (NmbIndDtrs and %IndDtrs)

One of the earlier studies on fraudulent financial reporting, and one that has also been regularly cited in subsequence research on this topic, is a study undertaken by Beasley (1996). Beasley was an early advocator of board of director independence when in 1996 he empirically tested the prediction that including larger proportions of outside members on the board of directors reduced the likelihood of financial statement fraud. Using logit regression to analyse 75 matched fraud and no-fraud firms, Beasly found that the latter had significantly

[4] Firm value is defined as the market-to-book ratio of the company.

higher percentages of outside directors[5] occupying positions on the board of directors than were present on the boards of fraud firms.

Similarly, Uzun et al. (2004) examined how various characteristics of the board of directors and it's oversight committees, including audit, compensation, and nominating, affected the occurrence of corporate fraud. Their study covered the period between 1978 and 2001 and used logit regression models to test a series of variables on samples of fraud and industry-size matched no-fraud companies. The findings indicated that board composition and the structure of oversight committees were significantly correlated to the incidence of corporate fraud. Of particular relevance was their finding that as the "…number of independent outside directors increased on a board and in the board's audit and compensation committees, the likelihood of corporate wrongdoing decreased" (2004, p.33).

A good many other studies have also found an association between board of director independence and either fraud (Persons, 2006; Farber, 2005; Persons, 2005; Beasley, 1998), or earnings management (Niu, 2006; Peasnell, Pope & Young, 2005; Xie et al., 2003; Klein, 2002b). For example, in an industry-by-industry comparison between the board characteristics of fraud companies and their matched no-fraud industry benchmarks, Beasley et al. (2000) revealed that the percentage of boards with a majority of outside directors was much higher in no-fraud companies when compared to fraud companies. Persons (2006) found that the likelihood of non-financial reporting fraud is lower if the board of directors has a larger proportion of outside independent directors. While, Niu's (2006) test results provided evidence that, similar to US firms, Canadian firms are also more susceptible to earnings management when their board of directors are less independent. Niu found a significant negative association between the magnitude of abnormal accruals and the level of independence of directors on the boards of Canadian firms (2006).

In addition, the independence of a board of directors has been found to be significantly related to a number of other aspects. Firstly, board independence is

[5] An outside director is defined as having no disclosed relationship (other than stock ownership) between the director and the company or its officers.

negatively related to the likelihood of auditor resignation (Lee, Mande & Ortman, 2004) and positively related to audit committee independence (Klein, 2002a). Webb (2004) found that independent boards are more socially responsible, whereas Anderson, Mansi and Reeb (2004) found an independent board of directors was associated with lower cost of debt financing. Greater board independence has also been shown to be associated with higher levels of voluntary disclosures, such that "…boards with a majority of independent directors have significantly higher levels of voluntary disclosures than firms with balanced boards" (Cheng & Courtenay 2006, pg.262).

Beasley and Petroni (2001) found that the likelihood of an insurer employing a brand-named auditor that specialises in the insurance industry increases in the percentage of the board of directors considered to be outsiders. An independent board of directors is also more likely to pay their CEO equitably, basing their remuneration more closely on the performance of the company chief (Ghosh & Sirmans, 2005). In a similar manner, Mishra and Nielsen (1999) found that "…independent boards make greater use of compensation contracts to bring the financial interests of managers in line with those of shareholders" (pg.22).

Finally, in 2004 Ryan and Wiggins conducted research aimed at discovering whether the structure of director compensation mitigated or reinforced barriers to effective governance. They opined that although directors may have "…incentives that diverge from those of shareholders, the evidence suggested that directors on independent boards receive compensation packages that are more closely tied to stock-price performance" (pg.4). In this way it was considered that equity based compensation paid to directors offered incentives to monitor, which in turn provided increased corporate governance oversight. Their tests found that as the independence of the board increased so too did equity based compensation of directors. They believed their results supported the premise that board of director independence enhances shareholder welfare (Ryan et al., 2004).

The results of earlier studies would appear to support the notion that boards structured to be more independent of the CEO may be more effective in their oversight duties thereby constraining management from indulging in accounting

practices that may lead to earnings management or fraud. Therefore, it is hypothesised that:

H_{10}: Fraudulent financial reporting is less likely to occur as the number of independent directors on a company's board increase; and

H_{11}: Fraudulent financial reporting is less likely to occur as the percentage of independent directors on a company's board increase.

3.3.3 Duality of CEO and Chairman (CEO=Chair)

Duality occurs when the same person occupies both the CEO and chairman of the board positions. It is proposed that the objectivity and quality of governance oversight by the board of directors may suffer if the CEO also chairs the board. The board of directors, whose duties include overseeing management on behalf of the firm's shareholders, could be constrained if they are lead by the same person they are supposedly tasked with monitoring. Centralisation of power in a company can result in the CEO being able to exert undue influence over the board by setting board agendas, managing meetings and controlling the flow of information to the members of the board (Persons, 2006).

Another issue that also needs consideration is that, "The board has a significant role in the process of hiring, firing, evaluating, and compensating the CEO…" (Uzun et al., 2004, pg.36). These duties become exceedingly difficult if the CEO also serves as the chairman of the board. Such duality of the two positions is said to eliminate "…an additional monitoring mechanism - that of an independent overseer of the CEO" (Abbott et al., 2004, pg.84). Not only is it doubtful that the CEO would be capable of completely ignoring his personal interests to focus on performing the chair's monitoring function, but it is also disputable that the CEO would not use the chairman position to pressure the board into a preferential assessment of his/her performance as head of the company. In this way inequity of remuneration or continuity of service may arise due to the impartiality of a CEO who is also chairman of the board.

Several other authors share these sentiments. Webb (2004) believed that "…a board more likely to protect shareholders from agency problems would be one with separate individuals controlling the firm and the board" (pg.271). A board of

directors is also seen as ineffective in discharging their monitoring duties if management dominate over board matters (Rahman & Ali, 2006). Furthermore, Carcello & Nagy considered that a person holding both positions could "…yield significant internal influence and power and may have the wherewithal to orchestrate a financial fraud" (2004a, pg.61).

Both Beasley (1996) and DeChow et al. (1996) found significant relationships between CEO duality and fraudulent financial reporting. They posited that companies subject to fraud or earnings manipulation are more likely to have boards dominated by management and a CEO who simultaneously serves as chairman of the board. Interestingly, when Persons (2006) compared her results for the incidence of non-financial fraud with those of Beasley and DeChow et al., she found that the three studies, covering both financial and non-financial fraud, had the same two corporate governance features in common. The author believed that increasing the proportion of outside independent directors on the board and separating the CEO and chairman positions would reduce the likelihood of non-financial fraud occurring. In conclusion, Persons was of the opinion that recent regulatory reform of corporate governance could be further improved by "…disallowing a person to serve as both the CEO and the BOD chairman" (2006, pg.36).

Efendi, Sirvastara and Swanson (2004) investigated the incentives that led to a rash of accounting restatements towards the end of the 1990's. Their study compared companies that announced a restatement in 2000 or 2001 to matched control firms and hypothesised that restatement firms would have a CEO who is also chairman of the board more frequently than their matched control firms. The authors found that restating firms had weaker corporate governance as a result of these firms being more inclined to combine the CEO and board chairman positions. It was also found that the board of directors of restating firms where duality existed were "…more likely to give the CEO a salary increase that is not warranted by the firm's performance" (Efendi et al., 2004, pg.3). Support for this finding is also provided by Core et al. (1999) and Cyert, Kang and Kumar (2002) who found that CEO's who double as the company's chairman of the board are paid more than CEO's who do not hold both positions.

Two other studies, one conducted on Australian firms (Sharma, 2004) and the other on UK firms (O'Sullivan, 2000), confirmed US companies were not the only ones to suffer adverse effects from CEO duality. Similar to Beasley and Dechow et al., the Australian study identified that duality was more pronounced in fraud firms than no-fraud firms. Whereas, tests performed by O'Sullivan detected a negative relation between CEO duality and non-executive representation on the boards of large UK companies (2000).

Duality of the CEO and chairman of the board positions has also be found to have a significantly negative relation on the likelihood of boards voluntarily including outside directors with financial reporting knowledge and experience on the audit committee (Beasley & Salterio, 2001). Equally, Ryan and Wiggins (2004) found that, "When the CEO does not chair the board, firms decrease the percentage of insiders by a greater margin than do firms with dual CEO/chairs. The firms with separate CEOs and board chairs replace most of these insiders with outsiders" (pg.26). Furthermore, non-segregation of the two positions has been proffered as a catalyst for dysfunctional monitoring by board of directors. It is proposed that such deficiencies in oversight are likely to increase organisational costs and subsequently lower organisational performance (Brockmann, Hoffman & Dawley, 2006).

Taking into consideration the above findings it is judged that separating the positions of the CEO and the chairman of the board may be of consequence to ensuring the board of directors is an effective monitoring device. It is therefore hypothesised that:

H_{12}: Fraudulent financial reporting is more likely to occur in company's that have a CEO that is also the Chairman of the Board of Directors.

3.3.4 Nominating Committee (NomExist and NmbNomMem)

Although the nominating committee does not have a direct monitoring function per se, the committee is central to the effective performance and functioning of the board of directors over time. This is due to the nominating committee being tasked with the duties of identifying and selecting appropriate candidates for

nomination to the board. "Indeed, new director and board committee nominations are among a board's most important long-term functions" (Uzun et al., 2004, pg.37).

The nominating committee has only recently emerged as a variable for testing corporate governance effectiveness, and in particular, incorporated into research concerning fraudulent activities. Amongst the limited amount of research available, Uzun et al. (2004) tested whether the boards of directors of fraud companies were less likely to have a nominating committee than boards in matched no-fraud companies. As a contrast, Persons (2005) tested the independence of the nominating committee when she hypothesised that the likelihood of financial statement fraud was lower when a nominating committee is comprised solely of independent directors. While both studies produced insignificant results, it was considered this could be as a consequence of the limited number (approximately 14%) of both fraud and non-fraud firms that actually had an independent nominating committee at the time the research was undertaken (Persons, 2005).

Klein (2006) examined the relation between earnings manipulation and whether the CEO sits on the board's nominating committee. It was asserted that more independent corporate governance structures produce fewer manipulations of earnings by management. Univariate tests found that "…the absolute value of discretionary accruals is positively related to whether the CEO is on the board's nominating committee… Thus, earnings manipulation appears to be positively correlated with the CEO's power over board matters" (2006, pg.21). Earlier studies by Klein also produced evidence of a negative impact with regard to the independence of the board of directors when the CEO sits on the nominating committee (2000) and similar effects on audit committee independence (1998). It was thought that the CEO's reluctance to select independent nominees for appointment to the board of directors, and hence it's sub-committees, was most likely to have caused these findings.

Shivdasani and Yermack (1999) who studied whether appointments to the board of directors can be influenced by CEO involvement in the nominating process

provide some support for the above assertion. The authors "…examine the likelihood that appointees are independent outside directors, 'gray' outsiders who have conflicts of interest, or corporate insiders" (1999, pg.1830)[6]. They found that where nominating committees did exist the CEO is a member of that committee about 33% of the time. Analysis of logit regression models identified that board independence increased from 28% when the CEO is involved in the nomination process to 55% when he/she is not. The results indicate that less independent and more 'gray' outsiders are appointed to the board when the CEO is a sitting member of the nominating committee or where no separate committee exists (Shivdasani et al., 1999).

As suggested by Klein's 1998 research, it is possible that audit committee independence is also effected by the existence of a nominating committee. It is considered that because the road to an independent board of directors starts with the applicants selected for nomination, the existence of a nominating committee can have an effect on the audit committee independence also. Robert Herdman, Chief Accountant for the SEC, questioned "…whether independent parties, not the CEO/Chairman, should be responsible for nominating members of the audit committee" (2002, pg.2). In support of this, Ruigrok, Peck, Tacheva, Greve and Hu, (2006) found in their study of Swiss public companies that the existence of a nominating committee was associated with a higher degree of independence and nationality diversity.

Prior research tends to support the existence of a nominating committee to ensure future improvement to the independence and functionality of the board of directors and its sub-committees. In the same manner as other board committees, it is important to assemble the right 'mix' and quantity of persons to bring about effective oversight. Although law or regulation does not prescribe the exact number of members, the nominating committee, like the audit committee, should contain enough members to ensure that duties can be effectively performed, but not so large as to be cumbersome. Taking this into account it has been judged that

[6] A gray director or gray 'outsider' is a non-management director who has either economic or personal ties to the firm or the firm's management.

the nominating committee should consist of no fewer than three members. In light of the foregoing it is hypothesised that:

H_{13}: Fraudulent financial reporting is less likely to occur when a Nominating Committee exists within the company's board of directors; and

H_{14}: Fraudulent financial reporting is less likely to occur as the number of Nominating Committee members increase.

3.4 Ownership Structure

It is said that one way to prevent fraud is through the development of an appropriate ownership structure (Cafferty, 2004). In consideration of this there are two trains of thought. The first is that company shareholdings held by management and other employees of the entity can be useful in reducing agency conflicts and aligning the interests of management with shareholders. The second is that ownership by persons independent of the company increases monitoring of management activity, particularly that of the financial reporting process, thereby reducing the likelihood of accounting fraud occurring.

Stockholdings held my management is otherwise known as insider ownership. It is theorised that as insider ownership increases, the need for monitoring decreases as a result of the insiders interests being more closely aligned with that of other owners/shareholders (Jensen et al., 1976). Conversely, it has also been found that as management ownership levels rise it can create a power concentration whereby insiders become entrenched and exercise an excessive amount of control over the board (Pergola, 2005). This power concentration may enable insiders to negate monitoring mechanisms and engage in opportunistic behaviour such as manipulating earnings or fraudulently reporting the financial position of the company. "Thus, greater stock ownership by managers increases the power of the internal constituency but decreases the power of the external constituency in influencing corporate performance" (Han & Suk, 1998, pg.144).

Managers that have large stockholdings also have the voting rights to substantially sway the decision-making process. McColgan (2004) asserted that, "With larger voting power managers can make decisions which maximise their utility from the

company…" (2004, pg.50). Furthermore, it is considered that increased stock ownership may also cause managers to falsely report earnings in a hope of manipulating the stock price of shares prior to disposing of them (Cheng & Warfield, 2005).

Similar to Jensen et al's theory on insider ownership (1976), it is considered that as the level of shareholdings held by outsiders' increase, monitoring of management also increases. Outsiders with substantial holdings in a company, such as institutional investors, tend to focus more attention on the entities financial condition and the disclosures produced in the accounting statements. "The fiduciary duty that these institutions owe to their own shareholders or investors suggests that they have incentives to be concerned about the corporate governance of the firms they invest in" (Feldmann & Schwarzkopf, 2003, pg.88). These outsiders are also "…more likely to question and challenge management" (Persons, 2006). In this way, large blockholders play a more pronounced monitoring role than the average outside investor, but both have a positive effect on the control environment. This positive effect emanates from the fact that control is then spread around outsiders and not concentrated in the hands of management.

It would appear that the ownership structure of a company could be of critical importance to the effectiveness of oversight mechanisms employed to reduce the likelihood of fraud occurring. Below is a sample of some of the more recent studies that have investigated the relevance of company ownership structures.

3.4.1 Director Ownership (%InsDtrOwn and %OutDtrOwn)

A recent study conducted by Pergola suggested that the quality of financial reporting might vary with the levels of management ownership in a company. The author proposed a 'U' shaped relationship existed, such that earnings quality is increased at the low and high extremes of management ownership levels. Tests found that earnings quality was reduced when management ownership was between 30%-50% (2005). Han and Suk (1998) also found the 'U' shaped relationship to hold true when considering the effect of ownership structure on firm performance.

Dunn (2004) compared firms convicted of financial statement fraud that had large concentrations of ownership power to firms lacking this type of ownership power and found that fraud was more likely in the former. When modelling the relationship he identified that excessive power was positively related to illegal corporate behaviour. He considered that "…the decision to issue fraudulent financial statements is more likely to occur when there is a concentration of power in the hands of insiders" (2004, pg.408).

In a study of UK companies subject to adverse rulings by the Financial Reporting Review Panel, Song and Windram found that director share ownership could undermine audit committee effectiveness in financial reporting. When considering their results the authors took into account prior literature on director' remuneration that suggested stock and option based plans might encourage risk-taking behaviour. In countering this notion it recognised that, "If risky projects do not have good outcomes, there is a motivation to manipulate accounting numbers…" (Song & Windram, 2004, pg.203).

In support of inside ownership creating motivations to misstatement financial information Klein (2006) found a significant positive relation between earnings management and CEO shareholdings. It was deemed the result was "…consistent with the view that CEOs may manipulate earnings to increase their short-term stock returns" (pg.3). Furthermore, univariate tests conducted by Agrawal et al., (2005) found a significant difference in the median size of ownership holdings by insiders of firms that needed to restate their financials between January 2000 and December 2001, and a matched sample of control firms that did not.

Similar to outside blockholders it is expected that outside directors also have greater incentive to monitor management. Consistent with prior literature, Anderson et al. suggested that "…professional directors and directors with equity stakes are associated with greater monitoring" (2004, pg.322). It is also considered that outside shareholders are associated with more optimal contracting with managers, reducing the influence managers have over their compensation (Bebchuk & Fired, 2003; Cyert et al., 2002; Bertrand & Mullainathan, 2000).

Beasley found that the board's effectiveness in preventing fraudulent financial reporting was affected by the extent of equity ownership levels in the company held by outside directors (1996). His findings indicated that as outside director ownership in a firm increased the likelihood of financial statement fraud decreased. The shareholdings held by board directors is therefore considered to be a key component to ensuring adequate oversight of management and protecting against fraudulent behaviour, hence it is hypothesised that:

H_{15}: Fraudulent financial reporting is more likely to occur as the percentage of company ownership held by Inside Directors increases; and

H_{16}: Fraudulent financial reporting is less likely to occur as the percentage of company ownership held by Outside Directors increases.

3.4.2 Blockholder Ownership (NmbOutBlock and %OutBlockOwn)

Blockholders can come in a number of different forms, such as individual investors, pension funds, mutual funds, corporations, private equity firms, money managers, banks and trusts. The latter forms also being know as institutional investors (Cronqvist & Fahlenbrach, 2006). Regardless of the what type of form they come in, Shleifer and Vishny (1997) found large outside blockholders who are not affiliated with management possess greater incentives to monitor the companies activities more closely due to their larger proportional stake in the firm. "[O]wning a larger stake makes the return on the company's shares more significant for the large shareholder, hence it biases her [the shareholder] towards intervention" (Maug, 1998, pg.67). As most blockholders own at least 5% of the common stock of the entity, shareholders also have a greater ability to monitor and 'voice' their concerns or objections due to their quantity of voting rights. This aspect also provides some measure of control over the firm, which enables the blockholder to "…affect the BOD composition and other governance changes" (Person, 2006).

Wang (2004) took into consideration the fact that only firms where the incidence of fraud has been detected are observable and therefore other firms could be either innocent or 'undetected fraudulent firms'. Consequently, she used econometric methods to account for the 'unobservability' of undetected frauds. Her bivariate

probit model showed that the presence of blockholders increased fraud detection and discouraged the occurrence of fraud. In particular, test results found a 10% increase in blockholder ownership tended to increase the probability of fraud detection by 1%, and decrease the probability of fraud by 3.8%. Wang noted that, "…larger block ownership holdings and institutional holdings are associated with higher likelihood of detection and lower ex-ante propensity to commit fraud, which implies the important role of shareholder monitoring in combating fraud" (2004, pg.1).

The finding that blockholder ownership counters fraudulent activity has also been found to be consistent in the Australian context. As a consequence of greater concentrated ownership by Australian institutional shareholders, Sharma (2004) observed that when compared to the US, these shareholders might play an even more prominent role in monitoring management. "Accordingly, being aware of the institutional investor's role and their close investment relationship with the firm, management may refrain from engaging in fraudulent behaviour" (Sharma, 2004, pg.112).

Along with the studies that have identified the benefits that can be attributed to blockholders as having over the incidence of fraud (Beasley, 1996; Dechow et al., 1996; Sharma, 2004, Wang, 2004; Persons, 2006), a number of other studies have identified additional positives related to blockholders. Yeo, Tan, Ho, and Chen (2002) found evidence of a positive relationship between external unrelated blockholdings and the informativeness of earnings. This finding is posited to offset the entrenchment effect. Likewise, research by Chung, Firth, and Kim (2002) recognised that institutional investor ownership created a less opportunistic environment for earnings management. The authors found less use of discretionary accruals, and hence greater earnings informativeness, when institutional investors owned a large percentage of a company's outstanding shares. Studies have also found unaffiliated blockholders to be positively associated with a higher proportion of outsiders on the board of directors (Feldmann & Schwarzkopf, 2003; Berry, 2000).

Moreover, outside blockholder ownership has additionally been associated with tighter control over executive compensation (Cronqvist et al., 2006; Hartzell and Starks, 2003; Bertrand et al., 2001). Hartzell and Starks (2003) found a positive association between institutional ownership and pay-for-performance sensitivity relating to executive compensation and a negative association when testing for excess salary. These results were considered to be consistent with larger shareholders having greater influence over the firm and in particular management and the policies they implement.

The above findings support the view that blockholders play an active monitoring role in the corporate governance environment, and that this role can potentially reduce the likelihood of fraudulent financial reporting. It is therefore hypothesised that:

H_{17}: Fraudulent financial reporting is less likely to occur as the number of outside Blockholders having ownership rights in the company increases; and

H_{18}: Fraudulent financial reporting is less likely to occur as the percentage of company ownership held by outside Blockholders increases.

3.5 External Auditor Factors

The external auditor is also considered to have an impact on the efficacy of corporate governance, and hence the incidence of fraudulent financial reporting. As the investing public relies upon the external auditors to provide some assurance that the financial statements of a company are not misleading, it is imperative that the corporate governance provided by this monitoring body is not impaired in any way. Thus, it is thought that the external auditing function should be performed by an independent source providing a competent and impartial opinion of the company's financial performance.

The monitoring function performed by external auditors is believed to play an integral part in ensuring quality oversight of a companies financial reporting practices is achieved. Opportunities to defraud or misrepresent earnings can present themselves in many forms, including unusual or complex accounting transactions and/or the use of subjective judgment in accounting estimates

(NCFFR, 1987). To adequately deal with these types of issues requires a professional understanding of accounting intricacies. Therefore, the provision of an unbiased and informed professional opinion regarding the accuracy of financial records, and disclosures therein, by an external auditor can improve governance oversight and lessen the opportunities of a company or its individuals to commit financial reporting fraud.

The capabilities of a company's appointed external auditor have been shown to be of significance to the overall monitoring of an entity. The use of a healthy amount of profession scepticism and a willingness to develop new auditing skills as methods change have been acknowledged as enhancements that could improve the monitoring effectiveness of an auditor (AICPA, 2002). Furthermore, the increased emphasis on auditors to identify fraudulent financial reporting serves to demonstrate the importance this source of oversight can bring to the perceived veracity of the financial reporting process.

For an external auditor to provide satisfactory oversight with regard to reducing the incidence of fraudulent financial reporting it is proposed that several factors may affect the resolve of the auditor and consequently the amount of effort put into challenging the company's reporting decisions. These factors include the length of tenure the auditor has had with the company, and the type of accounting firm involved. For example, whether the auditor retained is one of the previously known Big 6^{7} accounting firms or not.

The auditor's length of tenure has created conflicting views about whether shorter or longer tenures are more suited to ensuring the auditor's independence and objectivity is retained. The two schools of thought are that extended tenures are considered to result in a conflict of interests caused by the close relationship and familiarity between the auditor and the client that is formed over the years of working together. It is believed that longer tenure makes the auditor become stale in their approach to an audit and lose some professional scepticism towards the client, which is considered vital to ensuring financial reports are free from management manipulations (George, 2004). In other words, it could be

considered that with familiarity comes complacency. Additionally, it is speculated that "…the trust that develops between the auditor and client over the auditor's tenure may lead to greater auditor responsiveness to the client's needs, and consequently, less imposition of restrictions on the client" (Burilovich & Kattelus, 1997, pg.11).

Conversely, short tenure can result in audit failures due to lack of knowledge about the client's business operations. Gaining an understanding of these operations can take time; hence mistakes may be more likely to occur when an auditor is unfamiliar with the financial and operational processes of a client or the error patterns relative to the industry the client operates in (Carcello & Nagy, 2004a). Furthermore, it is considered longer tenure can provide the auditor with the necessary insights to better assess the risks a client poses (Lin, Li & Yang, 2006).

It has also been noted that auditors may be more susceptible to management influence in the earlier years of the engagement as a result of the auditor still being in the process of recouping start-up costs. This can make the auditor of the newly acquired client more vulnerable to threats of dismissal, than the same threat issued to an incumbent auditor would pose (Iyer & Rama, 2004). Fear of dismissal may also make short tenure auditors more likely to accede to a client's point of view. This willingness to appease the client could be a by-product of the auditor wanting to preserve their reputation. In this way, it is thought that termination by a client too early into the engagement may cause damage to the auditor's reputation (Geiger & Raghunandan, 2002).

In 1999 Gul stated that, "A long tradition in the auditing literature has assumed that the market for audit services is one which can be characterised as quality differentiated, with two levels of quality depending on the size of the audit firm" (pg.92). While some of the perception that organisations and decision-makers have about the differences in audit quality between Big 6 and non-Big 6 auditors may be as a result of a 'bigger is better' mentality, evidence produced by prior research would suggest there is some substance to this viewpoint. A number of

[7] Due to amalgamations and the like, these accounting firms are now known as the Big 4.

studies state that Big 6 accounting firms are widely viewed as producing higher quality audits than non-Big 6 firms (Carcello et al., 2004; Francis, Maydew & Sparks, 1999; Gul, 1999; Ragnunandan & Rama, 1999). One rationale put forward for this argument is that Big 6 (then known as Big 8) firms, "…possess technological advantages that lead to the detection of more material errors in client financial statements" (McMullen, 1996, pg.94). In this regard it is posed that greater technology allows for more sophisticated fraud detection techniques to be used than what is available in smaller accounting firms. Carcello and Nagy (2004b) also cite size differences when they describe Big 6 firms as 'quality-differentiated suppliers' and suggested that a lower incidence of fraud is likely when a Big 6 accounting firm is retained.

Several other explanations for the size of the auditing firms differentiating quality have also been noted. Colbert and Murray 1999 believed the association was related to auditor reputation. The authors were of the opinion that larger auditing firms "…have a greater incentive to guard their reputations because of the larger quasi-rents they could possibly loose by performing substandard work" (pg.268). They also cite a mutual monitoring incentive brought about in larger firms by the fact that partners have significant amounts of human capital tied to the firm's reputation. "Thus, firm size could be an effective quality indicator" (Colbert et al., 1999, pg.268). It is also believed that larger, better known accounting firms can bring credibility to the audited financial statements (Ahmad, Houghton & Yusof, 2006; Krishnamurthy, Zhou & Zhou, 2006; Krishnan, 2003; Francis & Krishnan, 1999).

Another issue that might also lend some weight to the perception of differentiated quality of Big 6 audits could be associated with the concept of independence. If a portion of auditor independence is thought to be linked to the relative reliance an auditor attaches to the retention of a specific client, then non-Big 6 auditors are more likely to be influenced by the 'materiality' of keeping the client happy. This is particularly the case if the client is a major source of income for the auditor. Due to the size of Big 6 accounting firms and the extensive number of clients these firms attract, dependence on specific clients is less likely to be an issue. Whereas smaller firms may be more dependent on the retention of a few clients,

especially in the highly competitive world of audit services, larger clients may not be so readily affected by this situation. This reliance in smaller accounting firms could present independence issues, such that the client may be capable of influencing the actions of the auditor in such a way as to persuade accounting anomalies to be overlooked.

However, there is another potential rationale for why Big 6 auditors are less likely to be involved with fraud companies, that being that size does not so much differentiate quality of auditing but more so the ability to pick and choose clientele. Larger auditing firms, such as the Big 6, predominantly avoid taking on clients that are deemed high risk, thereby leaving these clients, of somewhat questionable standards to the smaller auditing firms. It follows then that as high-risk clients must be audited by someone a number of the clients taken on by non-Big 6 firms are those that have previously been rejected by Big 6 firms on the basis of riskiness. Right or wrongly this can create the illusion that the quality of the smaller auditing firms is not so reliable when their clients are caught manipulating the rules. Therefore, in reality it is not so surprising that fraudulent companies are more likely to be audited by non-Big 6 firms when consideration is given to the practice observed by Big 6 auditing firms to avoid high-risk clients.

This notion of risk avoidance is further supported by the fact that Big 6 auditing firms are less likely to take on clients in financial stress (Raghunandan & Rama, 1999). Therefore, as financial stress has been shown to be associated with the inclination to manage earnings or commit fraud (Carcello et al., 2004; Lee, Ingram & Howard, 1999), it follows that Big 6 auditing firms may be less likely to have clients that fraudulently report their financial condition. However, it must be noted that this situation is not necessary brought about by a differentiation in the quality of auditing.

These observations are all indications of why factors relating to the external auditor, in particular their length of tenure and audit firm type, are important to corporate governance, and in turn may play a part in reducing the likelihood of fraudulent financial reporting. Below is a sample of the literature that has previously investigated these issues.

3.5.1 Auditor Tenure (AudTen)

By comparing firms cited for fraudulent financial reporting between 1990 and 2001 with both a matched set of non-fraud firms and with the available population of non-fraud firms, Carcello and Nagy (2004a) were able to study the relationship between auditor tenure and fraud. The authors posed two hypotheses –

> "H_1: Fraudulent financial reporting is more likely given short auditor tenure (three years or less) as compared with medium auditor tenure (four to eight years); and
> H_2: Fraudulent financial reporting is more likely given long auditor tenure (nine years or more) as compared with medium auditor tenure (four to eight years)" (Carcello et al., 2004, pg.59).

The results of both univariate and multivariate tests supported Hypothesis 1, finding a significant positive relation existed between short auditor tenure and fraudulent financial reporting ($p<0.01$). On the other hand, Hypothesis 2 was unsupported when the tests failed to find any association between financial reporting fraud and long auditor tenure. In response to these results the authors deemed fraudulent financial reporting to be "…more likely to occur in the first three years of the auditor-client relationship" (2004, pg.55).

While the research pertaining to auditor tenure and fraud per se is scarce, the length of auditor tenure has been studied quite extensively in relation to audit 'quality'. Geiger and Raghunandan (2002) examined prior audit reports for a sample of companies entering into bankruptcy during the period 1996-1998. Their research utilised multivariate analysis to test for an association between the length of auditor tenure and the type of audit opinion issued on financial statements immediately prior to the client declaring bankruptcy. The objective of the study was to highlight if the duration of the auditor-client relationship had a bearing on audit reporting failures. Tests found a positive association existed between auditor tenure and the likelihood of a prior going-concern modified audit report being issued to a subsequently bankrupt company. Within the scope of the study it was found that a clean audit report was more likely to be issued by a 'newer' auditor prior to a company declaring bankruptcy. Their findings support the conjecture that audit reporting failures are more likely to occur in the initial years of an audit engagement. Hence the results were "…consistent with the

position that auditors may be more influenced by their newly obtained clients in the earlier years of the engagement" (Geiger et al., 2002, pg.74).

The relationship between auditor tenure and earning quality was investigated by Myers, Myers & Omer, (2003). To test for an association the authors used absolute abnormal accruals and absolute current accruals to proxy for earnings quality. A significantly negative relation between auditor tenure and positive (income-increasing) accruals was found, along with a significantly positive relation between auditor tenure and negative (income-decreasing) accruals. These results were interpreted by the authors as suggesting that, "…in the current environment, longer auditor tenure, on average, results in auditors placing greater constraints on extreme management decisions in the reporting of financial performance" (Myers et al., 2003, pg.779).

A variable measuring the length of auditor tenure also appears in a number of other studies testing the management of earnings through the use of discretionary accruals. In 2003 Ghosh and Moon found that absolute discretionary accruals and the use of large negative special items to manage earnings decrease as the auditor tenure became longer. Another study, by Davis, Soo and Trompeter (2000), found that clients of auditors with short tenure (measured as 1 to 2 years) have higher discretionary accruals and lower earnings response coefficients. The authors deemed that this was indicative of auditors with shorter tenure providing lower information credibility and lower information quality. Contrary to this finding, test results further identified that clients of auditors with long tenure (measured as 3 to 5 years) had lower discretionary accruals and higher earnings response coefficients. This was deemed to indicate that auditors with longer tenure provided both higher information credibility and information quality. Furthermore, the results also showed that as the length of auditor tenure increased from six to fifteen years, client management had less reporting flexibility (Davis et al., 2000).

Similar results for reporting flexibility were reported by Lee and Mande (2003) who undertook research to examine how the Private Securities Litigation Reform Act of 1995 would affect an auditors incentives to curtail earnings management

by their clients. In multivariate tests the audit tenure variable produced a significantly negative result, which the authors considered offered confirmation that "…firms appear to have less reporting flexibility over time with the same auditor" (Lee et al., 2003, pg.103). It is thought that by allowing less flexibility in reporting earnings the auditor might reduce their likelihood of being subject to litigation. Following along these lines, Fanning and Cogger (1998) considered a possible explanation for a significantly negative association between litigation and auditor tenure may be that a longer tenure auditor will elicit more scrutiny of known problem areas, including discretionary accruals. Or, conversely, the high cost of learning a company's business in the early years of an engagement might preclude an effective audit from being conducted by newly appointed auditors.

The above findings would suggest that there is reason to consider the length of tenure when determining the relative ability of the external auditor to act as a corporate monitor in identifying, and taking action against, fraudulent financial reporting. It is therefore, hypothesised that:

H_{19}: Fraudulent financial reporting is less likely to occur as the tenure of a company's external auditor increases.

3.5.2 Big 6 Auditor (Big6Aud)

Similar to auditor tenure, prior research into the association between auditor type and fraud is limited. However, Carcello et al. (2004) did find companies with a fraud-related SEC enforcement action were less likely to use a Big 6 auditor than their matched non-fraud counterparts. The study concluded that the likelihood of fraudulent financial reporting is lower for companies whose audit services are provided by a Big 6 accounting firm. Another study conducted by the same authors provided evidence that auditor industry specialisation offered positive benefits in deterring fraudulent financial reporting. It was opined that "…the major accounting firms have organised their audit practices along industry lines, reflecting a belief that industry specialisation leads to higher quality audits" (Carcello & Nagy 2004b, pg.651). Their tests found a negative relation between industry specialisation and fraudulent financial reporting, and it noted that the relation was even stronger for clients of Big 6 accounting firms.

Of a comparable nature, several studies have reported an association between auditor type and earnings manipulation (Siagian, 2002; Reynolds & Francis, 2000; Francis & Krishnan, 1999; Becker, DeFond, Jiambalvo & Subramanyam, 1998). Siagian (2002) found that companies that used a non-Big 5 (previously Big 6) audit firm increased the probability of earnings manipulation. A study conducted by Becker et al. (1998) used a sample of 10,379 Big 6 and 2,179 non-Big 6 firm years, and found support for their hypothesis that clients of non-Big 6 auditing firms reported income increasing discretionary accruals relatively more than clients of Big 6 firms.

Furthermore, Krishnan (2003) noted the existence of an association between stock returns and discretionary accruals for clients of Big 6 auditors, and that this association was greater than that of firms audited by non-Big 6 auditors. It was also found that a greater association was present between discretionary accruals and future profitability for clients of Big 6 auditor than that of non-Big 6 auditors. These results suggested that the informativeness of discretionary accruals is higher, while the risk of earnings management is lower, when auditing services are provided by a Big 6 auditor. In summation, Krishnan determined that "…the findings are consistent with the notion that higher audit quality is associated with Big 6 auditors, and this is reflected in the security returns of clients of Big 6 auditors" (2003, pg.124). Similar findings to Krishnan's were also noted by Krishnamurthy et al. (2006).

In support of the quality-differentiated supposition, Krishnan and Schauer (2000) found evidence to confirm larger auditing firms were capable of achieving better audit quality than smaller accounting firms achieve. The study used a proxy for audit quality that was based on the client's compliance with eight GAAP reporting requirements. Test results showed that non-compliance decreased as one shifted through the categories of small non-Big 6 auditor to the large non-Big 6 auditor, and finally from large non-Big 6 auditor to a Big 6 auditor.

Other studies record additional characteristics common to Big 6 auditors that are likely to have a bearing on the audit quality and hence the potential for fraudulent financial reporting going undetected. Raghunandan and Rama (1999)

documented the likelihood of a Big 6 accounting firm serving as the successor auditor was lower when the auditor change was caused by the resignation of the predecessor. Subsequent analysis found that the likelihood of a Big 6 auditor accepting a client whose predecessor auditor had resigned was minimal and that these observations were further accentuated when the company was in financial distress. Whereas, a study by Coffee (2001) reported that approximately 76% of all US publicly listed companies were audited by Big 5 (previously Big 6) auditors. This was considered an indication that the five (six) major accounting firms were relatively independent of their clients and that no single company was material to the operating revenue of a Big 5 firm. Finally, in a review of the literature Cohen et al. (2002) also indicated that "…audit committee members perceive that financial reporting quality will be positively affected by having a large auditor, as larger firms are more likely to disclose discovered errors" (pg.597).

Collectively the above mentioned studies seem to endorse the notion that Big 6 auditors are not found to audit fraudulent companies less often that non-Big 6 auditors. And while not whole-heartedly supported, these studies appear to support the supposition that size makes a difference in audit quality, although it can be considered questionable as to exactly why this differentiation exists. Nevertheless, it is suggested that Big 6 auditors may have an impact on the likelihood of fraudulent financial reporting occurring. The final hypothesis of this investigation therefore proposes that:

H_{20}: Fraudulent financial reporting is less likely to occur when a company retains the services of a Big6 auditor.

3.6 Deficiencies in the Literature

Although a vast body of research exists with regard to the various aspects of corporate governance, only a small quantity is linked with aspects of fraudulent financial reporting per se. Furthermore, while some research pertaining to the deterrent qualities of audit committees' and board of directors' on the occurrence of fraud also exists, only one previous study has examined the presence of new corporate governance standards on the existence of financial statement fraud

(Persons, 2005). This study will draw upon and extend Persons' (2005) framework by refining and expanding the number of independent variables, thereby testing a number of additional distinct hypotheses.

Also, the timing of previous studies lack the ability to show if the implementation of legislation and revision of regulations have had any consequential effect on the incidence of financial statement fraud. The timeframe for the research will distinguish this report from earlier ones, as it will have the advantage of including data made available by the implementation of a variety of new rules aimed at strengthening corporate governance. Whereas, to the best of my knowledge, earlier studies have included data collected only as late as October 2003, this study will incorporate data to the end of June 2006. This aspect is significant in that it will permit the inclusion of up to three years more data than has previously been tested and that this data will more closely reflect the current conditions of corporate governance in public companies.

3.7 Summary

The foregoing literature review of prior research undertaken was aimed at providing support for the inclusion of the various independent variables selected in this study to represent attributes of corporate governance that are likely to have a bearing on the incidence of fraudulent financial reporting. Four categories of corporate governance were covered by the review, Audit Committee Functionality, Board of Director Composition, Ownership Structure, and External Auditor Factors. Research of particular relevance to each of the four categories was thoroughly reviewed and the subsequent findings used to aid in the posing of twenty directional hypotheses. (A complete list of these hypotheses is presented below in Table 1.) The shear volume of prior research able to be reviewed was of substantial benefit and provided the means by which the direction of the hypotheses could be predicted. This capability potentially enables more precision to be achieved during the testing phase. The results of tests conducted to accept or reject the proposed hypotheses are included in Chapter 5, while in the following chapter an explanation of the research methods utilised is presented.

List of Hypotheses Posed

Audit Committee Functionality:	
H1:	Fraudulent financial reporting is less likely to occur as the number of Audit Committee members' increase
H2:	Fraudulent financial reporting is less likely to occur as the number of independent directors on a company's Audit Committee increase
H3:	Fraudulent financial reporting is less likely to occur as the percentage of independent directors on a company's Audit Committee increase
H4:	Fraudulent financial reporting is less likely to occur as the number of ACFE's on a company's Audit Committee increase
H5:	Fraudulent financial reporting is less likely to occur as the percentage of ACFE's on a company's Audit Committee increase
H6:	Fraudulent financial reporting is less likely to occur as the number of meetings held by Audit Committees increase
H7:	Fraudulent financial reporting is less likely to occur as the average tenure of Audit Committee members' increase
H8:	Fraudulent financial reporting is more likely to occur as the average number of directorships held by Audit Committee members' increase
Board of Director Composition:	
H9:	Fraudulent financial reporting is less likely to occur as the number of directors on a company's board increase
H10:	Fraudulent financial reporting is less likely to occur as the number of independent directors on a company's board increase
H11:	Fraudulent financial reporting is less likely to occur as the percentage of independent directors on a company's board increase
H12:	Fraudulent financial reporting is more likely to occur in company's that have a CEO that is also the Chairman of the board of directors
H13:	Fraudulent financial reporting is less likely to occur when a Nominating Committee exists within the company's board of directors
H14:	Fraudulent financial reporting is less likely to occur as the number of Nominating Committee members' increase
Ownership Structure:	
H15:	Fraudulent financial reporting is more likely to occur as the percentage of company ownership held by Inside Directors increases
H16:	Fraudulent financial reporting is less likely to occur as the percentage of company ownership held by Outside Directors increases
H17:	Fraudulent financial reporting is less likely to occur as the number of outside blockholders having ownership rights in the company increases
H18:	Fraudulent financial reporting is less likely to occur as the percentage of company ownership held by outside blockholders increases
External Auditor Factors:	
H19:	Fraudulent financial reporting is less likely to occur as the tenure of a company's external auditor increases
H20:	Fraudulent financial reporting is less likely to occur when a company retains the services of a Big6 auditor

TABLE 1 – List of Hypotheses Posed

Chapter Four

RESEARCH METHODS

4.1 Introduction

The aim of this paper is to analyse whether there is a relationship between certain corporate governance attributes and the incidence of fraudulent financial reporting. In particular, the objective is to ascertain whether fraudulent financial reporting is related to any of the variables classified into four broad categories of corporate governance, being audit committee functionality, board of director composition, ownership structure and external auditor factors. To investigate the potentiality of such a relationship existing, a sample of fraud companies was selected and examined. Then to enable tests to determine whether a relationship exists, the identified fraud companies were matched with companies very similar in nature based on a number of business characteristics, such as industry and size. This identification of a matched non-fraud company for each fraud company provided a control group from which differences in corporate governance attributes could be distinguished.

Statistical analysis of the data was then performed using the computer programme, SPSS (Statistical Package for Social Sciences). SPSS provided a platform where both univariate and multivariate testing methods could be applied to the case/control research design utilised by this study. Under this application, tests of comparison between fraud and non-fraud companies were capable of being executed, along with logistic regression analysis to determine relationships among the data and the strength of each of the tested variables to predict fraud.

This chapter will serve to provide a description and analysis of the methods applied in collecting and preparing the data deemed necessary to test for the existence of a relationship between fraud and attributes of corporate governance. Firstly the chapter will identify and discuss the databases used to collect the

information necessary to conduct the study. The fraud sample selection and the matching process will then be explained, followed by a description of how each of the independent and control variables were measured. Finally, a review of the research design and selection of the analysis methods utilised will be provided. While the methods employed by this study will be discussed in this chapter, the results emanating from those choices will be presented in Chapter Five.

4.2 Databases

Several databases were used in the sample selection and data collection phases of this study. Initially the LexisNexus database was utilised to distinguish cases of fraudulent financial reporting, which ultimately resulted in the identification of the fraud-company sample. LexisNexis is a searchable archival database that offers access to promulgated legislation and many legal documents. Included in this database are all AAER's, which detail the legal inditements brought against entities by the SEC under the Securities Act 1933 and the Securities Exchange Act 1934. As such, LexisNexis was used to populate the dependent variable, fraudulent financial reporting. (More information relating to this database and the use of AAER's is provided in the following section.)

Both the Thomson ONE Banker and EDGAR databases were then used in the collection of data necessary to allow the matching process to be accomplished. The Thomson ONE Banker database, administered by Thomson Financial, provided the financial data needed for matching, along with a search tool capable of customising searches by set criteria. Thomson ONE enables customised searches to be undertaken in relation to data compiled on over 28,500 active and 9,500 inactive companies worldwide. The database also allows time series data to be retrieved for up to a 10-year period. To this end the database was searched to not only retrieve information relating to a precise time period, but also using matching criteria such as Standard Industry Code, Listing Exchange, and Total Assets to identify a selection of companies capable of being matched to a specific fraud company. The information retrieved enabled a relatively accurate match of fraud and non-fraud companies to be achieved.

Finally, the EDGAR system, which is a database administered by the SEC, was used extensively throughout the study, not only for matching purposes but also to provide the necessary corporate governance information. Access to the EDGAR database is publicly available via the worldwide web, from which a wide array of financial, listing and other general information about US public companies can be obtained. To satisfy certain obligations under US legislation all listed companies must submit quarterly and annual filings to the SEC, which include a great number of financial and operational disclosures. Filings available on EDGAR include a company's Form 10-K and Proxy Statements, which provide a comprehensive overview of the registrant's business. These documents discuss such issues as proposals for new additions to the board of directors, a variety of information about directors' and management, including their employment history and qualifications, as well as shareholding structures and other declarations made by company management. The information available on EDGAR was therefore used to populate the independent variables depicting various aspects of corporate governance.

4.3 Fraud Sample Selection

Generating a sample of fraudulent companies is limited to cases of discovered fraud only, and as such cases of fraud as yet undiscovered are not available to be studied. Therefore, to the extent that a complete list of all companies that have fraudulently reported their financial statements does not exist (Beneish, 1997), it is appropriate that fraud companies are identified through a review of discovered cases of fraud described in AAER's issued by the SEC. As the US Government delegates enforcement powers concerning fraudulent financial reporting to the SEC, these enforcement releases form a verified basis on which a sample of fraud companies can be selected. Furthermore, as numerous earlier studies (Beasley, 1996; McMullen, 1996; Bonner, Palmrose and Young, 1998; Saksena, 2001; Archambeault, 2002; Geriesh, 2003; Erickson, Hanlon & Maydew, 2004; and Persons, 2005), have used the same fraud identification process, this method of sample selection will facilitate comparison of this study's findings with those of prior research.

AAER's, retrievable via the NexisLexis database, summarise the SEC's accounting-based enforcement actions and describe investigations into alleged violations of the accounting provisions sanctioned under US securities law. The term 'alleged' is used because a large portion of enforcement actions brought by the SEC are settled without the charges being admitted or denied (see Chapter 2 for a more thorough discussion on this topic). Therefore, AAER's from which the sample of fraud companies are drawn, describe both settled and litigated cases of fraudulent financial reporting issued by the SEC.

Fraud companies were identified based upon a review of enforcement actions taken against organisations and individuals alleged to have violated SEC regulations in relation to anti-fraud provisions. AAER's recorded on the LexisNexis database as being issued between 1 January 2004 and 31 June 2006, specifically, numbers 1937 to 2455, were completely reviewed to distinguish entities that were considered to have committed fraudulent financial reporting. In accordance with the definition and measurement criteria given in Chapter 2 of this report, fraudulent financial reporting was deemed to have occurred if an AAER recorded an alleged violation of Sections 17(a) of the Securities Act 1933 and/or section 10(b) (in conjunction with Rule 10(b)-5) of the Securities Exchange Act 1934.

All companies falling within the above-mentioned range were examined and of the original 519 AAER's issued 17 were either not assigned by the SEC or missing from the database. A thorough examination of the remaining 502 eliminated a further 279 AAER's because they either related to administrative proceedings[8] or the release pertained to enforcement action taken against companies already recorded in an earlier AAER (i.e. multiple AAER's existed for many of the cases). As a result 223 AAER's related to unique cases of alleged SEC anti-fraud violations, all of which were drawn in for use in this study.

A firm was selected as a fraud company if – (1) the fraud was considered to constitute fraudulent financial reporting, (2) the fraud period was clearly

[8] Administrative proceedings relate to such issues as reinstatement of privileges to appear before the SEC as an accountant or lawyer.

mentioned in the AAER, (3) the firm filed either a Form 10-K or Proxy Statement with the SEC during the initial fraud year, (4) financial statement information for the year prior to the initial fraud year[9] is available from either SEC filings or the Thomson ONE Banker database, and (5) the fraud company is not a financial institution[10]. Each one of the five above-mentioned parameters was considered important to either the sample identification or data collection stages of this study.

First and foremost it was paramount to determine that the alleged offence did constitute the study's definition of fraudulent financial reporting. Secondly, it was necessary to be able to ascertain the period of the fraud, particularly when it was deemed the fraudulent reporting began, so that the most accurate and relevant governance and financial data could be gathered. In this regard it was considered that governance data collected from the Form 10-K or Proxy Statement filed with the SEC needed to relate to the period when the fraud was first identified as having occurred. This was in order that the aspects of governance in effect during the fraud period could be examined. Whereas, the financial data for each entity needed to relate to the period prior to the fraud to ensure the data used more accurately reflected the true, non-manipulated, financial position of the company.

Finally, it was relevant to distinguish financial institutions (SIC 6000-6999) from other entities so that these could be excluded from selection. This action was taken in accordance with prior research (Cheng & Warfield, 2005; Carcello & Nagy, 2004a; Dunn, 2004; Geriesh, 2003), which determined that financial institutions tended to be highly regulated, and as such may invoke requirements that go beyond the monitoring of regular publicly traded entities. It is believed that the inclusion of financial institutions might have skewed test results with regard to governance attributes.

In addition to the information provided in the AAER's sourced from LexisNexis, data needed to be gathered from the SEC EDGAR and Thomson ONE Banker databases. These databases were used to establish whether sufficient information

[9] Financial information based on non-fraudulent figures is needed to accurately measure the 'size' of each fraud company for matching purposes.
[10] A financial institutions was considered to be any company that had a Standard Industry Code between 6000 to 6999.

for the fraud company existed and was available for utilising in the matching process and to populate the independent variables. Of primary importance was the need to establish that the fraud company did in fact lodge a Form 10-K or Proxy Statement for the applicable period and that these documents contained all the necessary information regarding corporate governance attributes. To achieve this the appropriate SEC filing for each company needed to be reviewed and the relevant data manually transferred to an Exel spreadsheet. A search of the Thomson ONE Banker database was also needed to verify that relevant financial information was available for the year prior to the initial fraud year.

The above mentioned selection process reduced the number of AAER's from 223 unique fraud cases to 113 companies considered to have committed fraudulent financial reporting. This outcome is illustrated in Table 2, which depicts the elimination of 22 cases relating to incidents not considered to constitute fraudulent financial reporting, 4 cases where the fraud period was not stated, 59 companies that did not have the relevant information publicly available in either the SEC of Thomson ONE Banker databases, and 16 financial institutions. A further 9 companies were eliminated as a result of no appropriate match being able to be identified. The final selection yielded a sample of 113 fraud companies.

Fraud Sample Selection

Number of AAER between 1 January 2004 and 31 June 2006	502
Less:	
Multiply AAER recordings for a unique case or AAER pertaining to administrative proceedings	279
AAER not considered to constitute fraudulent financial reporting	22
AAER where the fraud period was not determinable	4
AAER issued against companies with no available Form 10K/Proxy or financial statement data	59
AAER issued against financial institutions	16
AAER issued against company where no appropriate match could be identified	9
Balance	**113**

TABLE 2 – Fraud Sample Selection

Upon establishment of the final selection of fraud companies the EDGAR database was used to identify the industry sector SIC code of each entity. This

information, along with the data gathered thus far in the identification and selection of the fraud sample, was then used in the matching process to establish a suitable control group of non-fraud companies.

4.5 The Matching Process

Fraud companies were matched to non-fraud companies via a specific matching process. This process included matching a fraud company with a non-fraudulent counterpart within the same industry sector, based on SIC coding, and took into account the timing of the fraud to ensure the data for each pair came from the same period. Company size, based on total assets, was also taken into consideration along with the US stock exchange on which the company was listed. It is proposed that matching via this comprehensive set of criteria would improve the calibre of matched pairs and hence the quality and precision of the test results.

For the purposes of this matching process the industry sector was based on the Standard Industry Code (SIC) assigned to each company dependent upon the industry they operate in. This code was able to be sourced from both the SEC EDGAR and Thomson ONE Banker databases. Where an industry was classified under a number of codes the primary SIC was used. The year prior to the initial year of fraud was used for matching purposes and ensured the financial data for both the case and control sample groups came from the same time period. This additionally enabled the actual performance of the fraud company, prior to manipulation, to be used to match the pairs.

The size criterion was determined by the value of Total Assets specified in the annual financial report issued in the fiscal year preceding the fraud period. To match the pairs on a size criterion was deemed important because of the need to ensure both the fraud and non-fraud companies shared a relatively similar availability to resources and were therefore capable of implementing comparable corporate governance structures. The criterion used to match by stock exchange was quantified as the national securities exchange/stock market the company was registered with at the time the fraud occurred. Matching on this criterion was thought to control for any differences in corporate governance requirements

across the various exchanges. Information for both the size and exchange criterions was gathered from the Thomson ONE Banker database.

The matching process utilised the Thomson ONE Banker database to search for appropriate matches based on the criterion data (ie. SIC code, time, size and exchange) of each fraud company. Exact matches of the time and exchange criterion were sought, while acceptable limits were established within which the SIC coding and size criterions were permitted to deviate. These limits were set to emulate earlier studies, such as Beasley (1996), which permitted industry matches to two digit SIC code, and a 30% margin, above or below the total assets of the fraud company, for matching by size.

Possible matches for the fraud companies were identified through the use of customised searches of the Thomson ONE Banker database. Excel spreadsheets were used to collate the data furnished from each search, which was then sorted and assessed so that the closest possible matches could be identified. Those companies that most closely fit the matching criterion were then checked within the SEC's EDGAR database, firstly to confirm that the possible match had not previously been the subject of fraud allegations. And, secondly, to ensure a Form 10-K or Proxy Statement for the appropriate time period was available. If the possible match was not recorded by the SEC for prior fraudulent activity and the appropriate data was available, the entity that most closely matched the fraud company criterion was then selected for the non-fraud control sample. This step of the matching process sometimes necessitated the checking of numerous possibilities before a suitable match could be found.

4.5 Measurement of the Independent Variables

The following sections provide detailed information about how each independent variable was measured. The variables have been grouped into four corporate governance categories, each incorporating individual variables depicting specific attributes pertaining to either audit committee functionality, board of director composition, ownership structure or external auditor factors. The individual variables that comprise each of these categories are discussed below.

To populate the majority of the independent variables identified in Chapter 3 of this report, this study made use of the information provided in each company's Form 10-K and Proxy Statement. Both of these filings contain relatively the same information, most of which pertains to matters related to corporate governance. The annual filing of the Form 10-K was predominantly used to provide all the necessary information to populate the variables. However, if for any reason the Form 10-K was unavailable or the required information was not specified therein, the company's Proxy Statement was used as an alternative to source the data.

4.5.1 Audit Committee Functionality

The functionality of an audit committee, being the independence, competence and diligence of its members is considered to be of vital importance to its role in providing effective oversight of the financial reporting process. With this level of importance taken into consideration a number of variables were selected to depict audit committee functionality. These variables and the chosen method of measurement for each are discussed below.

The first variable in this category is the number of audit committee members ***(NmbACMem),*** which is calculated simply as the number of members reported by the company in their Form 10-K as forming the committee. The number and percentage of independent audit committee members variables are based on how many of these members are considered under SEC regulations to be independent. Section 301 of the SOA stipulates that an audit committee member is deemed to be independent if that person is not affiliated with the company in any way, and does not accept compensation (including consulting, advisory, or other compensatory fee) from the company, other than in the member's capacity as a member of the board of directors and any board committee.

As the above requirements indicate, the independence of members appointed to the audit committee, is of quite substantial consequence. The personal details provided in the Form 10-K of each committee member was scrutinised to establish whether they conformed to the requirements stipulated in Section 301. The number of audit committee members considered to be independent was recorded ***(NmbIndAC)***, along with the percentage of independent members

(%IndAC). This latter variable, which was calculated as the proportion of independent members to total committee members, was included for the additional precision the ratio method of measurement would bring to the test. In this regard, it was determined that due to the varying number of members on audit committees a percentage variable would provide a more comparable proportionate method of measurement. Additionally, while this variable could have been measured in a dichotomous manner, for example, depicting whether at least the majority of the committee were considered independent or not (which has been used in prior studies), it was believed that the scale type variable included in this study gave greater precision in tests.

As discussed in Chapter 3 the competence of the audit committee members has had a positive effect on the quality of this committee's governance oversight capabilities. In reflection of this concern regulation in the form of listing rules were implemented to ensure that all members of the audit committee are financially literate[11] and that at least one member has financial or accounting expertise. The competence of the audit committee was therefore measured in this study by the number and percentage of members considered to be 'Audit Committee Financial Experts' (ACFE). The term 'Audit Committee Financial Expert' is defined by the SEC in Item 401(h) of Regulation S-K as a person who has the following attributes:

- An understanding of generally accepted accounting principles and financial statements
- Experience preparing, auditing, analysing or evaluating financial statements that present a breadth and level of complexity of accounting issues that are generally comparable to the breadth and complexity of issues that can reasonably be expected to be raised by the registrant's financial statements, or experience actively supervising one or more persons engaged in such activities
- An understanding of internal controls and procedures for financial reporting
- An understanding of audit committee functions

[11] The NASDAQ and ASE rules define financial literacy as the ability to read and understand fundamental financial statements, including a company's balance sheet, income statement, and cash flow statement.

The requirement to disclose whether a company has at least one ACFE serving on its audit committee, as specified under section 407 of the SOA, only became effective for fiscal years ending on or after 15 July 2003. The above four specifications were therefore used as a guideline when determining the presence of an ACFE prior to that period. Specifically, it was determined that for the purposes of this study, and where no disclosure was available, members would qualify as a ACFE based on whether or not they had an education and/or experience as a principal financial officer, principal accounting officer, controller, public accountant or auditor. Consideration was also given to those persons that had experience in one or more positions that involve the performance of similar accounting or finance functions.

The personal details described in the Form 10-K for each committee member was scrutinised to establish which, if any, of the members qualified as an ACFE. The number of audit committee members considered to be ACFE's ***(NmbACFE)*** was recorded along with the percentage of ACFE's ***(%ACFE)***. As alluded to earlier, the inclusion of this latter variable, which was calculated as the proportion of members qualifying as an ACFE to total committee members, was deemed relevant due to the additional precision able to be gained from this method of measurement.

As with earlier studies the number of meetings is used to indicate the level of diligence exercised by a board or committee. Form 10-K filings note the number of meetings held each year by the audit committee. These filings additionally record where, for whatever reason, no meetings of the committee were held during the year. This information was used to populate the ***NmbACMeet*** variable. In the rare occasion when no reference was made to the number of meetings held in the Form 10-K, the Proxy Statement or audit committee charter for the company was reviewed to gauge the number of meetings that the committee would typically engage in.

The tenure of the audit committee members is also considered an important aspect of the committee's overall functionality. The ***AvgACTen*** variable, which represented the tenure of the audit committee members was measured by

calculating the number of years each member had retained a position on the company's board of directors. Again, this information was able to be sourced from the Form 10-K, which specified the year the member was first elected to the board. The number of years, including the current year of the filing, was calculated for each audit committee member and the sum of years for all members on the committee was totalled. This figure was then averaged to find the mean tenure of the committee members, and the result used to populate the ***AvgACTen*** variable.

In attempting to capture the 'busyness' of the directors appointed to the audit committee and hence the relative amount of time able to be dedicated to preparing, attending and participating in committee meetings, the average number of directorships committee members held in other public companies was used. The information necessary to populate this variable was again provided in the Form 10-K, where the personal details of each director was specified in a list of additional companies the member also held directorships in. The variable, ***AvgACDtrships***, was calculated by totalling all other public company directorships held by members of the committee and dividing it by the number of members to provide an average of directorships for the audit committee as a whole. The average was used as the measure for this variable rather than the sum total as it was considered more appropriate due to the wide ranging size of audit committees – generally the more members on the committee the larger total number of directorships. Thus using total numbers would have introduced unnecessary bias.

4.5.2 Board of Director Composition

The composition of a board of directors is particularly important to ensuring effective governance of a company is achieved. In this respect the independence and manner in which new members of the board are nominated, along with the relative impartiality of the board chairperson, is of specific import. The variables selected to depict these aspects together with their chosen method of measurement are discussed below.

The size of the board of directors has been shown to be a factor in the ability of the board to effectively monitor management and efficiently work together to oversee the running of the business (Persons, 2006; Chiang, 2005; McColgan, 2001). To assess this capability the number of positions available for election to the board of directors of each company was examined. These details were gathered from the Form 10-K or Proxy Statement and the total number of members stated was used to populate the ***NmbDtrs*** variable.

Similar to the independence of audit committee members, it has been found that board members that are independent from management can have a positive effect on the governance of a company, particularly in relation to fraud (Beasley, 1996; Uzun et al., 2004; Persons, 2005; Archambeault, 2000). Therefore, consistent with both the NYSE and NASDAQ stock exchange listing rules this study determined an independent board member as a person who does not have a relationship with the company that may interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In particular the NASDAQ rules provide certain criteria that are considered to disqualify persons from the status of an independent director. These per se disqualifications include:

- a director who is, or at any time during the past three years was, employed by the company, its parent, or its subsidiary
- a director who accepted or who has a family member who accepted any payments from the company, its parent, or its subsidiary in excess of $60,000 during the current or any of the past three fiscal years, with certain exceptions
- a director whose family member is, or at any time during the past three years was, employed as an executive officer by the company, its parent, or its subsidiary
- a director who is, or has a family member who is, a partner, controlling shareholder, or executive officer of any organization to which the company made or received payments for property or services, with certain exceptions, in the current or any of the past three fiscal years that exceed the greater of 5% of the recipient's consolidated gross revenues for that year, or $200,000
- a director of the listed company who is, or has a family member who is, an executive officer of another entity where at any time during the past three years any of the listed company's executive officers served on that entity's compensation committee
- a director who is, or has a family member who is, a current partner of the company's outside auditor, or was a partner or

> employee of the company's outside auditor who worked on the company's audit at any time during any of the past three years (NASDAQ, 2003)

In addition, the NASDAQ rules define a family member as a person's spouse, parents, children or siblings, whether by blood, marriage or adoption, or anyone residing in such person's home. Using the above provisions as a guideline the personal details provided in the Form 10-K of each director of the board was scrutinised to establish whether they qualified as independent within the requirements stipulated above. The number of directors of the board considered to be independent was recorded ***(NmbIndDtrs)***, as well as the percentage of independent directors ***(%IndDtrs)***. This latter figure was calculated as the proportion of independent directors to the total number of positions available for election to the board, and was included for increased accuracy.

Duality occurs when the same person occupies both the CEO and chairman of the board positions. The ***CEO=Chair*** is a dummy/coding variable that has been specifically constructed to capture this practice. Where duality existed in a company (i.e. the CEO and chairman of the board were the same person) the variable was coded as 1. Conversely, where duality did not exist, the variable for the company was coded as 0. Form 10-K filings for each company provided the necessary information to populate this variable.

Whilst a Board of Directors nominating committee does not have a direct monitoring function per se, it is thought that the committee is pivotal to the future effective performance and functioning of the board of directors. Two variables are used to represent the nominating committee, firstly to ascertain whether the committee exists or not, and secondly where a nominating committee does exist, to determine the number of members appointed. Because all the committees established by a company are described in the Form 10-K this document was again used to source the required data. ***NomExist*** was coded 1 if a nominating committee existed and 0 otherwise, whereas the ***NmbNomMem*** variable simply recorded the number of members appointed to the committee.

4.5.3 Ownership Structure

As described in Chapter 3 the ownership structure of a company has been deemed to be of critical, if contradictory, importance to the quality and comprehensiveness of the oversight administered in that company (Klein, 2006; Pergola, 2005; Dunn, 2004; Song & Windram, 2004). Two variables were used to represent the ownership structure of directors on the board of both fraud and non-fraud companies. ***%InsDtrOwn*** was calculated as the percentage of stockholdings held by all inside directors appointed to the board. While ***%OutDtrOwn*** was calculated as the percentage of stockholdings held by all outside directors appointed to the board. For the purposes of this study inside directors were deemed to include officers or employees of the company or any subsidiary, officers of an affiliated company, former officers or employees of the company within the last 3 years, family members of management, or professional advisors to the company. Conversely, outside directors were considered to be all other directors that were not categorised as inside directors.

The information used to categorise the directors as either insiders or outsiders was sourced from the Form 10-K, along with data regarding each board members stockholding. Whilst it could be judged that the two variables depicting ***%InsDtrOwn*** and ***%OutDtrOwn*** simply measure the reciprocal of each other, it was determined that the differing concepts held to explain the positive/negative effects of each type of ownership structure was worthy of individual consideration. Thus, both variables were used in tests of opposing hypotheses to establish which, if either, concept held true.

Similar to outside director ownership, it was thought that blockholder ownership would have a positive bearing on governance oversight. This notion was based on the general consensus of prior studies that outside blockholders have a greater ability to monitor than the average shareholder because of the ‘strength’ of their voting power (Persons, 2006). Furthermore, findings propose that large outside blockholders have increased incentive to monitor the actions of the companies they invest in due to their larger proportional stake in the entity (Cronqvist et al., 2006).

Entities with shareholdings of 5% or more of a company's outstanding common stock were deemed blockholders, with the exception that shareholdings of this amount held by either inside or outside directors or management were excluded from this category. Blockholders are generally not affiliated with the company in any way other than through their ownership interests. The Form 10-K provided the necessary data to populate the variables, which were calculated as the number of entities determined to be outside blockholders ***(NmbOutBlock)*** and the total percentage of ownership held by all blockholders of the company ***(%OutBlockOwn)***.

4.5.4 External Auditor Factors

External auditors are considered of importance to the governance of a company in that the public relies upon them to provide some assurance as to the appropriateness of the assertions included in the financial report of the company. The monitoring functions performed by the external auditor can be influenced by a number of aspects. It has been suggested that an external auditor's length of tenure with the client firm can substantially affect their ability to monitor (Carcello & Nagy, 2004a), and/or their susceptibility to management influence (Lin et al., 2006).

The length of tenure of the external auditor is measured by the number of years the auditing firm has been retained by the client. Where no specific mention is made in the Form 10-K as to the period of auditor retention, a search of the Proxy Statement was undertaken. If neither filing disclosed the length of tenure, a proxy of 1 year, being the current period for which the auditor is engaged to audit, was used to populate the variable ***AudTen***.

Another issue thought to be of consequence to the effectiveness/quality of the monitoring performed by external auditors is the size of the firm providing the auditing services. As referred to in Chapter 3, it has been suggested that Big 6 auditing firms are more likely to be associated with non-fraudulent companies. Although the so-called Big 6 auditing firms have now been reduced to the 'Big 4' this study retained the earlier designation. This was due to the fact that during much of the research period the 'Big 6' were still in existence. In addition, a good

portion of the literature reviewed and upon which this study based it hypotheses, referred to the Big 6 auditing firms. Therefore, Arthur Andersen, Coopers & Lybrand, Deloitte & Touche, Ernst & Young, KPMG, and Price Waterhouse (or there subsequent merged name, i.e. PricewaterhouseCoopers) were the auditing firms categorised as representing the 'Big 6'. A dummy variable is used to capture the results of the ***Big6Aud*** variable, whereby companies specifying in their Form 10-K that the firm engaged to conduct their annual audit was amongst the above listed names were coded as 1. Those companies listing other auditing firms were coded as 0.

4.6 Measurement of the Control Variables

In addition to the independent variables discussed above a number of control variables were included in the study. The inclusion of non-corporate governance variables to control for additional company characteristics that may influence the presence of fraud was considered fundamental to ensuring the tests focused more precisely on differences created by variations in corporate governance. As this study is aimed at determining whether a relation between corporate governance attributes and the incidence of fraudulent financial reporting exists, it was essential that other influencing aspects of fraud were controlled.

Whilst every effort was made to control for normal variations in company characteristics through the matching process, this process was unable to fully control for non-corporate governance incentives that may influence fraudulent behaviour. Inasmuch as numerous incentives could exist to motivate an entity to engage in fraudulent financial reporting, a great number, such as management style, integrity, and corporate culture are problematic to measure, and consequently are unable to be controlled (Archambeault, 2002). A review of prior research determined that of the *measurable* incentives that exist, four were deemed of particular relevance to this study. The four control variables, Total Assets, Leverage, Age, and Growth are considered individually below, along with the method of measurement for each variable.

4.6.1 Total Assets

Although total assets was included as a criterion in the matching process it was not always possible to precisely match on all four criteria proposed in the research design, being time, industry, exchange and size. In these instances the size criterion, which was measured by total assets, was the one sacrificed so as to maintain the integrity of the other three. Taking into consideration the importance placed upon ensuring an adequate match in size between the pairs of fraud and non-fraud companies, it was deemed a control variable measuring total assets would overcome this limitation of the matching process.

The ***Total Assets*** variable was recorded based upon the information reported in the Thomson ONE Banker database for each company. This piece of financial information was able to be retrieved from a specific field in the database without the need for any manual calculations to be performed. The financial period from which the data was obtained was that of the year ended prior to the identified initial fraud period.

4.6.2 Leverage

Leverage represents the debt structure of a company and has been used in numerous studies to proxy for closeness to a debt covenant violation (Efendi et al., 2004; Erickson et al., 2004; Elayan, Li & Meyer, 2003). In this regard Persons (1995) claimed that, "Higher leverage is typically associated with higher potential for violations of loan agreements and less ability to obtain additional capital through borrowing" (pg.40). Consequently leverage has been found to be positively correlated with income-enhancing accounting policies, such that understating liabilities or overstating assets might be used to avoid debt covenant violations. Efendi et al. suggested that, "If a firm is close to default on accounting-based debt covenants, the CEO may misstate the accounting numbers to avoid the resultant consequences" (2004, pg.12).

Using a parsimonious stepwise-logistic regression model Person (2005) found that fraud firms have higher financial leverage than non-fraud firms, and that financial leverage is a significant factor influencing the likelihood of financial statement fraud. Other studies such as Dechow et al. (1996) and Richardson, Tuna, & Wu

(2002), have linked leverage with earnings management and financial restatements. Consistent with Persons (2005) study of fraud firms, companies implementing fraudulent practices, such as earnings management, were also found to have significantly greater levels of leverage than that of their matched control companies. Dechow et al. surmised that even though the AAER's included in their study did not mention avoidance of debt covenant violations as a motivation for earnings management, the authors opined that the evidence was "…consistent with the existence of such a motivation" (1996, pg.21). These examples indicate that increased leverage may provide an incentive that fosters the fraudulent manipulation of the financial results of a company.

Taking the above into account, it was considered that the incentive to manipulate financial results in the hope of avoiding a debt covenant violation (and the resulting consequences that such violations could bring), needed to be controlled against by the inclusion of a variable measuring leverage. Thus the ***Leverage*** variable was calculated as the percentage of total debt to total assets. The information required to populate the variable was sourced from the Thomson ONE Banker database, which enabled a data field depicting this value to be selected as the search criteria.

4.6.3 Age

The age of a company has been found to be significantly related to fraud occurrence. Beneish (1999) identified that companies more recently listed on a national stock exchange were more likely to be found committing fraudulent financial reporting. The cause of this phenomenon was suggested to be due to the greater pressure faced by these companies to meet earnings targets (Carcello & Nagy, 2004b). Likewise, it was also proposed by Archambeault (2000) that the newer a company is the more incentive it has to distort financial results for the purposes of securing initial investment capital.

Taking this into account it would appear that the age of a company might present an incentive to fraudulently report financial condition. Thus the ***Age*** variable was based on the number of years a company had been listed on one of the US national stock exchanges. A benchmark of 5 years was used as a proxy for age, in

this way distinguishing ‘newer’ companies (those listed less than 5 years) from ‘older’ companies (those listed 5 or more years). The information necessary to populate this variable was gathered from the Thomson ONE Banker database and was contingent on whether the company was recorded as being publicly listed and whether at least 5 years worth of the financial data preceding the fraud period was available on the database. The Age variable is a dummy variable, which was coded 1 for companies that had been listed less than 5 years, and coded 0 for all other companies.

4.6.4 Growth

Consistent with a number of earlier studies (Carcello et al., 2004; Abbott, Parker & Peters, 2004; Abbott et al., 2000; Beasley, 1996), the growth of a company is represented by a control variable. It is deemed important to control for an entity’s pace of development in this way because in times of rapid growth a company may encounter pressure to maintain or exceed anticipated growth rates. The pressure to achieve a targeted rate of growth, or alternatively mask downturns, may create the incentive for management to engage in fraudulent financial reporting (Carcello et al., 2004).

A company’s rate of growth has also been linked to a weakening of the entity’s internal control system, whereby the financial controls may become inadequate to support the company’s increased size (Abbott et al., 2000). This type of decline in the functioning of a company’s internal controls could ultimately have a negative impact on the accounting system and its ability to accurately record the firm’s accounting transactions (Abbott et al., 2004). In an attempt to account for the incentive a company’s rate of growth may have on the risk of financial statement fraud, Growth has been included as a control variable.

The ***Growth*** variable was measured as the average growth rate of total assets in the two years preceding the identified initial fraud period. Where insufficient data was available to calculate the two-year average, the growth rate for the year preceding the fraud was used. The information to populate the variable was sourced from the Thomson ONE Banker database, which enabled a data field depicting the total assets 1-year growth rate to be selected as a search criterion.

When two years worth of data was available these figures were averaged to obtain the growth rate.

4.7 Research Design and Selection of Analysis Methods

A quantitative research approach has been employed in which an inferential statistics methodology was applied to provide empirical evidence of the hypothesised relationships between selected corporate governance attributes and the existence of fraudulent financial reporting. Firstly, t-tests were used to evaluate the differences in means of all non-control variables between identified fraud firms and their matched non-fraud firms. Due to the matched case-control design of this research it was essential to perform the t-tests in a paired format. This format gives some assurance that the observed differences between the samples of fraud and non-fraud pairs is due to test manipulation and not a chance result (Field, 2005). It was deemed important to conduct t-tests to determine whether significant differences existed between the corporate governance attributes employed by each matched pair because if differences did not exist it would have been irrelevant to continue testing the hypotheses posed.

The univariate t-tests were then followed by tests of correlation, which were used to test whether linear relationships existed between the explanatory variables. The performance of correlation tests were important to ascertain if multicollinearity was liable to be a matter for concern, and if so, to determine what steps needed to be taken to rectify the problem prior to moving onto the regression analysis stage of testing. "Multicollinearity exists when there is a strong correlation between two or more predictors in a regression model" (Field, 2005, pg.174). As a number of predictor/explanatory variables were to be used in the regression equation it was pertinent to ensure unique coefficients could be obtained for each independent variable without a relationship (correlation) between them affecting the results.

A regression equation, which included all of the independent corporate governance variables found to be of significance during the earlier testing stages, was used to determine if a statistically significant relationship existed between them and the dependent variable, fraudulent financial reporting. The Chi-square

statistic to measure the 'goodness of fit' or significance of the model, and the Pseudo R-squared statistic to determine the amount of variance in the dependent variable explained by the independent variables (Sekaran, 2003), were utilised to analyse the regression results. Furthermore, the equation was used to assess any interaction effects and offer statistical explanation to the hypotheses posed by this investigation.

As the variables in this study consisted of both nominal and ratio scale data, Logit regression was applied. Logit allows "…a mixture of categorical and continuous independent variables to predict one or more categorical dependent variables" (Garson, 1998, pg.1). As the dependent variable, fraudulent financial reporting, is dichotomous (either 'yes' or 'no', depending upon the presence of fraud or not) and the independent variables are either dichotomous (categorical) or ratio (continuous), this type of regression model was considered the most appropriate for the data being tested.

Also taken into consideration when choosing this method of analysis was Logit's capability to understand the relative importance of the different independent variables in predicting the dependent variable. The appropriateness of using Logit was further supported by the fact that testing is conducted on a choice-based sample of industry-size matched pairs, which Beasley (1996) explained in the case of fraud/non-fraud companies equates to disproportionate sampling from two populations. In other words, "…it is very likely that the true rate of firms experiencing financial statement fraud within the total population of publicly traded firms is less than 50%" (Beasley, 1996, pg.452). Therefore, as the sample for this study is based on a one-to-one matching process (ie. 50% fraud and 50% non-fraud companies) there lies a difference between this sampling approach and a purely random sample selection.

In addition to Beasley (1996), Logit regression has frequently been used in many of the prior studies undertaken into this field of research (Persons, 2005; Bedard et al., 2004; Dunn, 2004; Erickson et al., 2004; Song & Windram, 2004; Uzun et al., 2004; Archambeault, 2002; Saksena, 2001; McMullen, 1996). Dunn found that Logit regression was particularly relevant to his research due to the fact that his

intention was not to "…present a model that will predict when fraudulent reporting will occur, nor to classify fraud and no-fraud firms. Instead, the model tests for whether structural power and ownership power are significant factors that contribute to fraudulent financial reporting" (2004, pg.404). In a similar manner this study seeks to test whether corporate governance attributes are significantly associated with this type of fraud and thereby examines the relationship between a company's governance structure and the likelihood of fraudulent financial reporting. Based on the foregoing findings, it was thus determined that Logit regression, along with the use of paired t-tests and tests of correlation, duly suited the specifications of this study's research design.

Finally, validation tests were performed to confirm the robustness of the regression model. These tests were accomplished through the application of the regression model to a number of random samples selected from the existing database each incorporating 80% to 85% of the full sample. Tests of this nature were considered necessary to provide evidence as to the stability, reliability and robustness of the regression model to variations in data sets.

4.8 Summary

This chapter has served to provide a detailed description of what steps were taken in preparation of the testing phase of this study. These steps included the identification of the fraud sample (case group), the matching process to identify the non-fraud sample (control group), the measurement of the independent and control variables, and the research design and selection of analysis methods. The chapter also provides information about what issues were considered when making the decision to implement each step. The following chapter, Chapter 5, presents the results of the tests selected to analyse the data gathered during the performance of the steps aforementioned in this methods chapter.

Chapter Five

DATA ANALYSIS AND RESEARCH FINDINGS

5.1 Introduction

The analysis of data provided in this chapter pertains to research conducted into the relationship observed between selected corporate governance attributes and the incidence of fraudulent financial reporting. Tests were performed with the objective of providing empirical evidence to answer the primary research question:

> Is there a relationship between corporate governance attributes and the incidence of fraudulent financial reporting?

Firstly this chapter will present an analysis of the matching process and how effectively the fraud and non-fraud companies were matched. The results of statistical analysis, including univariate tests to determine whether significant differences existed fraud and non-fraud companies, and correlation tests to evaluate if multicollinearity is present among the independent variables, will then be furnished. This will be followed by the findings of a conditional logistic regression model containing the most parsimonious variables in each of the corporate governance categories. Validation tests based on the regression of random sample sub-sets of matched pairs are presented lastly. These test results are based on a sample of 76 fraud companies and a 1-1 matched sample of non-fraud companies.

5.2 Matching Analysis

Consistent with prior research into fraudulent financial reporting that used a case-control design, this study also matched by industry and time (Sharma, 2004; Uzun, Szewczyk, & Varma, 2004; Carcello & Nagy, 2004a, and Beasley, 1996). However, a study conducted by Persons (2005) outlined the significance of also matching by stock exchange when considering corporate governance attributes. Persons (2005) maintained that the differences in corporate governance

requirements placed upon listed companies from one exchange to another made it important to consider the stock exchange a company was listed on when employing a matched pair design. Therefore, the matching process was undertaken with reference to the year the fraud was first reported as occurring, the primary Standard Industry Code (SIC) and stock exchange of the entity, and lastly the total assets of the company, as a proxy for size.

As a consequence of matching on the first three criteria, the size criterion sometimes suffered, which resulted in the acceptable margins of difference (as determined by reference to earlier studies) being exceeded on occasion. After matching for time, industry, and exchange it was not always possible to identify a non-fraud company within 30% in the dollar value of Total Assets of each fraud company. In these cases the closest available match was utilised to a maximum limit of 55%. Matches exceeding 55% difference in the dollar value of total assets between fraud and non-fraud companies were excluded from this study.

The 113 pairs initially matched by using the SIC codes recorded on the SEC database was reduced to 76 pairs when it was found that the SIC coding system used by the SEC and Thompson ONE Financial databases occasionally differed. Originally SIC codes were gathered from the SEC database at the time the fraud company was identified. These codes were then used in the Thompson Financial database as a search criterion to identify possible non-fraud matches. Upon finding the inconsistency a number of the original pairs had to be eliminated and as a result only the 76 pairs that ended up being correctly matched by SIC code at the 2-digit level or higher were ultimately subject to analysis.

Matching Criteria

PANEL A

First Year of Fraud

1996	1997	1998	1999	2000	2001	2002	2003	Total Pairs
2	8	10	17	23	12	2	2	76

PANEL B

Stock Exchange

NASDAQ	NYSE	ASE	Total Pairs
53	21	2	76

PANEL C

Standard Industry Code (SIC)

Matched Pairs and 2 digit level	27
Matched Pairs and 3 digit level	17
Matched Pairs and 4 digit level	32
TOTAL PAIRS	**76**

Distribution of Fraud Amongst Industry Sectors

13	1	1.3%	Oil and Gas Extraction
20	1	1.3%	Food and Kindred Products
23	3	3.9%	Apparel and Other Textile Articles
26	1	1.3%	Paper and Allied Products
27	2	2.6%	Printing and Publishing
28	3	3.9%	Chemicals and Allied Products
35	3	3.9%	Industrial Machinery and Equipment
36	8	10.5%	Electronics and Electrical Equipment
37	1	1.3%	Transportation Equipment
38	5	6.6%	Measuring Instruments and Related Products
48	5	6.6%	Communications
49	1	1.3%	Electric, Gas and Sanitary Services
50	4	5.3%	Durable Goods - Wholesale
51	4	5.3%	Non-Durable Goods - Wholesale
53	1	1.3%	General Merchant Stores
56	2	2.6%	Apparel and Accessory Stores
58	2	2.6%	Eating and Drinking Establishments
59	2	2.6%	Miscellaneous Retail
63	2	2.6%	Insurance Carriers
67	1	1.3%	Holding Companies and Other Investment Offices
73	19	25.0%	Business Services
78	1	1.3%	Motion Pictures
80	2	2.6%	Health Services
87	2	2.6%	Engineering and Management Services
TOTAL	**76**	**100%**	

PANEL D

Size - Total Assets (millions of dollars)

						Paired t-test	
Sample Type	**n**	**Min**	**Mean**	**Median**	**Max**	**t statistic**	**p-value**
All Companies	152	6.287	6543.228	249.579	306577.000		
Fraud Companies	76	6.458	7033.674	249.579	306577.000		
Non Fraud Companies	76	6.287	6052.782	243.980	255018.000		
Paired Differences	76	0.171	984.139	5.556	51559.000	1.385	0.170

TABLE 3 - Matching Criteria Frequency Table

The results of the matching process are presented in Table 3 above. The table provides frequency details of the spread of fraud occurrences over time, composition of stock exchanges, SIC code matching accuracy, fraud distribution by sector and characteristics of company size. All pairs were matched on the time criteria, which required the information used in the matching process to be based on the financial data recorded for each company in the year prior to the incidence of fraudulent financial reporting. Panel A of the table shows the year on year distribution of the seventy-six fraud occurrences and reveals that just over 80% occurred in the four-year period between 1998 and 2001. Panel B shows that nearly 70% (53) of all fraud companies included in the study were listed on the NASDAQ stock exchange, compared with only 28% (21) and 2% (2) listed on the NYSE and ASE respectively.

The accuracy of matching fraud and non-fraud companies by SIC codes is presented in Panel C, along with a frequency table of fraud occurrences by industry sector. Just under 50% of all pairs were matched at the 4-digit SIC level, giving an exact industry match for 32 pairs. The remaining pairs were matched at the 3 and 2 digit SIC levels as illustrated in the Table 3.

According to SIC codes, one industry sector was by far the most susceptible to fraud. Of the 76 fraud cases identified in this study, a quarter of them (19) were from the Business Services sector. This sector, which incorporates computer programming services and pre-packaged software, has also found prominence for fraudulent activities in prior research of a similar nature (Persons, 2005; Beneish, 1999; Bonner, Palmrose, & Young, 1998; Dechow, Sloan, & Sweeney, 1996). Other than the next highest-ranking sector, Electronics and Electrical Equipment, which accounted for 10.5% (8) of the cases, fraud was fairly evenly spread amongst the remaining industry sectors.

Panel D of Table 3 shows the spread of Total Assets for all companies included in the study. The range for the paired differences in Total Assets (being fraud minus non-fraud) was calculated at $0.171 million to $51,559 million, with a mean of $984.139 million. Although not significant when testing the mean paired difference of Total Assets with a paired t-test (p=0.170), the Wilcoxon signed-

rank test for medians determined significance at the p=0.1 (90%) level. This has been taken into account by including Total Assets as a control variable in further tests.

5.3 Statistical Analysis

Each stage of the statistical analysis, being univariate, correlation, logit regression, and validation tests, along with the results from performing these tests, is discussed in further depth below.

5.3.1 Univariate Tests

Due to the matched case-control design of this research, performing univariate tests in a paired format was essential. In addition, as many of the variables of interest were not normally distributed it was appropriate to perform non-parametric tests of comparison. However, since some variables did conform to parametric conditions, and to aid in facilitating comparison with past and further studies, it was deemed appropriate to perform both parametric and non-parametric tests. The results of parametric paired t-tests and non-parametric paired Wilcoxon signed-rank tests are presented in Table 4.

As a consequence of earlier research testing variables of a similar nature, this study was able to propose directional hypotheses (see Table 1). Therefore, all univariate test results are reported as one-tailed other than those yielded by control variables, which are reported as two-tailed, due to the inability to predict the direction of the relation between these variables and the dependent variable. The results presented in Table 4 below are ordered by the four categories of corporate governance used in this study and reported as significant at the 1%, 5% or 10% p-levels (denoted as ***, **, and * respectively).

Matched Pairs Comparison Tests

FULL SAMPLE (n = 76 pairs)										
Deferenced Variable	**Differenced Mean**	**Differenced Median**	**Paired t-tests**		**Paired Wilcoxon Signed Ranks Test**		**One-Tailed Significance**		**Two-Tailed Results**	
			t statistic	**p-value**	**z statistic**	**p-value**	**t-test**	**Wilcoxon**	**t-test**	**Wilcoxon**
Audit Committee Variables:										
NmbACMem	0.000	0.000	0.000	0.500	-0.258	0.398				
NmbIndAC	-0.026	0.000	-0.197	0.422	-0.052	0.479				
%IndAC	-1.469	0.000	-0.579	0.282	-0.736	0.231				
NmbACFE	-0.053	0.000	-0.532	0.298	-0.439	0.330				
%ACFE	-1.294	0.000	-0.444	0.329	-0.082	0.467				
NmbACMeet	-0.224	0.000	-0.829	0.205	-0.822	0.206				
AvgACTen	-0.193	0.000	-0.324	0.373	-0.085	0.466				
AvgACDtrships	0.260	0.000	1.169	0.123	-1.120	0.131				
Board of Director Variables:										
NmbDtrs	-0.750	-1.000	-2.084	0.020	-1.988	0.023	**	**		
NmbIndDtrs	-0.855	-1.000	-2.785	0.003	-2.759	0.003	***	***		
%IndDrts	-4.618	-2.446	-2.031	0.023	-1.762	0.039	**	**		
CEO=Chair	0.197	0.000	2.633	0.005	-2.535	0.006	***	***		
NomExist	-0.132	0.000	-1.923	0.029	-1.890	0.029	**	**		
NmbNomMem	-0.500	0.000	-1.608	0.056	-1.559	0.060	*	*		
Ownership Variables:										
%InsDtrOwn	0.956	0.260	0.280	0.390	-0.062	0.475				
%OutDtrOwn	-1.002	-0.020	-1.906	0.030	-1.347	0.089	**	*		
NmbOutBlock	0.276	0.000	1.210	0.115	-1.292	0.098		*		
%OutBlockOwn	3.949	5.345	1.601	0.057	-2.114	0.017	*	**		
External Auditor Variables:										
AudTen	-1.750	0.000	-0.991	0.162	-0.814	0.208				
Big6Aud	-0.053	0.000	-1.424	0.079	-1.414	0.079	*	*		
Control Variables:										
Total Assets	984.139	5.556	1.385		-1.734		*	**	0.170	0.083
Leverage	-0.456	0.000	-0.130		-0.138				0.897	0.891
Age	0.079	0.000	1.180		-1.177				0.242	0.239
Growth	-938.026	14.155	-0.713		-3.148			***	0.478	0.002

TABLE 4 - Matched Pairs Comparison Tests

Audit Committee Functionality

Table 4 presents the results of univariate paired t-tests and paired Wilcoxon signed-rank tests for the eight (8) variables included in the Audit Committee Functionality category. This study found no significance at the 10% level in any of the Audit Committee variables tested. The paired comparison tests for the Audit Functionality variables did however collaborate the hypothesised relation these variables were expected to have on fraudulent financial reporting.

The most significant result recorded in Table 4 by any of the Audit Committee variables was achieved by the variable representing the average number of outside directorships held by Audit Committee members (AvgACDtrships). A one-tailed t-test produced a result of 1.169 (p=0.123), which indicates that as the number of directorships Audit Committee members hold in unaffiliated public companies rises, so does the likelihood of fraud. Overall, the results of the paired comparison tests for Audit Committee variables did not however provide statistical support for hypotheses 1 through to 8 (see Table 1 for a complete list of hypotheses posed).

Board of Director Composition

As can been seen in Table 4, all variables depicting the second corporate governance category, Board of Director Composition, yielded significant results. These results were achieved, at identical levels of significance, for both the paired t-tests and the Wilcoxon signed-rank tests. The difference between fraud and non fraud companies was most pronounced in the number of independent directors (NmbIndDtrs) that sat on the company's board, and whether duality existed between the position of CEO and Chairperson (CEO=Chair). These two variables exhibited significance at p=0.003 and p=0.006 respectively, and confirm both hypotheses 10 and 12.

The number of directors on a company's board (NmbDtrs) and the percentage of those directors who are deemed to be independent (%IndDtrs) are significance at the 5% p-level. Furthermore, the existence of a nominating committee (NomExist) tested positive for significance at the 5% level, while a difference,

significant at 6% (p=0.056), was also found to exist between the number of members on nominating committees (NmbNomMem) in fraud companies as opposed to those of non-fraud companies. Collectively, these results support hypotheses 9, 11, 12 and 13 respectively.

Ownership Structure Variables

Whereas stock ownership by inside directors (%InsDtrOwn) does not significantly differ between fraud and non-fraud companies, the percentage of stock holdings owned by outside directors does (%OutDtrOwn). The paired t-tests presented in Table 4 confirmed that stock ownership by outside directors in fraud companies was significantly lower than in non-fraud companies, giving support to hypothesis 16 (see Table 1). Furthermore, when considering outside blockholders of stock in fraud and non-fraud companies, the percentage of ownership (%OutBlockOwn) shows a significant difference between the two. Although this difference was hypothesised to have a negative relation on the presence of fraud, the results of the comparison test show a significant positive relation. This result indicates that as the percentage of ownership by outside blockholders increases so to does the likelihood of fraud. Finally, no significant difference was detected between the number of outside blockholders of stock in fraud and non-fraud companies (NmbOutBlock), leaving hypothesis 17 unsubstantiated.

External Auditor Factors

The test results presented in Table 4 show that the length of tenure an external auditor is retained by a fraud or non-fraud company does not differ significantly, therefore finding no support for hypothesis 19 (see Table 1). On the other hand both the paired t-test and the Wilcoxon signed-rank test produced the same significant result (p=0.079) when testing for a difference in the retaining of a Big 6 accounting firm as the companies external auditor (Big6Aud). This result confirms the conjecture that non-fraud companies were more likely to engage the services of a Big 6 auditor than fraud companies, and provides support for hypothesis 20.

Control Variables

A number of control variables were subjected to univariate t-tests and Wilcoxon signed-rank tests to determine whether additional company characteristics, not related to variations in corporate governance attributes, were present between the sample of matched fraud and non-fraud companies. The two-tailed comparison tests for two of the control variables, Leverage and Age, did not identify any statistically significant difference between the matched pairs. Furthermore, neither the paired t-test nor the Wilcoxon found any significant differences at the 95% confidence level when testing the Total Assets variable. Test results did however indicate with 91.7% confidence ($p=0.083$) that the median difference in Total Assets was moderately higher for fraudulent companies than for their non-fraudulent counterparts.

The final control variable, Growth, produced inconclusive results, such that no significance at all was detected through the paired t-test and very high significance ($p<0.001$) was identified via the Wilcoxon signed-rank test. This variability could have been caused by the data for this variable being heavily skewed and therefore more inclined towards the Wilcoxon test. This biasing may have resulted as a consequence of the time period utilised by this study. In this regard certain industries and not others may have experienced a particularly strong period of growth during this time frame. As a consequence this may have served to skew the data and offer inconsistent results. However, due to the contradictory nature of the results it was deemed appropriate to remove this variable from further testing.

Summary

Those variables, both independent and control, that either were significance or were the most significant in each category were further investigated, firstly for correlation between the predictor variables in tests for multicollinearity (see Tables 4 and 5), and then as covariants in logistic regression (see Tables 6 and 7). Variables that lacked significance at the 90% level were omitted from further testing. However, on the basis that this study is focused on detecting associations between the four proffered categories of corporate governance and fraudulent

financial reporting it was considered appropriate that at least one variable from each category was represented in further testing. Therefore, the AvgACDtrships variable, being the most significant variable in the Audit Committee Functionality category, was included in subsequent multivariate tests.

5.3.2 Correlation Analysis

Tests of correlation amongst the independent variables were undertaken to rule out the possibility of multicollinearity causing problems during the regression analysis stage. As the data set used by this study did not conform to parametric assumptions, in that it was not normally distributed, it was applicable to use Spearman's Rank-Order Correlation to determine if multicollinearity existed amongst the variables. Tables 4 and 5 below present the results of two Spearman's correlation coefficient matrixes.

Table 5 provides the correlation results when all variables determined to be significant in the univariate tests are included. Several variables in this matrix show signs of quite substantial multicollinearity. The most severe cases of correlation (> 0.8) arose between the number of independent directors (NmbIndDtrs) and the total number of directors on the board (NmbDtrs), with a correlation coefficient of 0.805. Likewise, the existence of a nominating committee (NomExist) and the number of members on that committee (NmbNomMem) were highly correlated (cc=0.897). A reasonably strong indication that the percentage of independent directors (%IndDtrs) and the number of independent directors on the board (NmbIndDtrs) may be correlated (cc=0.604) was also ascertained.

It was determined that coefficients of 60% or below were insignificant and thus were not cause for concern with regard to multcollinearity. Conversely, variables with coefficients exceeding 60% were considered to exhibit collinearity characteristics that could potentially corrupt the results if both affected variables were included together in a regression equation. Therefore, the latter variable in each of the above-mentioned correlates, being NmbDtrs, NmbNomMem and NmbIndDtrs, were removed from further analysis. Table 6 presents the results of

the Spearman's Rank-Order Correlation matrix following the removal of these highly correlated variables. Results show that no correlation coefficients are above 0.50 and nearly all (91%) are below 0.25, indicating that multicollinearity was no longer an issue with the remaining variables.

Spearman's Rank Order Correlation Matrix

(n = 76 pairs)		AvgAC Dtrships	NmbDtrs	NmbInd Dtrs	%IndDtrs	CEO= Chair	NmbNom Mem	NomExist	%OutDtr Own	%OutBlock Own	Big6Aud
NmbDtrs	Correlation Coefficient	0.140									
	Sig. (2-tailed)	0.229									
NmbIndDtrs	Correlation Coefficient	0.201	0.805***								
	Sig. (2-tailed)	0.082	0.000								
%IndDtrs	Correlation Coefficient	0.145	0.078	0.604***							
	Sig. (2-tailed)	0.211	0.500	0.000							
CEO=Chair	Correlation Coefficient	-0.186	-0.046	-0.057	-0.030						
	Sig. (2-tailed)	0.107	0.693	0.625	0.799						
NmbNomMem	Correlation Coefficient	0.089	0.065	0.046	0.027	0.015					
	Sig. (2-tailed)	0.447	0.574	0.693	0.816	0.895					
NomExist	Correlation Coefficient	0.040	0.005	0.001	0.023	0.039	0.897***				
	Sig. (2-tailed)	0.733	0.966	0.995	0.843	0.739	0.000				
%OutDtrOwn	Correlation Coefficient	-0.032	0.162	0.313***	0.348***	0.171	0.063	0.107			
	Sig. (2-tailed)	0.781	0.161	0.006	0.002	0.140	0.592	0.357			
%OutBlockOwn	Correlation Coefficient	-0.140	-0.194	-0.092	0.188	0.040	-0.007	0.015	0.096		
	Sig. (2-tailed)	0.228	0.093	0.428	0.104	0.732	0.950	0.897	0.410		
Big6Aud	Correlation Coefficient	0.272***	-0.077	0.022	0.044	-0.008	-0.029	-0.046	-0.002	-0.049	
	Sig. (2-tailed)	0.017	0.507	0.848	0.707	0.942	0.801	0.695	0.988	0.674	
Total Assets	Correlation Coefficient	-0.064	0.080	0.105	0.022	-0.014	-0.081	-0.056	0.049	0.244	-0.018
	Sig. (2-tailed)	0.583	0.494	0.368	0.851	0.908	0.485	0.633	0.673	0.034	0.879

*** Correlation is higher than 0.25

TABLE 5 - All Significant Variables Identified in Univariate Tests

Spearman's Rank Order Correlation Matrix

(n = 76 pairs)		AvgAC Dtrships	%IndDtrs	CEO= Chair	Nom Exist	%OutDtr Own	%OutBlock Own	Big6Aud
%IndDtrs	Correlation Coefficient	0.145						
	Sig. (2-tailed)	0.211						
CEO=Chair	Correlation Coefficient	-0.186	-0.030					
	Sig. (2-tailed)	0.107	0.799					
NomExist	Correlation Coefficient	0.040	0.023	0.039				
	Sig. (2-tailed)	0.733	0.843	0.739				
%OutDtrOwn	Correlation Coefficient	-0.032	0.348***	0.171	0.107			
	Sig. (2-tailed)	0.781	0.002	0.140	0.357			
%OutBlock Own	Correlation Coefficient	-0.140	0.188	0.040	0.015	0.096		
	Sig. (2-tailed)	0.228	0.104	0.732	0.897	0.410		
Big6Aud	Correlation Coefficient	0.272***	0.044	-0.008	-0.046	-0.002	-0.049	
	Sig. (2-tailed)	0.017	0.707	0.942	0.695	0.988	0.674	
Total Assets	Correlation Coefficient	-0.064	0.022	-0.014	-0.056	0.049	0.244	-0.018
	Sig. (2-tailed)	0.583	0.851	0.908	0.633	0.673	0.034	0.879

*** Correlation is higher than 0.25

TABLE 6 - All Significant Variables Identified in Univariate Tests minus Correlates

5.3.3 Logit Regression Analysis

When taking into consideration the matched case-control design that was implemented in this study, it was found that more accuracy in interruption could be obtained by using a conditional logistic regression model. Hosmer & Lemeshow (1989) provide a detailed explanation of the reasons for applying this type of model, particularly when using a research design of a comparable nature to this study. Furthermore, Lipsitz, Patzen & Ewell (1998) proposed that using conditional logistic regression in a case-control design study could eliminate the nuisance matching effects. Tables 6 and 7 below present the results of two regression equations that are based on the application of such a model utilising the multinominal regression option in SPSS.

Firstly, the results of a regression equation incorporating the eight variables that remain after addressing collinearity issues will be analysed. This model is then refined and re-executed on the full sample of 76 matched pairs. Analysis of the

results of validation tests performed on the regression equation, and executed using six randomly selected subsets of the full sample, then conclude this section.

Initial Model

All remaining variables, after issues of mullicollinearity had been taken into account, were included in a conditional regression equation. As a rule of thumb, it is suggested that at least 10 to 15 cases are required in a data set for each independent variable included in the regression equation (Fields, 2005). Consequently, it was anticipated that due to the number of independent variables included in the initial model, some modification through elimination of potentially non-significant variables deemed surplus to the equation would be necessary to achieve an optimal model. This initial model did however provide evidence of the relationships existing between the dependent variable and the various independent/predictor variables in the equation.

Conditional Logistic Regression

Fraud = b_1 (AvgACDtrship) + b_2 (PerIndDtrs) + b_3 (CEOChair) + b_4 (NomExist) + b_5 (%OutDtrOwn) + b_6 (%OutBlockOwn) +b_7 (Big6Aud) + b_8 (Total Assets) + e

Differenced Independent Variable	Expected Sign	Est. Coeff.	Std. Error	Wald	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
AvgACDtrships	+	0.330	0.162	4.134	0.042	1.391	1.012	1.911
PerIndDtrs	-	-0.030	0.016	3.479	0.062	0.971	0.941	1.002
CEOChair	+	1.332	0.496	7.206	0.007	3.790	1.433	10.027
NomExist	-	-0.678	0.490	1.915	0.166	0.507	0.194	1.326
PerOutDtrOwn	-	-0.099	0.073	1.823	0.177	0.906	0.785	1.046
PerOutBlockOwn	-	0.030	0.015	4.169	0.041	1.031	1.001	1.061
Big6Aud	-	-1.404	1.014	1.918	0.166	0.246	0.034	1.791
Total Assets	"+ / -"	0.000	0.000	0.458	0.499	1.000	1.000	1.001
Paired Differences n =				76				
Chi-Square Test of Fit (8 degrees of freedom)				29.108	0.000			
Pseudo R-Square								
Nagelkerke				0.424				
Cox and Snell				0.318				

TABLE 7 – Initial Regression Model

Table 7 above presents the results of the initial regression model when executed on the full data set of 76 matched pairs. The outcome is also depicted in equation 1 below:

$$\text{Fraud} = 0.330(\text{AvgACDtrship}) - 0.030(\%\text{IndDrts}) + 1.332(\text{CEOChair}) - 0.678(\text{NomExist}) - 0.099(\%\text{OutDtrOwn}) + 0.030(\%\text{OutBlockOwn}) - 1.404(\text{Big6Aud}) + 0.000(\text{Total Assets}) + e$$

The results are based on a multinominal logistic model excluding an intercept and using a main effects design, which includes all independent variables into the model at the same time. The Chi-Square test of fit statistic indicates the model is significant ($p<0.001$), and the Nagelkerke (Cox & Snell) pseudo r-squared of 0.424 (0.318) shows that the proportion of variance in fraud/non-fraud companies explained by the predictor variables is relatively strong. However, two independent variables were considered worthy of further investigation because of their implied non-significance.

The Total Assets variable was not only insignificant ($p=0.499$), it also had an estimated coefficient of zero. This result would indicate that no variation in the dependent variable could be attributed to a change in Total Assets. As such it was decided that this variable should be removed from the equation. Furthermore, although the correlation that was observed between the %OutDtrOwn and %IndDtr variables in the Spearman's rank-order test was not excessive ($z=3.48$), it was considered that multicollinearity between these two variables could be biasing the regression results. This judgment was based on the performance of subsequent regression tests that included variations of the model incorporating, firstly, either the %OutDtrOwn or the %IndDtr variable and secondly, a model with neither variable included. These tests indicated that some interaction was present between the two variables. Taking these results into consideration, along with the fact that the %OutDtrOwn variable lacked significance ($p=0.177$), it was determined that the removal of this variable would further serve to increase the quality of the regression equation.

Optimal Model

For the reasons established above, Total Assets and %OutDtrOwn were removed from the initial model, leaving six remaining predictor variables. These variables, AvgACDtrships, %IndDrts, CEOChair, NomExist, %OutBlockOwn and Big6Aud, represent the most parsimonious variables and include at least one variable from each of the four governance categories investigated by this study. The reduction in variables also meant that the ratio between the number of predictors and the number of data sets was now adequately within the proportions suggested by Fields (2005) to achieve increased reliability. For example, 76 divided by 6 = 12.7 data sets per predictor, an important improvement over the initial model which calculated only 9.5 data sets per predictor (76/8 = 9.5).

Conditional Logistic Regression

Fraud = b_1 (AvgACDtrship) + b_2 (PerIndDtrs) + b_3 (CEOChair) + b_4 (NomExist) + b_5 (%OutBlockOwn) +b_6 (Big6Aud) + e

Differenced Independent Variable	Expected Sign	Est. Coeff.	Std. Error	Wald	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
							Lower Bound	Upper Bound
AvgACDtrships	+	0.367	0.160	5.216	0.022	1.443	1.053	1.976
PerIndDtrs	-	-0.037	0.016	5.540	0.019	0.964	0.935	0.994
CEOChair	+	1.226	0.470	6.820	0.009	3.408	1.358	8.555
NomExist	-	-0.807	0.482	2.801	0.094	0.446	0.173	1.148
PerOutBlockOwn	-	0.032	0.015	4.787	0.029	1.033	1.003	1.063
Big6Aud	-	-1.359	1.004	1.834	0.176	0.257	0.036	1.837
Paired Differences n =				76				
Chi-Square Test of Fit (6 degrees of freedom)				25.893	0.000			
Pseudo R-Square								
Nagelkerke				0.385				
Cox and Snell				0.289				

TABLE 8 – Optimal Regression Model

Table 8 above presents the results of the optimal regression model when executed on the full data set of 76 matched pairs. The outcome is also depicted in equation 2 below:

Fraud = 0.367(AvgACDtrship) – 0.037(%IndDrts) + 1.226(CEOChair) – 0.807(NomExist) + 0.032(%OutBlockOwn) – 1.359(Big6Aud) + e

The estimated coefficients produced by this model reveal that the percentage of independent directors on a company's board (%IndDtrs), the existence of a nominating committee (NomExist), and the engaging of a Big6 auditor (Big6Aud) are negatively related to the likelihood of fraud. Whereas, on average the number of directorships held by Audit Committee members (AvgACDtrship), the presence of a CEO who is also the Chairman of the Board (CEOChair), and an increase in the amount of stock owned by outside blockholders (%OutBlockOwn) are positively related to the occurrence of fraud. A slight increase in coefficient values between equations 1 and 2 after the removal of the Total Assets and %OutDtrOwn variables was observed, and the relations between the dependent and independent variables remained stable among the two equations.

The relation expressed by the signs of five of the coefficients, being AvgACDtrship, %IndDrts, CEOChair, NomExist and Big6Aud, were consistent with the hypotheses offered earlier in this study (see Table 1). However, the coefficient for the %OutBlockOwn variable produced an unexpected result. The expected direction of the relation between the percentage of outside blockholders ownership (%OutBlockOwn) and the incidence of fraud was anticipated to be negative, such that as the percentage of ownership increased the chances of fraud occurring would decrease. In contrast however, the estimated coefficient of 0.029 suggests a positive relation between blockholder ownership and fraud. This implies that as outside ownership in a company increases so does the prospect of fraud.

The Wald statistics for the variables in the optimal model, which indicate whether each independent variable is significantly different from zero, ranged from 6.82 to 1.83, with corresponding significance values of 0.009 to 0.176. As can be seen when comparing the results presented in Table 7 and 8, most of the Wald statistics improved slightly with the removal of the Total Assets and %OutDtrOwn variables. This suggests that the remaining variables make a more significant contribution in accounting for the difference between fraud and non-fraud companies than was observed when these variables were included in the model. However, a minor drop in the chi-square test of fit (6df) to 25.893 and the

Nagelkerke (Cox and Snell) pseudo r-squared to 0.385 (0.289) was noted after withholding the two variables. This insignificant reduction was most likely caused by a decrease in the number of degrees of freedom, from 8 in the initial model to 6 in the optimal model.

Of particular import is the fact that the optimal model remains relatively similar in results to the initial model. Not only does this further highlight the stability of the model but more importantly, it suggests that the model was not sensitive to the inclusion of the Total Assets variable. Considering the difficulties in precisely matching on the Total Assets criterion, it is of notable consequence that the optimal model is not sensitive to this difference.

Chief executives who also chair the board of directors and the percentage of independent directors sitting on the board offer the most distinct differences between fraud and non-fraud companies. Likewise, these two variables were also found to be highly significant in distinguishing a fraud from a non-fraud company. The exponentiated beta for the CEO=Chair variable illustrates that the odds of fraud occurring was 3.41 times more likely in a company that has a CEO who is also the Chairman of the board. On the other hand, for every 1% increase in the percentage of independent directors on the board the odds of being a fraud company decreases by 0.96. Moreover, we can be 95% confident that the actual exponentiated beta of the population for each of these variables rests between 1.358 to 8.555 and 0.935 to 0.994 respectively.

5.3.4 Validation Tests

Due to the size of the data set used for this study it was inappropriate to conduct validation tests via a data split method as both sub-samples would be too small to provide accurate results (Fields, 2005). Therefore, validation tests to confirm the robustness of the optimal model were achieved through a number of regressions executed on random samples of the existing database each incorporating 80% to 85% of the full sample. Results of these tests, which are presented in Table 9, are considered to provide evidence as to the stability, reliability and robustness of the optimal model to variations in data sets.

The random samples were selected via the SPSS random sampling feature. The size of the sub-samples were stipulated as including at least 80% and 85% of the full sample of matched pairs. (Two different size criterions were stipulated for the selection of the subsets, producing three random samples of at least 80% and a further three random samples of at least 85%.) The size criteria for the sub-samples was specifically chosen to ensure reliability would still be maintained with a data set of no less than 10 matched pairs per predictor variable. Other than specifying the sample size criterion, the results of the conditional logistic regressions presented below are based on sample subsets of matched pairs chosen completely at random by the SPSS program.

Conditional Logistic Regression

Fraud = b_1 (AvgACDtrship) + b_2 (PerIndDtrs) + b_3 (CEOChair) + b_4 (NomExist) + b_5 (%OutBlockOwn) +b_6 (Big6Aud) + e

		SAMPLED AT APPROX. 80% OF FULL SAMPLE						SAMPLED AT APPROX. 85% OF FULL SAMPLE					
Differenced Independent Variable	**Expected Sign**	**Random Sample 1**		**Random Sample 2**		**Random Sample 3**		**Random Sample 4**		**Random Sample 5**		**Random Sample 6**	
		Est. Coeff.	**Sig.**	**Est. Coeff.**	**Sig.**	**Est. Coeff.**	**Sig.**	**Est. Coeff.**	**Sig.**	**Est. Coeff.**	**Sig.**	**Est. Coeff.**	**Sig.**
AvgACDtrships	+	0.421	0.020	0.613	0.010	0.405	0.033	0.357	0.038	0.368	0.027	0.383	0.026
PerIndDtrs	-	-0.036	0.027	-0.039	0.041	-0.039	0.040	-0.034	0.036	-0.035	0.038	-0.049	0.011
CEOChair	+	1.615	0.003	2.187	0.002	1.716	0.005	1.753	0.002	1.480	0.005	1.285	0.013
NomExist	-	-1.240	0.030	-1.598	0.018	-0.961	0.110	-0.900	0.096	-0.766	0.136	-0.346	0.504
PerOutBlockOwn	-	0.029	0.056	0.029	0.092	0.037	0.054	0.032	0.045	0.045	0.013	0.039	0.029
Big6Aud	-	-1.426	0.166	-1.667	0.130	-1.350	0.203	-1.287	0.218	-1.278	0.223	-1.359	0.196
Paired Differences n =		70		60		61		69		70		65	
Chi-Square Test of Fit (6 df)		27.430	0.000	27.124	0.000	25.053	0.000	25.308	0.000	26.562	0.000	21.547	0.001
Pseudo R-Square													
Nagelkerke		0.432		0.485		0.449		0.409		0.421		0.376	
Cox and Snell		0.324		0.364		0.337		0.307		0.316		0.282	

TABLE 9 – Validation Test Results

Table 9 above presents the findings of the validation tests. The number of pairs per sub-sample ranged from 60 to 70, and relatively similar results throughout the extent of the six tests were achieved. Overall, the chi-square test of fit ranged from a high of 27.430 for random sample 1, to a low of 21.547 for random sample 6, with all tests being significant at $p<0.001$. On average the chi-square for the six sub-samples (25.504), is very closely aligned to that of the optimal model incorporating the full sample of 76 pairs (25.893). The Nagelkerke (Cox and Snell) pseudo r-squared was also fairly stable over the six tests, giving results between 0.485 (0.364), for random sample 2, and 0.376 (0.282), for random sample 6.

Consistent with the results of the optimal model containing the full sample of 76 pairs, all of the sub-samples depicted the AvgACDtrships, %IndDtrs, and CEO=Chair variables as being significant at the $p<0.05$ level. However, only random samples 4, 5 and 6 consistently showed the percentage of ownership held by outside blockholders (%OutBlockOwn) to be significant. Conversely, random samples 1, 2 and 3 showed minor inconsistencies in the significance of the NomExist and %OutBlockOwn variables. For instance, random sample 1, with a sample size of 70 pairs, showed the existence of a nominating committee to be significant at $p=0.030$ but failed to find significance based on the percentage of ownership held by outside blockholders ($p=0.056$). In addition, random sample 2, with a sample size of 60 pairs, also produced similar results for the NomExist ($p=0.018$) and %OutBlockOwn ($p=0.092$) variables. Whilst random sample 3, with a sample size of 61 pairs, found both NomExist and %OutBlockOwn to be insignificant at $p=0.110$ and $p=0.054$ respectively.

The findings of random samples 1 and 2 indicate that a difference was present between the existence of nominating committees in fraud and non-fraud companies. The regression results of these two sub-samples suggest that not having a nominating committee is significantly related to the occurrence of fraudulent financial reporting, which lends support for hypothesis 13. The negative relation indicates that a company that has a nominating committee is less likely to commit financial reporting violations.

Despite the fact that the above results highlight some variation between the NomExist and %OutBlockOwn variables, these inconsistencies were considered to be minor, with the latter variable attaining significance of at least 10% p-level in all six tests. It is also interesting to note that although the variations were all associated with the three random samples selected at the 80% threshold, it does not appear that the small sizes of the samples had too much of a bearing on the reliability of the results. Random sample 5 with 70 pairs (largest= sub-sample size) had a chi squared of 26.562 and a Nagelkerke (Cox and Snell) pseudo r-squared of 0.421 (0.316), while random sample 2 with 60 pairs (smallest sub-sample size) had 27.124 and 0.485 (0.364) respectively. Furthermore, no conflicting relation results were observed, with all tests producing identical relations between the dependent and independent variables as those produced by the full sample model. It is therefore reasonable to assume that the inconsistencies noted in the NomExist and %OutBlockOwn variables are purely random in nature.

Based on the above results of the validation tests it is considered that the conditional logistic regression model posed by equation 2 (optimal model) is reliably stable and robust to random changes in data sets.

5.4 Summary

Of interest was the non-significance of all variables included in the Audit Committee Functionality category. Both matched pair t-tests and Wilcoxon signed-rank tests offered the same non-significant results indicating that differences in Audit Committee governance attributes between fraud and non fraud companies do not exist. Conversely, the Board of Directors Composition category provided the largest quantity of significant variables of any of the four governance categories, with all but one of the six variables tested in this group being significant at $p<0.05$.

The ownership structure of fraud companies differs modestly from that of non-fraud companies in the area of outside stock ownership. Of particular interest was the positive relationship found to exist between the %OutBlockOwn variable and

fraudulent financial reporting, which conflicted with the hypothesised negative relationship expected. The External Auditor category tested the significance of the retention of a Big 6 auditor in addition to the length of tenure of the auditor. The tests found a significant difference existed in the retention of a Big 6 auditor by non-fraud companies when compared to fraud companies.

The initial regression equation incorporated eight variables, including at least one variable from each of the four governance categories, as well as the Total Assets control variable. A modified equation, incorporating just six of the original twenty-four variables, was then presented as the optimal model to test the relation between corporate governance attributes and fraudulent financial reporting. The logistic regression of the optimal model produced a chi-square test of fit of 25.893 and a Nagelkerke (Cox and Snell) pseudo r-squared of 0.385 (0.289), suggesting that the model's predictors were reasonably capable of explaining the variance in the dependent variable. Four variables in the optimal regression equation produced statistically significant results at the $p<0.05$ level allowing for the acceptance of hypotheses 7, 10, 11, and 17. Or, more specifically:

- Fraudulent financial reporting is more likely to occur as the average number of directorships held by AC members' increases;
- Fraudulent financial reporting is less likely to occur as the percentage of independent directors on a company's board increases;
- Fraudulent financial reporting is more likely to occur in company's that have a CEO that is also the Chairman of the board of directors; and
- Fraudulent financial reporting is more likely to occur as the percentage of company ownership held by outside blockholders increases.

Furthermore, validation tests performed on the regression model by using randomly selected sub-samples also highlighted an intermittent significance in the variable depicting the existence of a nominating committee. Support for hypothesis 13, which proposed that fraudulent financial reporting is less likely to occur in companies that have a nominating committee was accordingly also achieved.

Chapter Six

CONCLUSIONS

6.1 Introduction

The purpose of this chapter is to discuss some of the major implications arising from the findings made by this study. These implications will be explored and inferences drawn to possible ways in which enhancements might be made to relieve the continuing occurrence of fraud. This chapter will also examine the study's limitations and identify potential areas for future research.

The study tested 76 matched pairs of fraud and non-fraud companies to distinguish differences between the pairs with regard to the selected independent variables depicting various attributes of corporate governance. Hypotheses were proposed and statistically tested through the performance of both univariate and multivariate analysis. This was followed by an examination of the results obtained. The existence of significant differences was considered indicative of a relationship between fraudulent financial reporting and the respective corporate governance variable. The findings identified support for a number of the hypotheses posed. (For a full report on the test results see Chapter 5.)

6.2 Conclusions

While fraud is a broad legal term that encompasses a wide range of wrongful acts, this study has focused exclusively on actions that have lead to fraudulent financial reporting. An understanding of this complex issue is considered pertinent to finding solutions to stem its occurrence. From this perceptive the test results provide valuable and insightful information regarding aspects of corporate governance in public companies and how the strengthening of the oversight provided by governing bodies may have beneficial qualities relative to the occurrence of this type of fraud.

The findings of this study provide empirical evidence that a number of corporate governance attributes are significantly related to the incidence of fraudulent financial reporting. These findings contribute to the growing body of corporate governance and fraud literature and provide support for the many suggestions made in reference to improving the oversight and monitoring performed in public companies. The results also highlight a number of concerns that may have implications on the occurrence of fraudulent financial reporting in the future.

One such area of concern was the fact that this study revealed that the increased emphasis placed on audit committees in the form of regulatory requirements may not have had an effect on the incidence of fraudulent financial reporting. All eight variables included in the Audit Committee Functionality category lacked significance when paired t-tests and paired Wilcoxon signed-rank univariate tests were performed. This lack of significance could be as a result of the listing requirements and other governance regulations that now make it mandatory to maintain an adequately functioning audit committee. In this respect, companies listed on US stock exchanges are now obliged to have an audit committee comprised of at least 3 members, one of which must be an ACFE. As these rules are compulsory rather than discretionary, it would appear that the distinction between fraud and non-fraud companies, in so far as this monitoring body is concerned, is no longer apparent. This has future implications when taking into consideration that fraudulent financial reporting continues to occur in companies irrespective of the fact that most new audit committee regulations appear to have been complied with.

The primary purpose of maintaining an audit committee is to oversee and monitor the financial reporting process of a company. However, recently regulators and the public have raised serious doubts regarding the effectiveness with which this governance body has been undertaking their duties. Shareholders rely substantially on the financial reporting process, and in particular the disclosures produced as a function of that process, to provide a fair and accurate presentation of a company's financial condition. As such, issues pertaining to the independence and competence of the audit committee members contributed

heavily to the substance of new regulations aimed at improving oversight and consequently strengthening the possibility of detecting any financial wrong doing. Bearing this in mind it is therefore alarming to observe the number of fraud cases that continue to occur unheeded. This could be taken as a strong indication that regulation, at least with regard to this governance body, may not go far enough to ensure effective oversight.

The findings of this study indicate that the independence of board of director members, the duality of the CEO and Chairperson positions, and stock ownership by held by outside blockholders have a significant consequence on the incidence of fraudulent financial reporting. The composition of the board of directors and in particular its top position, that of the Chairperson, was found to provide the strongest test results and are of notable importance. These results confirm that effective corporate governance, in the form of an independent and impartially lead board of directors, are negatively related to the incidence of fraudulent financial reporting. They also imply that other attributes of corporate governance, over and above those of the audit committee, may need to be looked at from a regulatory perspective.

The independence of members on the board of directors has been substantially covered by prior research and the results of this study further collaborate earlier findings that fraudulent financial reporting is related to the independence of members on the board. In particular the results indicate that as the independence increases the likelihood of fraud decreases. It is surprising then, that the listing rules for the US national stock exchanges only require that a majority of independent directors form the board of a public company. Perhaps the effectiveness of the board would be better served if all directors were required to be independent within the terms of the listing rules. Whilst this aspect was not investigated in the present study, future research of the implications of this proposal may be warranted.

The strengthening of corporate governance practices in public companies could also benefit from the compulsory separating of the CEO and chairman of the

board positions. This study's test results found a significant relationship existed between CEO and Chairman duality and the incidence of fraudulent financial reporting. It is likely this occurs as a consequence of the substantial influence a CEO who also holds the chairman of the board position would be able to exert over the board of directors and its committees. Regulators should seriously consider the lack of impartiality that this situation creates, along with the effects this may have on the decision-making process of a company. Taking into account these findings, along with similar findings by earlier studies, it may be appropriate for regulators to contemplate the possibility of implementing legislation to prohibit these two very important and influential positions being performed by the same person.

Differences were also identified between fraud and non-fraud companies concerning the existence of a nominating committee. This attribute may furthermore be a consequence of duality of the CEO and chairman positions, such that this person may be able to exert more influence over who is selected for nomination to the board when a separate nominating committee does not exist. Under these circumstances the composition of the board and impartiality of the nominating process may be jeopardised. This could result in persons tolerant or supportive to the CEO's actions and more likely to sanction management decisions being favoured in the nomination process.

Another result deserving of further discussion was the unexpected positive relationship between the percentage of outside blockholder ownership and fraud (as proposed by hypothesis 17). The assumption based on earlier research which, suggested a negative relation occurs because blockholders often closely monitor the financial results of companies they hold ownership rights in, was not supported by the tests performed in this study. Instead, a positive relationship between outside blockholders and fraudulent financial reporting was found to exist. This implies that as outside ownership in a company increases so does the prospect of fraud.

In light of this contradiction it was considered that along with the proffered positive benefits enhanced monitoring by blockholders may bring, this increased scrutiny might also provide unwanted side effects. If management is aware that blockholders are closely monitoring the financial affairs of the company, it may intensify the pressure felt by managers to ensure positive financial results are achieved. This type of predicament may provide sufficient incentive to fraudulently report the company's accounts, particularly in the event of a downturn in business. As a consequence of this situation a positive relationship between the percentage of ownership held by outside blockholders and fraud, such as that detected in this study, is more likely to occur.

The test results also identified a negative relationship between the retention of a Big 6 auditor and the incidence of fraudulent financial reporting. Whilst the actions of external auditors are of consequence to the occurrence of fraud, it is not believed that this result occurs because of a perceived quality differentiation between Big6 and non-Big6 accounting firms. Rightly or wrongly accounting firms that perform the annual audit are seen as providing a degree of protection and assurance to shareholders with regard to the detection of fraud. Therefore, the fact that a difference exists between the retention of a Big6 accounting firm by non-fraud companies when compared to fraud companies is considered worthy of further investigation to examine more comprehensively why this association occurs.

On the whole, the findings of this study support the proposition that the effectiveness of the corporate governance structure is associated with fraudulent financial reporting and that by strengthening governance practices in public companies this type of deceptive behaviour might be minimised. The empirical evidence provided by the tests performed serves to confirm that relationships exist between a number of corporate governance attributes and fraud. Specifically, it was identified that the average number of directorships held by audit committee members, the duality of the CEO and chairman of the board positions, and the percentage of company ownership held by outside blockholders are positively related to the incidence of fraudulent financial reporting. Conversely, the

percentage of independent directors on a company's board is negatively related to the incidence of fraudulent financial reporting.

Furthermore, the tests conducted by this study indicate that while some of the recent regulatory changes made by the SEC and US stock exchanges may serve to enhance corporate governance, and with it the ability to curb fraudulent financial reporting, the findings also imply that additional strengthening may still be required. It is believed that these findings are substantial and provide valuable information with regard to the effective functioning of the corporate governance structure. With this in mind it is believed corporate governance bodies, accountants and regulators, along with the investing public, will gain benefit from the findings presented in this study.

6.3 Limitations

This study relied upon publicly available information to populate both the dependent and independent variables. The necessary data was therefore only available for companies required by law to make public certain particulars relating to their operational and financial affairs. As a consequence, only companies that are registered on one of the US national stock exchanges, and therefore required to lodge filings with the SEC, were included in the study. Hence, extrapolation only applies to large publicly listed companies.

Furthermore, due to the fact that size is a listing criterion for a company to become registered on a US stock exchange, the majority of entities investigated by this study were relatively large. Smaller companies, on the other hand, along with privately held companies, were essentially excluded from the study by virtue of the necessary information required to populate the variables being unavailable. This form of exclusion may limit the ability to generalise the findings of the test sample to the complete population, since the results could be biased towards larger public companies.

Another limitation of this study relates to the identification of fraud and non-fraud companies. AAER's issued by the SEC were used to identify fraud cases and

ultimately to select the companies included in the fraud sample. This is a strong reliable source of fraud cases because the SEC is the sole US authority delegated with enforcement of the anti-fraud securities laws. However, because the SEC has limited resources it must select which cases it will investigate and in due course, where sufficient evidence abounds, lay charges of fraudulent financial reporting. This selection process means that not all suspected cases of fraud advance to the point where enforcement action is taken, and consequently an AAER issued. Therefore, cases of fraud able to be identified through the issuance of an AAER cannot be taken to automatically imply that all other companies are non-fraudulent.

Unfortunately, there is no method whereby fraudulent financial reporting can be quantified with precision (NCFFR, 1987). As only cases of 'detected' fraud are available to study, there is no way of confirming that undetected fraud has not occurred in other companies. Thus the possibility exists that a company that has committed financial statement fraud, but as yet has not been detected, may inadvertently be selected as a non-fraud company. Unknowingly including such entities as non-fraud companies could bias the results in the direction of the fraud companies[12], thereby again limiting the ability to generalise the findings to the full population.

A further limitation was the ability to control for all possible characteristics that may influence the presence of fraud. While the matching process served to limit variances in general company characteristics, and additional control variables were identified for inclusion in tests to control a further four potential influencers of fraud, it is highly probable that other elements not controlled in the tests may induce fraudulent financial reporting. However, as this study does not serve to test causality, but rather the relation between fraud and attributes of corporate governance, the effect this limitation had on the findings is considered to be of minor consequence.

The quantity and thoroughness of the information available also served to limit the quality of the findings of some variables. Some variables required information that while not mandatory to provide in the course of public disclosure, the details could be regarded as being helpful in determining the effectiveness of the corporate governance structure. An example of such information is the length of tenure an external auditor has been retained by a company. The fact that not all companies provided this information meant that the tests were possibly biased by the inclusion of a proxy of one year being used when no additional information was accessible to populate the auditor tenure variable. This impacted on the ability to accurately infer the significance of auditor tenure and has limited the value able to be gained from interpreting the results of this variable.

Finally, a study of this nature will always be susceptible to measurement subjectivity. Where some independent variables cannot be populated by the existence of an exact answer reported in the information available on the company, measurement of the variable is based on specified criteria (see Chapter 4 for the exact measurement criteria used for each variable). Even though the criteria may be documented, in reality this type of measurement would still be subjective and biased by the author's own viewpoint. Hence, measuring subjectivity may further place limitations on the reliability of data upon which the results are based.

6.4 Future Research

The findings of this study provide evidence that a number of corporate governance attributes are significantly related to the incidence of fraudulent financial reporting. However, the results obtained do suggest that there are several areas that were not covered by this study but could potentially be of relevance to corporate governance and the occurrence of this type of fraud. One possible avenue for future research that was highlighted by this present study

[12] If a selected non-fraud company was subject to undetected fraud it is expected more similarities and less differences would exist between this company and its fraudulent matched pair. Resulting in the findings being bias toward fraud companies.

includes the testing of additional attributes that may influence the effectiveness of the audit committee.

Although earlier research has shown that increasing the effectiveness of an audit committee reduces the likelihood of fraud, the empirical evidence provided by this study indicates that no such relationship exists. This contradiction in findings serves to suggest that perhaps the functioning of audit committees in non-fraud companies goes beyond that required simply by regulation, or conceivably, it may be other aspects within the audit committee not tested by this study that differentiate the effectiveness of this monitoring body. If this is the case, variables based on regulatory requirements would understandably exhibit little variance and the true differences in the functioning of audit committees operating in fraud and non-fraud companies would necessitate the testing of additional variables.

In this respect it is possible that qualitative attributes, such as management style or ethical values, may have a bearing on how an audit committee operates, and as such the effectiveness with which it oversees the financial reporting process. It is considered that valuable information could be gained from testing whether an association exists between qualitative attributes and the effectiveness of the audit committee with regard to the incidence of fraudulent financial reporting. Accordingly, future research to investigate what other aspects pertaining to audit committees may possibly differentiate fraudulent from non-fraudulent companies may be of substantial benefit, particularly in light of the current findings.

Another prospective area for future research involves an investigation of the potential benefits associated with an entirely independent board of directors as opposed to the current majority requirement stipulated in listing rules. Research that investigates whether any potential benefits, with regard to fraud occurrences, could be gained from implementing regulation to require the entire board of directors to be independent of the company they serve. This study found that as the number of independent members on the board of directors increased the likelihood of fraud decreased. Therefore, it is considered that the results of testing

a hypothesis based on the requirement for independence of all members would be useful to regulators. A study of this nature could provide the evidence to prove an increase is needed, or conversely, it may rule out this action as bringing no substantial benefit to restraining the occurrence of fraudulent financial reporting.

One already known positive side effect of requiring full independence of a board would however be the automatic prohibiting of the CEO also holding the position of the chairman of the board. The advantages of prohibiting duality have been briefly discussed earlier in this chapter and more fully explained in Chapter 3.

An additional area worthy of further research is that of the type of accounting firm retained by fraud and non-fraud companies as the appointed external auditor. While numerous studies have found that, when compared to fraud companies, non-fraud companies are more likely to retain the services of a Big6 auditor, it would be of interest to explore more thoroughly why this association occurs. Some earlier studies have speculated that this occurs as a result of Big6 auditors performing a superior quality audit than non-Big6 auditors. Alternatively, it could be considered that this association may be caused more by avoidance issues than by any differentiation in audit quality. In this respect it is possible that the relationship transpires because the engagement of a Big6 accounting firm may be avoided by management or board of directors of company's that utilise questionable accounting practices. Or, alternatively Big 6 accounting firms may avoid being retained by companies they consider to be risky or of dubious reputation. However, these rationalisations are pure speculation, therefore, future research aimed at providing some empirical evidence as to why the association between Big 6 auditors and non-fraud companies exists could contribute substantially to the fraud and corporate governance literature.

REFERENCES

Abbott, L. J., Park, Y. & Parker, S. 2000. The Effects of Audit Committee Activity and Independence on Corporate Fraud. *Managerial Finance*, 26 (11) pg.55-67.

Abbott, L. J., Parker, S. & Peters, G. F. 2004. Audit Committee Characteristics and Restatements. *Auditing: A Journal of Practice & Theory,* 23 (1), pg. 69-87.

Abbott, L. J., Parker, S., Peters, G. F. & Raghunandan, K. 2002. An Investigation of the Impact of Audit Committee Characteristics on the Relative Magnitude of Non-Audit Service Purchases. *University of Memphis, Working Paper.*

Abbott, L. J., Parker, S., Peters, G. F. & Raghunandan, K. 2003. The Association Between Audit Committee Characteristics and Audit Fees. *Auditing: A Journal of Practice and Theory*, 22 (2), 17-32.

(ACFE) Association of Certified Fraud Examiners. 2005. 2004 Report to the Nation, Occupational Fraud and Abuse. Austin, TX: ACFE.

Agrawal, A., & Chadha, S. 2005. Corporate Governance and Accounting Scandals. *Journal of Law and Economics*, 48 (2), pg. 371-406.

Ahmad, A. C., Houghton, K. A. & Yusof, N. Z. M. 2006. The Malaysian Market for Audit Services: Ethnicity, Multinational Companies and Auditor Choice. *Managerial Auditing Journal*, 21 (7), pg. 702-723.

(AICPA) American Institute of Certified Public Accountants, Inc. 2002. Statement on Auditing Standard (SAS) No. 99: Consideration of Fraud in Financial Statement Audit. New York, N.Y.

(AICPA) American Institute of Certified Public Accountants, Inc. 2005. Management Override of Internal Controls: The Achilles' Heel of Fraud Prevention. New York, N.Y.

Anderson, R., Mansi, S. A., & Reeb, D. 2004. Board Characteristics, Accounting Report Integrity, and the Cost of Debt. *Journal of Accounting and Economics,* 37 (3), pg. 315-342.

Archambeault, D. S. 2000. The Relation Between Corporate Governance Strength and Fraudulent Financial Reporting. *Culverhouse School of Accountacy, University of Alabama, Dissertation.*

Archambeault, D. S. 2002. The Relation Between Corporate Governance Strength and Fraudulent Financial Reporting: Evidence from SEC Enforcement Cases. *School of Business, University of Albany, New York, Working Paper.*

Archambeault, D. S. & DeZoort, F.T. 2001. Auditor Opinion Shopping and the Audit Committee: An analysis of Suspicious Auditor Switches. *International Journal of Auditing*, 5 (3), pg. 33-52.

Badawi, I. M. 2005. Global Corporate Accounting Frauds and Action for Reforms. *Review of Business*, 26(2), pg. 8-14.

Baswell, M. & Mauldin, E. 2004. Changes in Audit Committee Financial Expertise. *School of Accountacy, University of Missouri-Columbia, Working Paper.*

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), pg.443-465.

Beasley, M. S. 1998. Boards of Directors and Fraud. *The CPA Journal,* 68 (4), pg. 56-58.

Beasley, M. S., Carcello, J. V. & Hermanson, D. R. 1999. Fraudulent financial reporting: 1987-1997. An analysis of U.S. public companies. *Committee of Sponsoring Organizations of the Treadway Commission (COSO).*

Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Lapides, P. D. 2000. Fraudulent Financial Reporting: Consideration of Industry Traits and Corporate Governance Mechanisms. *Accounting Horizons,* 14 (4) pg. 441-454.

Beasley, M. & Petroni K. 2001. Board Independence and Audit Firm Type. *Auditing: A Journal of Practice and Theory*, 20 (1) pg. 97-114.

Beasley, M. & Salterio, S. 2001. The Relationship Between Board Characteristics and Voluntary Improvements in the Capability of Audit Committees to Monitor. *Contemporary Accounting Research*, 18 (4), pg. 539-570.

Bebchuk, L. A. & Fried, J. M. 2003. Executive Compensation as an Agency Problem. *Journal of Economic Perspectives*, 71 (92), pg. 1-27.

Becker, C., DeFond, M., Jiambalvo, J., & Subramanyam, K. R. 1998. The Effects of Audit Quality on Earnings Management. *Contemporary Accounting Research,* 15 (1), pg. 1-24.

Bédard, J., Chtourou, S. M. & Courteau, L. 2004. The Effect of Audit Committee Expertise, Independence, and Activity on Aggressive Earnings Management. *Auditing,* 23 (2) pg. 13-35.

Beneish, M.D. 1997. The Detection of Earnings Manipulation. *Financial Analysts Journal*, 55 (5), pg. 24-36.

Beneish, M. D. 1999. Incentives and Penalties Related to Earnings Overstatements that Violate GAAP. *The Accounting Review*, 74 (4), pg. 425-457.

Berle, A. A. Jr. & Means, G. C. 1932. *The Modern Corporation and Private Property*. New York: The MacMillan Company.

Berry, T. K. 2000. The Evolution and Interrelationships of Corporate Governance Mechanisms as Firms Mature, *Texas A&M University, Ph.D. Dissertation.*

Bertrand, M. & Mullainathan S. 2000. Agents With and Without Principals. *American Economic Review*, 90 (2), pg. 203-208.

Bonner, S.E., Z.V. Palmrose, and S.E. Young.1998. Fraud Type and Auditor Litigation: An Analysis of SEC Accounting and Auditing Enforcement Releases. *The Accounting Review*, 73 (4), pg. 503-532.

(BRC) Blue Ribbon Committee. 1999. *Report and Recommendations of the Blue Ribbon Committee on Improving the Effectiveness of Corporate Audit Committees*. New York: New York Stock Exchange and National Association of securities Dealers.

Brockmann, E. N., Hoffman, J. J. & Dawley, D. D. 2006. A Contingency Theory of CEO Successor Choice and Post-Bankruptcy Strategic Change. *Journal of Managerial Issues*, 18 (2), pg. 213-231.

Buchalter, S. & Yokomoto, K. 2003. Audit Committees' Responsibilities and Liability. *The CPA Journal*, 73 (3), pg. 18–24.

Burilovich, L. S. & Katelus, S. C. 1997. Auditors' Influence on Earnings Management: Evidence from the Alternative Minimum Tax. *Journal of Applied Business Research*, 13 (2), pg.9–22.

Cadbury, A. Sir. Speech to the Global Corporate Governance Form hosted by the World Bank, July, 2000. New Orleans, March 7, 2002

Cafferty, D. 2004. A Practical Fraud Prevention Strategy. *Credit Management*, pg. 28-30.

Carcello, J. V., Hermanson, D. R., Neal, T.L. & Riley, R. Jr. 2002. Board Characteristics and Audit Fees. *Contemporary Accounting Research*, 19 (3), pg. 365-384.

Carcello, J. V. & Nagy, A. L. 2004a. Audit Firm Tenure and Fraudulent Financial Reporting. *Auditing: A Journal of Practice & Theory*, 23 (2), pg. 55-69.

Carcello, J. V. & Nagy, A. L. 2004b. Client Size, Auditor Specialization and Fraudulent Financial Reporting. *Managerial Auditing Journal*, 19 (5), pg. 651-668.

Carcello, J. V. & Neal, T. L. 2003. Audit Committee Characteristics and Auditor Dismissals Following 'New' Going-Concern Reports. *The Accounting Review*, 78 (1), pg. 95-117.

Carson, T. L. 2003. Self–Interest and Business Ethics: Some Lessons of the Recent Corporate Scandals. *Journal of Business Ethics*, 43 (4), pg. 389-394

Charreaux, G. J. & Desbrieres, P. 2001. Corporate Governance: Stakeholder Value versus Shareholder Value. *Journal of Management and Governance*, 5 (2), pg. 107-128.

Cheng, E. C. M. & Courtenay, S. M. 2006. Board Composition, Regulatory Regime and Voluntary Disclosure. *The International Journal of Accounting*, 41 (3), pg.262-289.

Cheng, Q. & Warfield, T. 2005. Equity Incentives and Earnings Management. *The Accounting Review*, 80 (2), pg. 441-476.

Chiang, H. T. 2005. An Empirical Study of Corporate Governance and Corporate Performance. *Journal of American Academy of Business*, 6 (1), pg. 95-101.

Chung, R., Firth, M. & Kim, J. B. 2002. Institutional Monitoring and Opportunistic Earnings Management. *Journal of Corporate Finance*, 8 (1), pg. 29-48.

Claessens 2006. Corporate Governance and Development. *The World Bank Research Observer*, 21 (1), pg. 91

Coffee, J. C. Jr. 2001. The Acquiescent Gatekeeper: Reputational Intermediaries, Auditor Independence and the Governance of Accounting. *Columbia Law School and Harvard Law School Working paper*.

Cohen, J., Krishnamoorthy, G. & Wright, A. 2002. Corporate Governance and the Audit Process. *Contemporary Accounting Research* 19 (4), pg. 573-594.

Colbert, G. & Murray, D. 1999. State Accountancy Regulation, Audit Firm Size and Auditor Quality: An Empirical Investigation. Journal of Regulatory Economics, 16 (3), pg. 267-85

Core, J. E., Holthausen, R. & Larcker, D. 1999. Corporate governance, CEO Compensation and Firm Performance. *Journal of Financial Economics*, 51 (3), pg. 371–406.

Crocker, K. J., & Slemrod, J. 2004. The Economics of Managerial Compensation and Earnings Manipulation: A Problem of Contract Design in the Presence of Hidden Information and Hidden Actions. *University of Michigan Business School Working Paper.*

Cronqvist, H. & Fahlenbrach, R. 2006. Large Shareholders and Corporate Policies. *Fisher School of Business, Ohio State University, Working Paper*.

Cyert, R., Kang, S. H. & Kumar, P. 2002. Corporate Governance, Takeovers, and Top-Management Compensation: Theory and Evidence. *Management Science,* 48 (4), pg. 453-469.

Davis, L. R., Soo, B. & Trompeter, G. 2000. Auditor Tenure, Auditor Independence and Earnings Management. *Boston College and Michigan Tech University, Working Paper.*

DeChow, P. M., Sloan, R. G. & Sweeney, A. P. 1996. Causes and Consequences of Earnings Manipulation: An Analysis of Firms Subject to Enforcement Actions by the SEC. *Contemporary Accounting Research,* 13 (1), pg. 1-36.

DeZoort, F.T., Hermanson, D.R., Archambeault, O.S. & Reed S. 2002. Audit Committee Effectiveness: A Synthesis of the Empirical Audit Committee Literature. *Journal of Accounting Literature,* 21 (1), pg. 38-75.

DeZoort, F.T. & Salterio, S. 2001. The Effects of Corporate Governance Experience and Financial Reporting and Audit Knowledge of Audit Committee Members' Judgments. *Auditing: A Journal of Practice and Theory,* 20 (2), pg. 31 -48.

Dunn, P. (2004). The Impact of Insider Power on Fraudulent Financial Reporting. *Journal of Managemen*t, 30 (3), pg. 397-412.

Efendi, J., Sirvastara A. & Swanson E. P. 2004. Why do Corporate Managers Misstate Financial Statements? The Role of Option Compensation, Corporate Governance, and Other Factors. *Texas A&M University, Working paper.*

Eisenberg, T., Sundgren, S. & Wells, M. 1998. Larger Board Size and Decreasing Firm Value in Small Firms. *Journal of Financial Economics*, 48 (1), pg. 35-54.

Elayan, F. A., Li, J. & Meyer, T. O. 2003. Accounting Irregularities, Management Compensation Structure and Information Asymmetry. *School of Accountancy, Massey University, Working Paper*.

Emmerich, A. O., Racz, G. N., & Unger, J. 2005. Composition of the Audit Committee: Ensuring Members Meet the New Independence and Financial Literacy Rules. *International Journal of Disclosure and Governance*, 2 (1), pg. 67-80.

Erickson, M., Hanlon, M. & Maydew, E. L. 2003. Is There a Link Between Executive Compensation and Accounting Fraud? *University of Michigan Business School, Working Paper.*

Fanning, K., & Cogger, K. (1998). Neural Network Detection of Management Fraud Using Published Financial Data. *International Journal of Intelligent Systems in Accounting, Finance & Management.* 7 (1), pg. 21-41.

Farber, D. B. 2005. Restoring Trust After Fraud: Does Corporate Governance Matter? *The Accounting Review*, 80 (20), pg. 539–561.

Feldmann, D. A. & Schwarzkopf, D. L. 2003. The Effect of Institutional Ownership on Board and Audit Committee Composition. *Review of Accounting and Finance*, 2 (4), pg. 87-109.

Felo A. J., Krishnamurthy, S. & Solieri S. A. 2003. Audit Committee Characteristics and the Perceived Quality of Financial Reporting: A Empirical Analysis. *Pennsylvania State University, Working Paper.*

Field, A. 2005. Discovering Statistics Using SPSS, 2nd Ed., London : SAGE Publications.

Francis, J. & Krishnan, J. 1999. Evidence on Auditor Risk-Management Strategies Before and After the Private Securities Litigation Reform Act of 1995. *Asia-Pacific Journal of Accounting and Economics*, 9 (2), pg. 135-157.

Francis, J., Maydew, E. & Sparks, H. 1999. The Role of Big 6 Auditors in the Credible Reporting of Accruals. *Auditing: A Journal of Practice and Theory*, 18 (2), pg.17-34.

Frieswick, K. 2003. How Audits Must Change: Auditors Face More Pressure to Find Fraud. *CFO Magazine*, pg. 1-7.

Garson, G. D. 1998. Log-Linear, Logit, and Probit Models. *North Carolina State University, StatNotes – PA765.*

Gavin, T. 2003. Improving the Financial Reporting Process. *Commercial Lending Review*, 18 (5), pg. 10-30.

Geiger, M. A. & Raghunandan, K. 2002. Auditor Tenure and Audit Reporting Failures. *Auditing*, 21 (1), pg. 67-78.

George, N. 2004. Auditor Rotation and the Quality of Audits. *CPA Journal*, 74 (12), pg. 22-25.

Geriesh, L. 2003. Organizational Culture and Fraudulent Financial Reporting. *CPA Journal*, 73 (3), pg. 28-32.

Ghosh, A. & Moon D. 2005. Auditor Tenure and Perceptions of Audit Quality. *The Accounting Review*, 80 (2), pg. 585-612.

Ghosh, C. & Sirmans, C. F. 2005. On REIT CEO Compensation: Does Board Structure Matter? *The Journal of Real Estate Finance and Economics*, 30 (4), pg. 397–428.

Grice, J.S. Sr. 2001. Fraud Detection in Audits of Not-For-Profit Organizations. *National Public Accountant*, 46 (1), pg.10-15.

Gul, F. A. 1999. Audit Prices, Product Differentiation and Economic Equilibrium. *Auditing*, 18 (1) pg. 90-100.

Han, K. C. & Suk, D. Y. 1998. The Effect of Ownership Structure on Firm Performance: Additional Evidence. *Review of Financial Economics*, 7 (2), pg. 143-155.

Hartzell, J. & Starks L. 2003. Institutional Investors and Executive Compensation. *Journal of Finance*, 58 (6), pg. 2351-2374.

Herdman, R. *Making Audit Committees More Effective*. Speech by SEC Staff Presented to Tulane Corporate Law Institute, New Orleans, March 7, 2002.

Hermanson, D. R. 2006. Ten Conclusions on Corporate Governance, Accounting and Auditing. *Internal Auditing*, 21 (4), pg. 45-48.

Herz, R. H. Testimony of Chairman Financial Accounting Standards Board Before the Subcommittee on Capital Markets, Insurance and Government Sponsored Enterprises of the Committee on Financial Services, June 3, 2003.

Horwich, A. 2000. The Neglected Relationship of Materiality and Recklessness in Actions Under Rule 10b-5. *The Business Lawyer*, 55 (3), pg. 1023-1038.

Hosmer, D. W. & Lemeshow, S. 1989. *Applied Logistic Regression*. New York: John Wiley & Sons.

Hsieh, Dr L. F. & Tsai, Y. T. 2005. Information Asymmetry, Creative Accounting and Moral Choice: An Apocalypse of Procomp Informatics Ltd. Journal of American Academy of Business, 6 (2), pg. 64-73.

Iyer, V. & Rama, D. 2004. Clients' Expectations on Audit Judgment: A Note. *Behavioral Research in Accounting*, 16 (1), pg. 63-74.

Jensen, M. & Meckling, W. 1976. Theory of the Firm: Managerial Behavior, Agency Costs, and Ownership Structure. *Journal of Financial Economics*, 3, pg. 305-360.

Johnson, S. A., Ryan, H. E. & Tian, Y. S. 2003. Executive Compensation and Corporate Fraud. *Louisiana State University, Working Paper.*

Kaminski, K.A., Wetzel, T.S., & Guan, L. (2004). Can Financial Ratios Detect Fraudulent Financial Reporting? *Managerial Auditing Journal*, 19 (1), pg. 15-28.

Klein, A. 1998. Firm Performance and Board Committee Structure. *The Journal of Law and Economics*, 41 (1), pg. 275-303.

Klein, A. 2000. CEO Power, Board Independence and CEO Compensation: An Empirical Investigation. *New York University, Working Paper*.

Klein, A. 2002a. Economic Determinants of Audit Committee Effectiveness. *The Accounting Review* (April), pg. 435-454.

Klein, A. 2002b. Audit Committees, Board of Director Characteristics and Earnings Management. *Journal of Accounting and Economics*, 33 (3), pg. 375-400.

Klein, A. 2003. Likely Effects of Stock Exchange Governance Proposals and Sarbanes-Oxley on Corporate Boards and Financial Reporting. *Accounting Horizons*, 17 (4), pg. 343-355.

Klein, A. 2006. Audit Committee, Board of Director Characteristics, and Earnings Management. *New York University, Law & Economics Research Paper Series, Working Paper, No. 06-42.*

Kotowitz, Y. 1987. Moral Hazard in John Eatwell, Murray Milgate, and Peter Newman (Eds), The New Palgrave – A Dictionary of Economics, London: The Macmillan Press: pg. 549-551.

Kowhn, D. & Ueng, J. 2005. Evaluating the Evaluators: Should Investors Trust Corporate Governance Metrics Ratings? *Journal of Management and Governance*, 9 (2), pg. 111–128

KPMG. 2004. Fraud - Is Your Company Susceptible? *KPMG Accountability e-Lert*, (4) pg. 1-4.

Krishnamurthy, S., Zhou, J. & Zhou, N. 2006. Auditor Reputation, Auditor Independence, and the Stock-Market Impact of Andersen's Indictment on Its Client Firms. *Contemporary Accounting Research*, 23 (2), pg. 465.490.

Krishnan, J. 2003. Does Big 6 Auditor Industry Expertise Constrain Earnings Management? *Accounting Horizons*, 17 (Supplement), pg. 1-16.

Krishnan, J. & Schauer, P.C. 2000. The Differentiation of Quality Among Auditors: Evidence from the Not-For-Profit Sector. *Auditing*, 19 (2), pg. 9-26.

Latham, C. K. & Jacobs, F. A. 2000. Monitoring and Incentive Factors Influencing Misleading Disclosures. *Journal of Managerial Issues***,** 12 (2), pg.169-187.

Lee, T. A., Ingram, R. W. & Howard, T. P. 1999. The Difference Between Earnings and Operating Cash Flow as an Indicator of Financial Reporting Fraud. *Contemporary Accounting Research*, 16 (4), pg. 749-786

Lee, H. & Mande, V. 2003. The Effect of the Private Securities Litigation Reform Act of 1995 on Accounting Discretion of Client Managers of Big 6 and Non-Big 6 Auditors. *Auditing: A Journal of Practice & Theory*, 22 (1), pg. 93-108.

Lee, H. & Mande, V. 2005. The Relationship of Audit Committee Characteristics with Endogenously Determined Audit and Non-Audit Fees. *Quarterly Journal of Business and Economics*, 44 (3), pg. 93-112.

Lee, H., Mande, V. & Ortman, R. 2004. The Effect of Audit Committee and Board of Director Independence on Auditor Resignation. *Auditing: A Journal of Practice and Theory*, 23 (2), pg. 131-146.

Levitt, A. 1998. The 'Numbers Game' (speech). U.S. Securities and Exchange Commission.

Licata, M. P., Bremser, W. G. and Rollins, T. P. 1997. A SEC Enforcement Actions Against Auditors: Auditing Education Linked to the Pitfalls of Audit Practice. *Issues in Accounting Education*, 12 (2), pg. 537-560.

Lin, J. W., Li, J. F. & Yang, J. S. 2006. The Effect of Audit Committee Performance on Earnings Quality. *Managerial Auditing Journal*, 21 (9), pg. 921-933.

Lipsitz, S. R., Patzen, M. & Ewell, M. 1998. Inference Using Conditional Logistic Regression with Missing Covariates. *Biometrics*, 54 (1), pg. 295-303.

McColgan, P. 2001. Agency Theory and Corporate Governance: A Review of the Literature From a UK Perspective. *Department of Accounting and Finance, University of Strathclyde, Glasgow, Working Paper.*

McMullen, D. A. 1996. Audit Committee Performance: An Investigation of the Consequences Associated with Audit Committees. *Auditing,* 15 (1), pg. 87-101.

Makkawi, B. & Schick, A. 2003. Are Auditors Sensitive Enough to Fraud? *Managerial Auditing Journal,* 18 (6/7), pg. 591-598.

Mangena, M. & Pike R. 2005. The Effect of Audit Committee Shareholding, Financial Expertise and Size on Interim Financial Disclosures. *Accounting and Business Research*, 35 (4) pg. 327-349.

Matolcsy, Z., Stokes, D. & Wright, A. 2004. Do Independent Directors Add Value? *Australian Accounting Review,* 14 (1), pg. 33 - 40.

Maug, E. 1998. Large Shareholders as Monitors: Is there a Trade-Off Between Liquidity and Control? *The Journal of Finance*, 53 (1), pg. 65-98.

Mishra, C. S. & Nielsen, J. F. 1999. The Association Between Bank Performance, Board Independence, and CEO Pay-Performance Sensitivity. *Managerial Finance*, 25 (10), pg. 22-33.

Moldoveanu, M. & Martin, R. 2001. Agency Theory and the Efficient Design of Governance Mechanisms. *Rotman School of Management, University of Toronto, Working Paper.*

Morrison, J. 2004. Legislating for Good Corporate Governance: Do We Expect Too Much? *The Journal of Corporate Citizenship,* Autumn (15), pg. 121-133.

Morrison & Foerster. 2003. SEC Adopts Rules Requiring Disclosure of Audit Committee Financial Expert.

Morrow, J. 2005. Achilles' Heel: Management Override of Internal Controls a Weak Link in Fraud Prevention. *California CPA*, (March-April), pg. 1-2.

Myers, J., Myers, L. & Omer, T. 2003. Exploring the Term of Auditor-Client Relationship and the Quality of Earnings: A Case for Mandatory Auditor Rotation? *The Accounting Review*, 78 (3), pg. 779-799.

(NACD) National Association of Corporate Directors. 1999. *Report of the NACD Blue Ribbon Commission on Audit Committees: A Practical Guide*. Washington, D.C.: National Association of Corporate Directors.

(NASDAQ) The Nasdaq Stock Market. 2003. NASDAQ Corporate Governance Summary of Rules Changes.

(NCFFR) National Commission on Fraudulent Financial Reporting. 1987. *Report of the National Commission on Fraudulent Financial Reporting (Treadway Report)*. Washington, D.C.: US Government Printing Office.

Nieschwietz, R. J., Schultz, J. J. Jr. & Zimbelman, M. F. 2000. Empirical Research on External Auditors' Detection of Financial Statement Fraud. *Journal of Accounting Literature*, 19 (1), pg. 190-246

Niu, F. F. 2006. Corporate Governance and the Quality of Accounting Earnings: A Canadian Perspective. *International Journal of Managerial Finance*, 2 (4), pg. 302–327.

(NYSE) New York Stock Exchange. 2003. Final NYSE Corporate Governance Rules.

O'Sullivan, N. 2000. The Determinants of Non-Executive Representation on the Boards of Large UK Companies. *Journal of Management & Governance*, 4 (4), pg. 283-297.

Padilla, A. 2002. Property Economics of Agency Problems. *Economics Department, George Mason University, Working Paper*.

Padilla, A. 2003. Agency Theory, Evolution, and Austrian Economics. *Department of Economics, Metropolitan State College of Denver, Working Paper.*

Palmrose, Z. & Scholz, S. 2002. The Accounting Causes and Legal Consequences of Non-GAAP Reporting: Evidence from Restatements. *Contemporary Accounting Research Conference*.

Peasnell, K. V., Pope, P. F. & Young, S. 2005. Board Monitoring and Earnings Management: Do Outside Directors Influence Abnormal Accruals? *Journal of Business Finance & Accounting*, 32 (7/8), pg. 1311-1346

Pergola, T. M. 2005. Management Entrenchment: Can It Negate the Effectiveness of Recently Legislated Governance Reform? *Journal of American Academy of Business*, 6 (2), pg. 177-183.

Persons, O.S. 1995. Using Financial Statement Data to Identify Factors Associated With Fraudulent Financial Reporting. *Journal of Applied Business Research*, 11 (3), pg. 38-46.

Persons, O.S. 2005. The Relation Between the New Corporate Governance Rules and the Likelihood of Financial Statement Fraud. *Review of Accounting & Finance*, 4 (2), pg. 125-149.

Persons, O.S. 2006. Corporate Governance and Non-Financial Reporting Fraud. *The Journal of Business and Economic Studies*,12 (1), pg. 27-40.

Pesqueux, Y. 2004. A Critical View on Corporate Governance and Its Performance Measurement and Evaluation Systems. *Managerial Finance*, 30 (8), pg. 34-53.

Ragnunandan, K. & Rama, D. V. 1999. Auditor Resignations and the Market for Audit Services. *Auditing*, 18 (1), pg. 124-134.

Rahman, A. & Ali, F. H. M. 2006. Board, Audit Committee, Culture and Earnings Management: Malaysian Evidence. *Managerial Auditing Journal*, 21 (7), pg. 783–804.

Ramos, M. (2003). Auditors' Responsibility for Fraud Detection. *Journal of Accountancy*, 195 (1), pg. 28-36.

Read, W. J. & Raghunandan, K. 2001. The State of Audit Committees. *Journal of Accountancy*, 191(5), pg. 57-61.

Reynolds J. K. & Francis J. R. 2000. Does Size Matter? The Influence of Large Clients on Office-Level Auditor Reporting Decisions. *Journal of Accounting and Economics*, 30 (3), pg. 375-400.

Rezaee, Z., Olibe, K. O. & Minmie, G. 2003. Improving Corporate Governance: The Role of Audit Committee Disclosures. *Managerial Auditing Journal*. 18 (6/7), pg. 530- 537.

Richardson, S., Tuna, I. & Wu, H. 2002. Predicting Earnings Management: The Case of Earnings Restatements. *University of Pennsylvania, Working Paper*.

Ruigrok, W., Peck, S., Tacheva, S., Greve, P. & Hu, Y. 2006. The Determinants and Effects of Board Nomination Committees. *Journal of Management & Governance*,10 (2), pg. 119- 148.

Ryan, H. E. & Wiggins III, R. A. 2004. Who Is In Whose Pocket? Director Compensation, Board Independence, and Barriers to Effective Monitoring. *Journal of Financial Economics*, 73 (1), pg. 497-524.

Sack, S. E. 2004. Fraud Risk: Are You Prepared? *Journal of Accountancy*, 198 (3), pg. 57-62.

Saksena, P. 2001. The Relationship Between Environmental Factors and Management Fraud: An Empirical Analysis. *International Journal of Commerce & Management*, 11 (1), pg. 120-141.

(SEC) Securities and Exchange Commission. 1999. SEC Staff Accounting: No. 99 – Materiality.

(SEC) Securities and Exchange Commission. 2000. Proposed rule: Revision of the Commission's Auditor Independence Requirements. U.S. Securities and Exchange Commission.

(SEC) Securities and Exchange Commission. 2002. Pitt seeks review of corporate governance, conduct codes. Press release.

(SEC) Securities and Exchange Commission. 2003a. Report Pursuant to Section 704 of the Sarbanes-Oxley Act 2002.

(SEC) Securities and Exchange Commission. 2003b. Proposed Rule: Disclosure Required by Sections 404, 406 and 407 of the Sarbanes-Oxley Act of 2002. Release No. 34-46701.

(SEC) Securities and Exchange Commission. 2003c. Final Rule: Standards Relating to Listed Company Audit Committees. Release No. 34-47654.

(SEC) Securities and Exchange Commission. 2006. The Investor's Advocate: How the SEC Protects Investors, Maintains Market Integrity, and Facilitates Capital Formation.

Sekaran, U. 2003. *Research Methods for Business – A Skill Building Approach*. 4th Ed., New York: John Wiley & Sons, Inc.

Sharma, V. D. 2004. Board of Director Characteristics, Institutional Ownership, and Fraud: Evidence from Australia. *Auditing: A Journal of Practice and Theory*, 23 (2) pg. 105-117.

Shivdasani, A. & Yermack, D. 1999. CEO Involvement in the Selection of New Board Members: An Empirical Analysis. *Journal of Finance*, 54 (1), pg. 1829-1853.

Shleifer, A. & Vishny, R. 1997. A Survey of Corporate Governance. *The Journal of Finance*, 52 (2), pg. 737-783

Siagian, F. T. 2002. Earnings Manipulation and the Association Between CEO Bonus and Accounting Earnings. *Department of Accounting, University of Oregon, Doctoral Dissertation*.

Song, J. & Windram, B. 2004. Benchmarking Audit Committee Effectiveness in Financial Reporting International. *Journal of Auditing*, 8 (3), pg. 195–205.

Strier, F. 2005. Conflicts of Interest in Corporate Governance. *The Journal of Corporate Citizenship*, 19 (Autumn), pg. 79-90.

Swartz, N. 2006. Corporate Criminals Strike Out in 2005. *Information Management Journal*, 40 (2), pg. 10-11.

Tipgos, M. A. & Keefe, T. J. 2004. A Comprehensive Structure of Corporate Governance in Post-Enron Corporate America. *The CPA Journal*, 74 (12), pg. 46-50.

The Gale Group, Inc. 1998. Criminal Law. *West's Encyclopedia of American Law*. The Answers.com 14 Mar. 2007. http://www.answers.com/topic/criminal-law

Uzun, H., Szewczyk, S. H. & Varma, R. 2004. Board Composition and Corporate Fraud. *Financial Analysts Journal,* 60 (3), pg. 33-43.

Vafeas, N. 1999. Board Meeting Frequency and Firm Performance. *Journal of Financial Economics*, 53 (1), pg.113-142.

Vanasco, R. R.1994. The Audit Committee: An International Perspective. *Managerial Auditing Journal*, 9 (8), pg. 18-42.

Verschoor, C. 2001. *Audit Committee Briefing: Understanding the 21st Century Audit Committee and its Governance Roles.* Florida: The Institute of Internal Auditors.

Viton, P. L. 2003. Creating Fraud Awareness. *S.A.M. Advanced Management Journal*, 68 (3), pg. 20-23.

Vorhies, J. B. 2005. The New Importance of Materiality. *Journal of Accountancy*, 199 (5) pg. 53-58.

Ward, R. 2003. *Saving the corporate board: Why boards fail and how to fix them*. New York: John Wiley & Sons.

Webb, E. 2004. An Examination of Socially Responsible Firms' Board Structure. *Journal of Management and Governance*, 8 (1), pg. 255–277.

Willis, A. 2005. Corporate Governance and Management of Information and Records. *Records Management Journal*. 15 (2), pg. 86-97.

Windram, B. & Song, J. 2004. Non-Executive Directors and the Changing Nature of Audit Committees: Evidence from UK Audit Committee Chairmen. *Journal of Corporate Ownership & Control*, 1 (3), pg. 108–115.

Xie, B., Davidson, W. N. & DaDalt, P. J. 2003. Earnings Management and Corporate Governance: The Role of the Board and the Audit Committee. *Journal of Corporate Governance*, 9 (3), pg. 295-316.

Yang, J. S. (2002). Audit Committees and Quarterly Earnings Management. *Temple University, Ph.D Dissertation* (AAT 3079155).

Yeo, G. H. H., Tan, P. M. S., Ho, K. W. & Chen, S. S. 2002. Corporate Ownership Structure and the Informativeness of Earnings. *Journal of Business Finance & Accounting*, 29 (7&8), pg. 1023–1046.

Appendix A

Discussion on Regulatory Studies

1. The Report of the National Commission on Fraudulent Financial Reporting

The National Commission on Fraudulent Financial Reporting (NCFFR), also known as the Treadway Commission, was a private sector response to hearings held by a subcommittee of the US House of Representative's. These hearings pertained to aspects of the accounting profession, or more specifically, whether the audit system was meeting public expectations, and followed the failure of a number of US financial institutes in the mid 1980's. The subcommittee was tasked with determining whether corrective action was necessary for the then current system of public disclosure and financial reporting (Lange, u.d.).

The National Commission, which was co-sponsored by the American Institute of Certified Public Accountants (AICPA), the American Accounting Association (AAA), the Financial Executives Institute (FEI), the Institute of Internal Auditors (IIA), and the now Institute of Management Accountants (IMA), was formed in 1985 to study the financial reporting system in US public companies. Within this scope, the commission deemed its purpose was to distinguish causal factors that may contribute to fraudulent financial reporting and identify steps that could reduce its occurrence in the future. Three objectives were posed by the study. Firstly, to consider the forces and opportunities that may lead to fraudulent financial reporting and how this act could undermine the integrity of the reporting system. Secondly, to examine the role of the independent accountants in detecting fraud, and finally, to identify corporate structure attributes that may foster acts of financial reporting fraud or may contribute to the failure of promptly detecting such acts (NCFFR, 1987).

The Commission's findings, which were presented in 1987, were based on both alleged and proven cases of fraudulent financial reporting between 1981 and 1986. Amongst the cases, 119 related to charges laid by the SEC against public companies and 42 against independent public accountants. In addition, reviews of prior research, numerous interviews with experts, and comments received from the public were also used to supplement the findings of the research program.

The NCFFR study helped to provide an understanding of why financial reporting fraud may occur when they identified a number of characteristics surrounding this type of deceptive behaviour, including the fact that it usually transpires as the result of certain environmental, institutional, or individual forces and opportunities. The study found that,

> "A frequent incentive for fraudulent financial reporting that improves the company's financial appearance is the desire to obtain a higher price from a stock or debt offering or to meet the expectations of investors. Another incentive may be the desire to postpone dealing with financial difficulties and thus avoid, for example, violating a restrictive debt covenant. Other times the incentive is personal gain: additional compensation, promotion, or escape from penalty for poor performance" (NCFFR, 1987, pg.23).

In addition, the NCFFR identified that opportunities exist when fraudulent acts are relatively easy to commit and when detection is less likely. The Commission reported the absence of vigilant board of directors or audit committees; weak or nonexistent internal controls; unusual or

complex transactions; use of subjective judgment in accounting estimates; and the ineffectiveness of internal audit, as opportunities that may provide motivation to commit fraudulent financial reporting. Interestingly, it was concluded that the forces and opportunities that were present in fraud companies exist in all companies to some extent. In other words, no company is completely immune from the possible incidence of fraudulent financial reporting.

When studying the dimensions of previous cases of fraudulent financial reporting the Commission recognised that consistent with the motivations and opportunities identified, the majority of perpetrators held senior level management positions. Although the methods implemented by persons in positions such as the chief executive officer, president or chief financial officer to manipulate the financial results were varied, actions that tended to inflate or smooth earnings and/or overstate assets were predominant. Furthermore, it was found that while the initial fraudulent behaviour did not normally involve an overtly intentional act to distort, over time activities relating to the presentation of financial information became more and more questionable, eventually culminating in the occurrence of fraudulent financial reporting.

These findings were instrumental in the Commission recommending measures, which focused on the 'tone at the top'. As a fundamental obligation of a public company is full and fair disclosure of corporate and financial information to the public, it is paramount that this information be accurate and be presented by a reliable source. Therefore, because the ultimate responsibility for the financial reporting process resides first and foremost at the company senior management level it was deemed that, "Top management - starting with the chief executive officer - sets the tone and establishes the financial reporting environment" (NCFFR, 1987, pg.6). Accordingly, if the 'tone at the top' is deficient then the reliability of public disclosures with suffer.

One way in which the Commission sought to overcome this predicament and ensure that the right tone was set was to recommend that top management take time to evaluate what factors they consider could contribute to the occurrence of fraudulent financial reporting within their company. In this way ensuring that top management were more knowledgable and responsive to the characteristics that may lead to this deceptive behaviour. It was also recommended that "…all public companies should maintain internal controls that provide reasonable assurance that fraudulent financial reporting will be prevented or subject to early detection" (NCFFR, 1987, pg.11). And finally, the study proposed that the 'tone at the top' could be improved by the development and introduction of written codes of conduct to encourage an adequate standard of ethical behaviour by both management and employees alike.

The NCFFR also determined that the role of the independent accountant was vital in the detection and deterrence of fraudulent financial reporting and that Auditing Standards should better recognise this responsibility. In this regard they considered that the independent accountant, in their role as external auditor of the company, has an obligation to the public. This obligation exists because their responsibility extends further than just the contractual relationship between them and their client; it includes the organisation shareholders, creditors, customers and the rest of the investing public, insomuch as these individuals rely on the opinion provided by the auditor. Therefore, the adequacy of auditing regulations and standards to safeguard that public trust is of primary importance.

Research of earlier fraud cases indicated that where the independent accountant had charges laid against them it was due to an alleged failure to conduct the audit in accordance with Generally

Accepted Auditing Standards (GAAS). These failures were commonly caused by a lack of sufficient competent evidential material being obtained, resulting in deviations from GAAS. Thus the Commission recommended that GAAS needed to be amended to take into account the need for accountants to "…take affirmative steps to assess the potential for fraudulent financial reporting and design tests to provide reasonable assurance of detection. Among the affirmative steps recommended was assessment of the company's overall control environment along with improved guidance for identifying risks and designing audit tests" (NCFFR, 1987, pg.13). In determining the requirement to not only change the audit standards but also the processes by which these standards are set, the Commission considered that improved audit quality would expand the probability of auditors detecting the occurrence of fraudulent financial reporting.

2. The COSO Study

In 1999 the Committee of Sponsoring Organisations of the Treadway Commission (COSO) released a study aimed at providing an updated analysis and empirical evidence resulting from the examination of financial statement fraud occurrences in the US subsequent to the 1987 NCFFR study. The report, Fraudulent Financial Reporting 1987-1997: An Analysis of U.S. Public Companies, was designed to provide information that could be "…used to guide future efforts to combat the problem of financial statement fraud and to provide a better understanding of financial statement fraud cases" (COSO, 1999, pg.4). The findings presented by the study identified that fraud primarily occurred in smaller companies and invariably involved the very top management of the organisation. Apparent weaknesses within the audit committee and corporate boards of many fraud companies were also found to exist along with the fact that significant proportions of these companies were owned by founders and board members. Another insight related to the severe consequences suffered by companies found to have committed fraudulent financial reporting, many of which filed for bankruptcy, had significant changes in ownership or were delisted from national stock exchanges.

Similar to the NCFFR report, the COSO study analysed allegations of fraudulent financial reporting brought against entities by the SEC. The study used Accounting and Auditing Enforcement Releases (AAER's) to identify fraud cases, focusing predominantly on violations of the antifraud provisions found in section 17(a) of the 1933 Securities Act and rule 10(b)-5 under section 10 of the Securities Exchange Act 1934. Violations of these provisions were considered to represent the occurrence of fraudulent financial reporting and in this frame of mind any incidence of restatement caused strictly by error were not deemed to depict fraudulent activity and were therefore removed from further analysis.

Examination of the nature of the frauds committed by the final sample of 200 fraudulent companies included in the COSO study indicated that the total amount of each fraud was relatively large when compared with the size of the company involved. It was also found that the majority of fraud cases did not relate solely to a single fiscal period, many of the frauds affected at least two or more fiscal periods and involved the manipulation of both quarterly and annual financial statements. Furthermore, the most frequently used method of financial fraud was the overstatement of revenues and assets. Amongst the techniques used in the fraud cases examined, in excess of 50% overstated revenue by means of fictitious or premature recording of monies predominantly relating to transactions reported to have occurred towards the end of the financial period. Frauds involving overstatement of assets chiefly resulted from understated receivable allowances, overstated inventory values or other tangible assets (for example property, plant and equipment), or the recording of non existent assets.

In a manner akin to the NCFFR report, the COSO study also identified the significance of the control environment in combating fraudulent financial reporting and in this regard reflected that, "The importance of the organisation's control environment cannot be overstated…" (pg.8). The report stressed the import of monitoring the pressures faced by senior management, particularly those generated as a consequence of compensation plans or expectations of the investing public. In recognition of these pressures on management the COSO report suggested that, "Boards of directors and audit committees need to consider the potential for these pressures when designing executive compensation plans for key executives" (1999, p.42). It has been alleged that incentive based compensation plans, which are predominately tied to company performance, may encourage self-interest rather than promote the long-term shareholder goal of wealth maximisation. Incentive and opportunities for personal gain could be the driver that compels some executives to commit corporate fraud.

It was found that the nature of the company could also have some bearing on the incidence of fraudulent financial reporting, particularly given the findings that a number of fraud firms experienced periods of financial strain preceding the commencement of activities that resulted in fraud. The COSO report therefore proposed that to counter this implication "…effective monitoring of the organisation's going-concern status is warranted" (pg.8). In this realm of though it was acknowledged that "…management may face market pressures for short-term performance and corresponding pressures to satisfy market expectations…" (SEC, 2003_b, p.5).

Expectations such as those mentioned above have been found to bring about both appropriate and inappropriate behaviour in mangers. Executives may feel obligated to direct the company's operations in such a way as to achieve targeted results, and in endeavouring to do so may resort to fraudulent activities when legitimate business operations are not expected to produce satisfactory results. Management may also feel pressure to demonstrate that their leadership has resulted in a rise in shareholder value. The COSO report established that an emphasis on achieving or bettering forecast results could influence a manager to commit fraud.

3. Report and Recommendations of the Blue Ribbon Committee

The Blue Ribbon Committee (BRC) was made up of eleven members of various constituencies of the financial community, and sponsored by the New York Stock Exchange (NYSE) and the National Association of Security Dealers (NASD). Following the voicing of concern regarding the adequacy of audit committees, the BRC was charged with the task of recommending appropriate action that could be taken to strengthen the oversight role of audit committees, particularly in relation to the corporate financial reporting process. The BRC released their report and recommendations on improving the effectiveness of corporate audit committees in 1999.

While the report did not focus strictly on fraud per se, it did consider that many of its recommendations might aid in reducing the possibility of fraud. Accordingly, it was considered that "…a more transparent and reliable financial reporting process ultimately results in a more efficient allocation of and lower cost of capital. To the extent that instances of outright fraud, as well as other practices that result in lower quality financial reporting, are reduced with improved oversight…" (BRC, 1999, pg.19).

The BRC furthermore believed that one of the principal factors underpinning oversight lies in the board, or its appointed committees, working together with management to achieve corporate

legal and ethical compliance. In this regard an audit committees oversight responsibilities were taken to include "ensuring that quality accounting policies, internal controls, and independent and objective outside auditors are in place to deter fraud, anticipate financial risks and promote accurate, high quality and timely disclosure of financial and other material information to the board, to the public markets, and to shareholders" (BRC, 1999, pg.20). These responsibilities confirm the establishment and functioning of an audit committee is vital to the financial reporting process, particularly in view of the ever-increasing complexity of many financial transactions, together with the intricacies trading in a global marketplace affords. It was found that issues such as these suggest not only that the oversight role of the audit committee was critical at the present time, but would become even more so as the monitoring of financial implications resulting from management decisions grows progressively more complex in the future.

Ten recommendations were developed and proposed by the BRC, amongst them the issue of independence was addressed. The BRC recognised that board of directors from which audit committees are sourced "…must perform active and independent oversight to be, as the law requires, a fiduciary for those who invest in the corporation" (BRC, 1999, pg.6). The BRC contented that an independent director, without financial, family or other personal ties, was more capable of objectively evaluating the suitability of management's accounting, internal control, and reporting practices. It would therefore follow that this type of independent objectivity might provide even greater benefits when considering the occurrence of financial statement fraud.

Further recommendations by the BRC addressed the audit committees minimum size and competence. To effectively discharge their oversight responsibilities it was recommended that an audit committee be made up of a minimum of three solely independent members. Each audit committee member was furthermore required to be at a minimum financially literate, whilst at least one member had to be capable of providing expertise in accounting or related financial management. It was deemed that financial literacy was the ability to read and understand fundamental financial statements, while accounting expertise was resolved to include prior employment experience in finance or accounting, a CPA certification, or comparable experience. Comparable experience was benchmarked as that of a CEO or other senior officer position with financial oversight responsibilities.

The BRC's intensive study also made several recommendations in relation to the implementation of a formal audit committee charter, and issues relating to communications between the committee and the external auditor. The report noted that the responsibilities of the audit committee should include being actively involved in the selection and retention of the external auditor, and accordingly evaluate the auditors independence from the company and its management. The efficacy of the audit committee was also determined to be reliant on communication between the committee and the external auditor, such that the auditor's judgement on the quality and acceptability of the accounting principals and financial records are capable of being openly discussed. It was additionally considered that discussions between these two parties should include "such issues as the clarity of the company's financial disclosures and degree of aggressiveness or conservatism of the company's accounting principles and underlying estimates…" (BRC, 1999, pg.15).

Disclosure and transparency is at the heart of the US capital markets, it is therefore a board's, or more appropriately an audit committee's, responsibility to ensure full and fair disclosure of a

company's true financial performance. This performance should be presented in such a way as to not deceive or manipulate the public, enabling capital investors to make informed investing decisions based on accurate and transparent financial information. The BRC opined that engaging in accounting games, which by nature can lead to financial misrepresentations and fraud, might equate to a short-term fix but they invariably achieve nothing for the long-term financial credibility of the company.

4. Statement on Auditing Standards No. 99

In an attempt to repair some of the damage caused by fraudulent financial reporting the American Institute of Certified Public Accountants launched a 'comprehensive anti-fraud and corporate responsibility program'. One component of this program has been the issuance of Statement on Auditing Standards No. 99 (SAS 99); Consideration of Fraud in a Financial Statement Audit, which came into effect on the 15 December 2002.

While SAS 99, which superseded SAS 82, does not increase the auditor's responsibility to detect fraud it is more far-reaching and significantly expands the information gathering phase from that that would have been performed to satisfy the requirements of its predecessor. Under SAS 99 the auditor remains "…responsible for planning and performing the audit to obtain reasonable assurance that financial statements are free of material misstatements due to fraud" (SAS 82). The new standard does however introduce some new concepts and specific requirements to be undertaken, as well as providing greater guidance on what is required of auditors to discharge their duty. SAS 99 is aimed at achieving audit practices that encourage continuous consideration of fraud throughout the entire audit process.

The key provisions of SAS 99 include an increased emphasis on professional scepticism and the requirement to undertake more open and candid discussions with management in regard to fraud. Also included in the key provisions is the need to enhance the unpredicability of audit tests by specifically designing tests that will be unexpected by the client. In addition, the key provision addressed the need for auditors to be more responsive to the risk of financial statement fraud occurring as a result of internal controls being overridden by management. To be capable of fulfilling the requirements of the new standard it has been said that auditors will need to show greater professional scepticism and enhance their auditing skills, especially in the art of interviewing. "Auditors must ask the right questions and question the answers, and obtain audit evidence that supports the answers. Moreover, auditors who identify fraud risks must know how to change audit procedures to handle the situation" (The CPA Letter, 2002, pg.1). It was found to be essential that auditors maintain a questioning mindset whilst ensuring audit evidence is critically evaluated, particularly in relation to the possible occurrence of fraudulent activities.

Whereas auditors have always been required to understand their clients business operations and its systems of internal control, SAS 99 additionally requires auditors to view these systems in the context of fraud prevention and detection. The breath and depth of the auditors understanding of the clients business, as well as the industry within which they operate, was also mentioned as a area that needed to be enhanced upon. "Under SAS No. 99, auditors' understanding of the entity's business should be sufficient to allow them to identify unusual transactions outside the normal course of business" (Ramos, 2003, pg.9).

The expansion of the audit skills and knowledge required by external auditors in their fight to successfully combat fraud and fulfil the requirements of SAS 99 is fairly comprehensive.

However, failure to detect fraudulent financial reporting during the course of an audit can expose the auditor to adverse legal and/or regulatory consequences. This could result in the auditor suffering both substantial litigation costs and irreparable damage to their reputation. This auditing standard requires auditors to plan and perform audits with a questioning mind, recognising the possibility that fraud may be present. Furthermore, the increased emphasis on identifying financial statement fraud necessitates amendments to the audit approach to ensure adequate fraud detection procedures are undertaken. SAS 99 demonstrates the continuing importance to both the profession and society of the auditor's responsibility for the detection of material fraudulent financial reporting.

Appendix B

Variable Definitions

Variable	Definition
Audit Committee Functionality Variables:	
NmbACMem	Number of Audit Committee Members
NmbIndAC	Number of Independent Audit Committee Members
%IndAC	Percentage of Independent Audit Committee Members
NmbACFE	Number of Audit Committee Financial Experts
%ACFE	Percentage of Audit Committee Financial Experts
NmbACMeet	Number of Audit Committee Meetings
AvgACTen	Average Audit Committee Member Tenure
AvgACDtrships	Average Audit Committee Member Directorships in other companies
Board of Director Composition Variables:	
NmbDtrs	Number of Directors on the Board
NmbIndDtrs	Number of Independent Directors on the Board
%IndDtrs	Percentage of Independent Directors on the Board
CEO=Chair	Dummy/Indicator Variable coded 1 if the Company CEO is also the Chairman of the Board, and 0 otherwise
NomExist	Dummy/Indicator Variable coded 1 if the Company has a Nominating Committee, and 0 otherwise
NmbNomMem	Number of Nominating Committee Members
Ownership Structure Variables:	
%InsDtrOwn	Percentage of Inside Director Ownership
%OutDtrOwn	Percentage of Outside Director Ownership
NmbOutBlock	Number of Outside Blockholders
%OutBlockOwn	Percentage of Outside Blockholder Ownership
External Auditor Factors:	
Big6Aud	Dummy/Indicator Variable coded 1 if the Company's External Auditor is one of the Big6 Accounting Firms, and 0 otherwise
AudTen	Number of Years the External Auditor has been retained by the Company
Control Variables:	
Total Assets	Total Assets (in Millions) in the year preceding the initial year of fraud
Leverage	Total Debts in the year preceding the initial year of fraud divided by Total Assets
Age	Dummy/Indicator Variable coded 1 if the Company has been listed on one of the US National Stock Exchanges for 5 years or more, and 0 otherwise
Growth	Average Change in Total Assets for the 2 year period preceding the initial year of fraud

Appendix C

Sample Descriptions

PANEL A

ALL COMPANIES						
Variable	**n**	**Minimum**	**Mean**	**Median**	**Maximum**	**Std. Deviation**
NmbACMem	152	1	3.26	3.00	6	0.995
NmbIndAC	152	1	3.07	3.00	6	1.114
%IndAC	152	33.33	93.5636	100.0000	100.00	15.70170
NmbACFE	152	0	0.47	0.00	2	0.650
%ACFE	152	0.00	14.3530	0.0000	66.67	19.92721
NmbACMeet	152	0	3.31	3.00	13	2.091
AvgACTen	152	1.00	5.9146	5.3300	21.50	3.87005
AvgACDtrships	152	0.00	2.1341	2.0000	8.00	1.46601
NmbDtrs	152	4	8.18	7.00	20	3.196
NmbIndDtrs	152	1	5.43	5.00	16	2.766
%IndDtrs	152	20.00	65.3140	66.6667	91.67	16.31611
CEO=Chair	152	0	0.66	1.00	1	0.474
NomExist	152	0	0.38	0.00	1	0.487
NmbNomMem	152	0	1.61	0.00	12	2.376
%InsDtrOwn	152	0.01	14.3627	8.0300	72.13	16.54256
%OutDtrOwn	152	0.00	2.0782	0.8450	24.10	3.50509
NmbOutBlock	152	0	1.66	1.00	7	1.590
%OutBlockOwn	152	0.00	15.0037	10.9500	89.70	15.86780
AudTen	152	1	5.55	1.00	72	11.601
Big6Aud	152	0	0.91	1.00	1	0.290
Total Assets	152	6.287	6,543.22783	249.57873	306,577.000	32,626.908141
Leverage	152	0.000	20.71616	13.96760	151.686	24.956518
Age	152	0	0.45	0.00	1	0.499
Growth	152	-29.897	955.46851	23.42009	101,771.250	8,358.129910

PANEL B

FRAUD COMPANIES						
Variable	**n**	**Minimum**	**Mean**	**Median**	**Maximum**	**Std. Deviation**
NmbACMem	76	1	3.26	3.00	6	1.038
NmbIndAC	76	1	3.05	3.00	6	1.176
%IndAC	76	33.33	92.8289	100.0000	100.00	16.95532
NmbACFE	76	0	0.45	0.00	2	0.700
%ACFE	76	0.00	13.7061	0.0000	66.67	21.32743
NmbACMeet	76	0	3.20	3.00	13	2.286
AvgACTen	76	1.00	5.8179	5.4150	14.00	3.41637
AvgACDtrships	76	0.00	2.2641	2.0000	7.00	1.44092
NmbDtrs	76	4	7.80	7.00	20	3.319
NmbIndDtrs	76	1	5.00	4.00	12	2.713
%IndDtrs	76	20.00	63.0550	65.1515	90.00	16.81829
CEO=Chair	76	0	0.76	1.00	1	0.428
NomExist	76	0	0.32	0.00	1	0.468
NmbNomMem	76	0	1.36	0.00	11	2.273
%InsDtrOwn	76	0.04	14.6932	7.7800	69.79	17.12479
%OutDtrOwn	76	0.00	1.5539	0.8700	9.12	2.03182
NmbOutBlock	76	0	1.80	2.00	7	1.600
%OutBlockOwn	76	0.00	16.8626	12.1300	56.73	15.92675
AudTen	76	1	4.67	1.00	53	9.276
Big6Aud	76	0	0.88	1.00	1	0.325
Total Assets	76	6.458	7,033.67361	249.57873	306,577.000	35,582.049511
Leverage	76	0.000	20.48805	16.17556	149.920	23.399644
Age	76	0	0.49	0.00	1	0.503
Growth	76	-14.714	485.96785	30.65267	15,770.304	1,995.664746

PANEL C

NONFRAUD COMPANIES						
Variable	**n**	**Minimum**	**Mean**	**Median**	**Maximum**	**Std. Deviation**
NmbACMem	76	1	3.26	3.00	6	0.957
NmbIndAC	76	1	3.08	3.00	6	1.055
%IndAC	76	33.33	94.2982	100.0000	100.00	14.41518
NmbACFE	76	0	0.50	0.00	2	0.600
%ACFE	76	0.00	14.9999	0.0000	66.67	18.54116
NmbACMeet	76	0	3.42	3.00	9	1.885
AvgACTen	76	1.00	6.0113	5.3300	21.50	4.29695
AvgACDtrships	76	0.00	2.0042	2.0000	8.00	1.48881
NmbDtrs	76	5	8.55	8.00	19	3.044
NmbIndDtrs	76	2	5.86	5.00	16	2.770
%IndDtrs	76	33.33	67.5729	68.3333	91.67	15.58152
CEO=Chair	76	0	0.57	1.00	1	0.499
NomExist	76	0	0.45	0.00	1	0.501
NmbNomMem	76	0	1.86	0.00	12	2.464
%InsDtrOwn	76	0.01	14.0322	8.9200	72.13	16.04623
%OutDtrOwn	76	0.00	2.6025	0.8200	24.10	4.47768
NmbOutBlock	76	0	1.53	1.00	5	1.579
%OutBlockOwn	76	0.00	13.1447	7.8500	89.70	15.69289
AudTen	76	1	6.42	1.00	72	13.542
Big6Aud	76	0	0.93	1.00	1	0.250
Total Assets	76	6.287	6,052.78206	243.98034	255,018.000	29,608.344584
Leverage	76	0.000	20.94427	11.43799	151.686	26.576515
Age	76	0	0.41	0.00	1	0.495
Growth	76	-29.897	1,424.96918	14.25705	101,771.250	11,671.276621