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THE IMPACT OF INTERNAL CORPORATE GOVERNANCE STRUCTURES ON FIRM PERFORMANCE: EVIDENCE FROM PUBLICLY LISTED SOUTH AFRICAN COMPANIES

by

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WITS BUSINESS SCHOOL

at the

UNIVERSITY OF THE WITWATERSRAND

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DECLARATION AND COPYRIGHT

I, ***Johannes Tshipa***, declare that the research work reported in this dissertation is my own, except where otherwise indicated and acknowledged. It is submitted for the degree of Master of Management in Finance and Investment at the University of the Witwatersrand, Johannesburg. This thesis has not, either in whole or in part, been submitted for a degree or diploma to any other universities. I further declare that all sources cited or quoted are indicated and acknowledged by means of a comprehensive list of references.

Johannes Tshipa

Signed at----------

On this---------- day of----------2013

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ABSTRACT

This study contains the findings of an examination conducted on the relationship between internal corporate governance structures and firm performance of those firms listed on South African Johannesburg Stock Exchange (JSE). Employing a sample of 137 South African (SA) listed firms from 2002 to 2011 (a total of 1370 firm-year observations) and corporate governance data collected directly from those companies' annual reports, the study seeks to determine the extent to which SA-JSE listed companies comply with King II recommendations of corporate governance and to ascertain whether such compliance necessarily translates into higher financial performance. Different from previous studies, the internal corporate governance-financial performance nexus is investigated over a 10-year panel study. In addition, the study uses accounting and market measures, return on assets (ROA) and Tobin's Q respectively, as proxies for financial performance.

The findings suggest that the level of compliance has risen significantly over the period of examination, from 2002, when King II was adopted. However, substantial differences in the standards of corporate governance among SA listed firms still exist. Distinct from prior studies, an analysis was done of bothsmall and large companies to compare the respective levels of compliance. Notably, the results indicate that the level of compliance in large companies is relatively higher than that in small companies. In addition, the results also reveal that larger firms exhibit higher firm value as a result of higher compliance levels than their smaller counterparts.

Results based on the multiple regressions provide mixed results on the impact of internal corporate governance on firm performance. First, regardless of the financial performance measure used, board size is statistically significant and positively related to both accounting measure (ROA) and market measure (Tobin's Q). Secondly, Chief Executive Officer (CEO) non-duality is statistically significant and positively associated with both proxies of performance measures. Thirdly, an independent non-executive director is only statistically significant and positively correlated with Tobin's Q. This could mean that the market perceives independent non-executive directors as a good practice to reduce agency problems. Fourthly, the presence of key internal board committees such as nomination, remuneration and audit is statistically significant and negatively related to ROA, but insignificant to Tobin's Q.

Finally, board gender diversity, director share-ownership and frequency of board meetings have no impact on firm performance.

As far as control variables are concerned, leverage, big 5 industry, big 4 audit firm size and firm size are statistically significant in both measures of firm performance. Interestingly, the findings also reveal that in South African firms only 9 per cent of board members are women.

Findings based on a series of robustness or sensitivity analyses suggest that the empirical results are generally reported to be robust to potential endogeneity problems. In addition, the sample size is large enough to generalise the results. Empirical results indicate conclusively that internal governance mechanisms do have material effects on a firm's performance.

DEDICATION

This thesis is dedicated to my beautiful wife, Pauline Refilwe Tshipa and two wonderful daughters, Keamogetswe Tshipa and Onthatile Tshipa for their encouragement and unconditional support. Thank you for bearing with me during the last four years that I have often been absent from home, working on the degree in Master of Business Administration (MBA) and recently working towards the degree in Master of Management Finance and Investment (MMFI). I am confident that you will continue to support me as I embark on the daunting PhD journey in 2013.

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DEFINITIONS OF TERMS AND ABBREVIATIONS

Before progressing further, it is deemed appropriate to briefly define and explain some key terms and abbreviations that are used throughout this dissertation.

Corporate governance is a very broad term. The study concentrates only on 'internal' or 'narrow' corporate governance structures. As a result, corporate governance is defined as "a system by which companies are directed and controlled" (Cadbury Report, 1992).

'JSE Ltd' or the 'JSE' is the name of the stock exchange in South Africa. It is the only stock market in South Africa. The abbreviation 'SA' will refer to the country, 'South Africa'.

The term 'King I' refers to the 1994 King Report on Corporate Governance for South Africa, while 'King II' refers to the 2002 King Report on Corporate Governance for South Africa.

Finally, the term CEO duality and CEO non-duality is used interchangeably. The former is used when the roles of board chairperson and CEO are combined. The latter is used when roles of the board chairperson and CEO are separated, meaning occupied by two different people.

CHAPTER 1: SUMMARY

1.1 Introduction

The study generally seeks to explore the relationship between internal corporate governance structures and firm performance. Section 1.2 presents the context of the study; section 1.3 the research problem; section 1.4 the research objectives; section 1.5 the research questions; section 1.6 research contributions; section 1.7 significance of the study; section 1.8 the research method and section 1.9 the organisation of the dissertation.

1.2 Context of the study

African stock markets are small when compared to stock markets in other emerging markets. Each is dominated by a few large firms that represent a high proportion of total market capitalisation. The number of listed firms is relatively small, except in South Africa, Egypt and to some extent Nigeria. Despite the problems of small size and low liquidity, returns on African markets have generally been high. Senbet (2008) asserts that after controlling for risk (i.e Sharpe ratio) returns are similar to those realised in Latin America and Asia, even after the results have been converted into dollars.

South Africa, as an African emerging market, offers an interesting research context in which the corporate governance-financial association can be empirically examined. Unlike most African countries, South Africa appears to possess a relatively sound financial and corporate regulatory structure reminiscent of that of the UK. As is the case in the UK (Mallin, 2007), corporate governance seems to be improving steadily.

Also, unlike most African countries, South Africa has a deep equity culture comparable with those of other emerging and developed economies (Deutsche Bank, 2002). For instance, according to World Economic Forum (WEF), 2012/2013, South Africa was ranked 1st out of 142 countries for its regulation of securities' exchanges, 1st out of 144 countries for protection of minority shareholders' interests and 10th out of 141 countries for strength of investor protection.

This is the second successive year that South Africa has achieved such ranking, and together with several other elements of the report, this suggests that the country's stock exchange is a sound environment in which to invest. Therefore, Johannesburg Stock Exchange in South Africa is the natural choice for this study, as it dominates the African region in terms of market capitalisation.

In addition, South Africa is home to a host of multinational companies and the gateway to most African countries. For example, Forbes (2009) ranking of the largest 2000 companies by market value in the world, indicates that over 30 multinational companies are based in South Africa. Furthermore, on average, South African companies attract over $6 billion in foreign direct investments annually, mainly from large UK and US institutional investors and pension funds (Armstrong, Segal and Davis, 2006). This implies that unlike most African countries, any local corporate governance failures are likely to have serious implications far beyond South Africa and even Africa.

1.2.1 Recent corporate governance reforms in South Africa

South Africa (SA) was the first developing country to introduce a corporate governance (CG) code in the form of the 1994 King Report (Mallin, 2007). The recommendations of the 1994 King Report (hereafter King I) were heavily informed by those of the UK's Cadbury Report of 1992 (Mangena and Chamisa, 2008). For example, and in line with the Cadbury Report, King I adopted an Anglo-American style of a unitary board of directors, consisting of executive and non-executive directors (NEDs), who are primarily accountable to shareholders. Also, SA firms were required to split the roles of chairperson and Chief Executive Officer (CEO) and to set up audit, nomination and remuneration committees with at least two non-executive directors as board members.

Similar to stipulations in the Cadbury Report, King I was appended to the JSE Listings Rules with a voluntary (comply or explain) compliance regime. King I was reviewed in 2002 (thereafter referred to as King II).

A major feature of the 2002 King Report (hereafter King II) that distinguishes it from other Anglo-American CG Codes is that it adopted an 'inclusive' approach to CG (West, 2006, 2009). While King II maintains and strengthens the Anglo-American (shareholding) features (such as voluntary compliance regime, unitary board and majority independent non-executive directors), substantial SA context specific affirmative action and stakeholder demands (stakeholding), aimed at addressing the lingering negative social and economic legacies of Apartheid are 'formally' imposed on listed firms. These include employment equity (EE), black economic empowerment (BEE), environment and HIV/Aids. This compliance compels SA firms to display some of the key characteristics of both the 'shareholding' (Anglo-American) and 'stakeholding' (Continental European-Asian) models of CG and renders the SA CG model a 'hybrid' or unique within the Anglo-American world (Mallin, 2007; Andreasson, 2009).

1.3 Research problem

Corporate failures and massive corporate scandals such as those of Enron Corporation (Corp)., WorldCom Incorporated (Inc). and Global Crossing Limited (Ltd), among others, have raised concerns about the ability of the board to monitor management (Petra, 2006). According to Petra (2006), the actual board governance structure of the above three companies were as follows:

- Enron Corp. – maintained a board with the proportion of outside independent directors ranging from 50 per cent to 55 per cent.
- WorldCom Inc. – maintained a board with the proportion of outside independent directors ranging from 40 per cent to 50 per cent.
- Global Crossing Ltd – maintained a board with the proportion of outside independent directors ranging from 25 per cent to 45 per cent.

It is interesting to note that while only Enron Corp. had a majority of outside independent directors, in all three companies representivity by outside independent directors was evident. Despite the presence of these directors, all three companies suffered breakdowns in their corporate governance systems as a result of the failure of the outside independent directors and indeed the entire board, to fulfil their oversight function responsibilities.

South Africa has had its fair share of high-profile corporate governance failures since 1994. These failures include Macmed, Saambou, Leisurenet and Regal Treasury Bank (Armstrong *et al.*, 2006). In these, accounting fraud is directly related to weak corporate governance (Berkman, Zou and Heng, 2009). More recently, according to Times Live (2011), Cricket South Africa (CSA) was also embroiled in a corporate scandal in which senior CSA employees, led by their CEO, were found to have allegedly paid themselves bonuses that were not approved by the board. These corporate scandals call into question the monitoring capability of the relevant boards.

The scandals and disputes that have dogged corporate entities both domestically and globally have created concern that governance structures are inadequate. Certainly in South Africa, this concern has manifested itself at all levels, in both public and private companies. Consequently, public confidence in corporate governance structures and the ability of corporate boards to monitor and control management's actions have sunk to very low levels.

In spite of the grave concern, studies of African emerging markets are few and far between. This has invariably led to limitations in understanding domestic corporate governance issues and making comparisons to other countries. As pressure from institutional investors to beef up corporate governance structures mount, it has become crucial to understand the relationship between corporate governance and firm performance, as well as the compliance levels of publicly listed firms. This pressure is exacerbated by scandal-weary investors around the world who are demanding corporate governance reforms. Failure to heed the call for reform, could potentially damage investor confidence, stunt development of capital market and ultimately increase the cost of raising capital.

There is an ongoing debate on whether better corporate governance leads to better firm performance or not. Khatab, Masood, Zaman, Saleem and Saeed (2011) conclude that firms that have good corporate governance measures perform well when compared to the firms that have no or fewer corporate governance practices. However, there is no substantial evidence to suggest that better corporate governance enhances firm performance (Klein, Shapiro and Young, 2005).

As a result, investors are sceptical about the existence of the link between good governance and performance indicators and "for many practitioners and academics in the field of corporate governance, this remains their search for the Holy Grail – the search for the link between returns and governance" (Bradley, 2004).

In attempting to address the preceding research problem, the following research objectives are pursued.

1.4 Research objectives

The purpose of this study is to investigate the relationship between internal corporate governance structures andfirm performance in the context of South Africa as an African emerging market. Specifically, the objectives of the research are as follows:

- to examine the determinants of corporate governance in line with King II report;
- to examine the level of corporate governance compliance among publicly listed firms;
- to compare the levels of corporate governance compliance between large and small firms; and
- to examine whether compliance to corporate governance as recommended by King II report translates into higher firm performance.

1.5 Research questions

The dissertation seeks to answer the following research questions empirically:

- first, what is the level of compliance with the corporate governance provisions of King II among South African listed firms?
- secondly, what is the level of compliance with the corporate governance provisions of King II between small and large firms?
- finally, what is the relationship between internal corporate governance structures and the firm performance of publicly listed firms in South Africa? Specifically, what is the relationship between corporate governance and firm performance?

1.6 Research contributions

Despite South Africa arguably offering an exciting research context, there is a dearth of rigorous empirical research that attempts to ascertain whether better-governed South African listed firms tend to be associated with higher financial returns than their poorly-governed counterparts (Okeahalam, 2004; Mangena and Chamisa, 2008; Ntim, 2011). The paucity of rigorous empirical corporate governance studies in South Africa offers opportunities to make contributions to the existing literature.

There are a limited number of cross-country studiesof South African listed firms that need to be acknowledged. These studies are: Klapper and Love (2004); Durnev and Kim (2005); Chen, Zhihong and Wei (2009); Morey, Gottesman, Baker and Godridge (2009) and Ntim (2011). However, their findings have limitations, therefore the results cannot be generalised. For instance, Klapper and Love (2004) and Durnev and Kim (2005) used Credit Lyonnais Securities Asia's (CLSA) 2000 subjective analysts' corporate governance ratings to examine the corporate governance-financial performance association in a sample of emerging markets that included South Africa. Chen*et al*. (2009) also used the same CLSA subjective analysts' corporate governance rankings to investigate the relationship between corporate governance and the cost of equity capital. Similarly, using a cross country sample that includes South Africa, Morey *et al*. (2009) analysed the nexus between the Alliance Bernstein's subjective analysts' corporate governance ratings and firm value. The results of these studies indicate that, on average, better-governed firms tend to be associated with higher financial returns or tend to have significantly lower cost of equity capital than their poorly-governed counterparts. This has been corroborated by Ntim (2011) in his 5-year panel study of the impact of corporate governance on firm performance.

As will be discussed further in section 4.4.1 of chapter four, all five cross-country studies display a number of limitations. First, all earlier studies except that of Ntim (2011), make use of subjective analysts' corporate governance ratings. A major problem with subjective analysts' corporate governance rankings is that they are based purely on analysts' perceptions of corporate governance quality rather than on a direct investigation into of companies' annual reports (Beattie, McInnes and Fearnley, 2004). Significantly, prior studies suggest that subjective analysts' corporate governance ratings tend to be biased towards large firms (Botosan, 1997; Hassan and Marston, 2008).

The CLSA (2000) corporate governance ranking that was mainly been used in earlier studies, for example, includes only nine of the largest South African listed firms (CLSA, 2000). This fact makes the sample used in earlier studies less representative, thereby limiting the generalisation of their findings to South African listed firms. Secondly, the existing literature suggests that corporate governance structures and systems operating in different countries vary (West, 2006; Aguilera and Cuervo-Cazurra, 2009; Filatotchev and Boyd, 2009). However, subjective analysts' corporate governance rankings are standardised therefore they are unable to reflect institutional, cultural and contextual differences in corporate governance structures operating in individual countries and systems.

Finally, despite increasing concerns that the presence of endogenous problems can confound research findings (Himmelberg, Hubbard and Palia, 1999; Chenhall and Moers, 2007a and b), with the exception of Durnev and Kim (2005) and Ntim (2011), previous cross-country studies that include South Africa, do not explicitly address potential problems that may be caused by the existence of an endogenous relationship between corporate governance and financial performance. This also calls into question the reliability of the results of previous cross-country studies that include South Africa.

This study hopes to make several new contributions to the existing corporate governance literature. First, the study aims to offer, for the first time, direct evidence on the relationship between internal corporate governance structures and firm performance in South Africa based on a 10-year panel study.As will be explained in section 4.2 ofchapter four, unlike previous cross-country studies, the sample iscomposed in such a way that it is representative of all publicly listed firms, taking into account all ten South African industries. This, together with a 10-year panel study may enhance generalisation of the findings.

Secondly, none of the studies has drawn a distinction between non-executive directors and independent non-executive directors. Paragraph 2.2 of the King Report 2002 states that the majority of the non-executive directors should also be independent of management so that shareholders' interests (including minority interests) can be better protected. This study has accommodated this recommendation by distinuguishing between independent non-executive directors and outside directors.

Finally, and unlike earlier studies, problems that the potential presence of endogeneity could cause are comprehensively mitigated through the use of a longer examination period (10-year panel study). In addition to addressing potential endogenity problems, sensitivity tests are conducted to ensure the robustness of the results. As a result, this study aims to fill the gap in our knowledge by providing robust value to the scant existing literature on corporate governance in South Africa.

1.7 Significance of the study

Although academic research has focused on the association between corporate governance and firm performance, these studies have mostly investigated firms operating in developed economies, particularly in the US. Vafeas and Theodorou (1998) suggest that the US results regarding the board-performance relationship should not be generalised. They argue that while the assumption of a utility-maximizing agent is universal, each country's regulatory and economic environment, the strength of capital markets and current governance practices differ (Vafeas and Theodorou, 1998). Different business environments, it is claimed, create distinctive corporate governance needs, therefore comparing US models in isolation can lead to meaningless conclusions (Dehaene, De Vuyst and Ooghe, 2001).

The US institutional environment is commonly cited as being characterised by strong legal protection (La Porta, Lopez-De-Silanes and Shleifer, 1999), which eventually leads to a dispersed ownership and active institutional investors, as well as a large, deep and active market (Erickson, Park, Reising and Shin, 2005). This setting facilitates the simultaneous operation of internal and external governance mechanisms thereby reducing the self-interest behaviour of agents (Brunello, Graziano and Parigi, 2003). Authors such as Matolcsy, Stokes and Wright (2004) believe that a departure from the US setting has a significant impact on the firm-level governance structure, its efficiency, and consequently, its impact on firm value. Vafeas and Theodorou (1998) argue that the importance and value of various governance structures should be examined individually in each country.

The differences between institutional settings in South Africa and in developed countries could be attributed to the investor protection provided by the legal system, the ownership structure, the financing pattern and the market for corporate control.

Consequently, the findings of this study could be of significance to a variety of readers such as: (1) academics, scholars or students who are interested in, or wish to conduct research on, the relationship between corporate governance and firm performance in emerging markets; (2) domestic and international investors seeking a potential investment destination in South Africa due to increasing portfolio inflows as well as foreign direct investment; (3) the main custodians of corporate governance, namely the Institute of Directors for Southern Africa (IoDSA) and South African Institute of Charted Accountants (SAICA) in re-designing their training and development programmes; (4) publicly listed firms as well as private businesses seeking to list on the stock exchange; (5) organisation such as the World Bank, World Economic Forum (WEF) and the International Monetary Fund(IMF); (6) the Johannesburg Stock Exchange, policy-makers and relevant bodies who need to initiate corporate governance reforms and provide guidance to SA firms.

1.8 Research method

The starting point for the data collection was the companies listed on JSE on January 2002, the year King II came into effect. This study used panel data consisting of 137companies listed on the JSE from 2002 to 2011. The 10-year period was selected as it obviates endogeneity problems experienced by many previous studies. The Ordinary Least Squares (OLS) was employed to investigate the relationship between firm performance and various internal corporate governance measures. The dependent variable is the firm performance accounting measure, return on assets (ROA) and market measure, Tobin'Q. The independent variables are board size, frequency of board meetings, proportion of independent non-executive directors, board gender diversity, presence of internal key board committees such as nomination, audit and remuneration, CEO non-duality, and director share-ownership. The control or omitted variables are leverage, firm size, big 4 audit firm and big 5 industry.

1.9 Organisation of the study

The rest of the thesis is divided into sevenchapters and organised as follows:

A review of the theoretical and empirical internal corporate governance-financial performance relationship literature ispresented in chapter two. Specifically, agency theory is adopted as the main theoretical framework for the study.

However, and in line with recent studies (Van Ees, Gabrielsson and Morton, 2009; Filatotchev and Boyd, 2009), where appropriate, agency theory is supplemented with information asymmetry, managerial signaling and stewardship as well as organisational, political cost and resource-dependence theories.

Hypotheses are developed in chapter three based on the review of each variable and recommendations made by King II. Chapter four discusses the research method, namely the sources of data and methodology, that are applied in the empirical parts of the study. Finally, the chapter discusses methodological limitations imposed and data-collection difficulties encountered in this study.

Chapter five presents a summary descriptive statistics of the dependent (financial performance), independent (corporate governance) and other independent (control) variables. Chapter six starts by testing theOLSassumptions of multicollinearity, autocorrelation, normality, homoscedasticity and linearity. In addition, testing of hypotheses are conducted. Chapter seven contains the conclusion of the study. A summary of the key research findings and a discussion of the policy implications, recommendations, contributions, limitations, as well as potential avenues for future research and improvements are included.

Chapter summary

The chapter provided a summary of the dissertationas well as a brief outline of the remaining chapters. The chapter elaborated on the research problem, research objectives as well as focused on the motivation and the significance of this study. The next chapter reviews the existing literature.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This chapter discusses the existing theoretical literature on internal corporate governance. Specifically, it attempts to offer a review of the existing theoretical literature that tries to link internal corporate governance structures to firm performance.Section 2.2 presents the principal underlying theorieson which the study is based.

2.2 Internal corporate governance principal underlying theories

Theories underlying corporate governance have been drawn from a variety of disciplines, such as accounting, economics, finance and law, among others (Mallin, 2007; Solomon, 2007; Durisin and Puzone, 2009). As a result, past studies have adopted several theoretical perspectives. These include agency, resource-dependence, managerial signaling and legitimacy, as well as organisational, political cost, stakeholder, stewardship and transaction cost economies theories.

In this study, and as in many others that are reviewed in this chapter, corporate governance is approached from a finance perspective, using a quantitative research methodology. Central to corporate governance reforms pursued in South Africa is an attempt to improve the agency relationship between managers and owners of firms (King Reports, 1994, 2002; Armstrong *et al*., 2006). In fact, much of the prior research on corporate governance that has been carried out is based on agency theory (Filatotchev and Boyd, 2009). Agency theory is, therefore, adopted as the principal underlying theory.

However, given the complex nature of corporate governance, and in line with earlier studies (Kiel and Nicholson, 2003; Haniffa and Hudaib, 2006), as well as recent calls for the adoption of multiple-theoretical approach to corporate governance research (Van Ees *et al*., 2009; Filatotchev and Boyd, 2009), where applicable, agency theory is complemented with information asymmetry and managerial signalling, as well asorganisational, political cost, stewardship and resource-dependence theories. This gives the study a multiple-theoretical orientation.

In the next subsection, agency theory is discussed in detail. Specifically, the general principal-agent construct ispresented in subsection 2.2.1.1. Subsection 2.2.1.2 describes its direct application to the shareholder-manager relationship in modern corporations. Finally, the supporting theories of information asymmetry and managerial signalling, stewardship and resource-dependence are briefly described in subsections2.2.2.1., 2.2.2.2 and 2.2.2.3 respectively.

2.2.1 Agency theory

An agency relationship is defined as one in which one or more persons (the principal(s)) engage another person (the agent) to perform some service on their behalf which involves delegating some decision-making authority to the agent (Jensen and Meckling, 1976). Since stakeholders hire managers to apply their investment in acompany's activity, an information asymmetry occurs because management has the competitive advantage of possessing more information of the company than the owners (Zubaidah, Nurmala and Kamaruzaman,2009).

2.2.1.1 The general principal-agent construct

This relationship is known to be plaguedby two major interdependent problems: (1) information asymmetry between the principal and the agent, whichis dealt with in subsection 2.2.2.1; and (2) the possibility of a conflict or a divergence of interests between the principal and the agent (Hill and Jones, 1992). The latter agency problem arises from three major assumptions. First, it is assumed that the principal and the agent could have different attitudes towards risk-bearing (Eisenhardt, 1989). Secondly,intrinsicallythe principal and the agent could have different goals and interests (Eisenhardt, 1989). Finally, both parties in the relationship are assumed to be utility maximisers (opportunistic) to the extent that even if their goals or risk preferences donot differ inherently, *ceteris paribus*, there can be reason to believe that the rational agent will not always act in the best interests of the principal (Jensen and Meckling,1976).

Agency theory is generally concerned with aligning conflicting interests of principals and agents (Jensen and Meckling, 1976; Fama, 1980). This implies that the principal(s) can limit divergence from their interests by establishing appropriate incentives or control mechanisms to limit the incidence of opportunistic action by the agent (Jensen and Meckling, 1976).

Jensen and Meckling (1976) suggest that the establishment ofthese control mechanisms generates three unavoidable major costs. First, the principal can institue a monitoring system (monitoring costs) aimed at reducing the aberrant activities of the agent. This may include efforts by the principal to control the behaviour of the agent through contractual agreements regarding budget restrictions, compensation policies and operating rules, among others. Secondly, the principal may require the agent to spend resources (bonding costs) to guarantee that agent will not take certain actions that could harm the principal. That is, the agent may *ex-ante* incur bonding costs in order to win the right to manage the resources of the principal (Hill and Jones, 1992). Finally, despite instituting monitoring and bonding mechanisms (governance structures), there will still be some divergence between the agent's decisions and those decisions which will ensuremaximal welfare of the principal. This is defined as residual loss.

In short, the sum of the principal's monitoring expenses, the agent's bonding expenses and any remaining residual loss is known as agency costs (Jensen and Meckling, 1976).The next subsection examines how this general principal-agent construct can be directly applied to the shareholder-manager relationship within a modern corporation.

2.2.1.2 The shareholder-manager relationship in modern corporations

The recognition of the shareowner-managerial conflict arising from the internal organisation of modern corporations in which ownership and control are separate, dates as far back as the eighteenth century (Smith, 1976).In his Wealth of Nations, for example, Adam Smith raises doubts about the ability of joint stock companies to serve their owners:

"*The directors of such companies, however, being the managers of other people's money than of their own, it cannot be well expected, that they should watch over it with the same vigilance with which the partners in a private co-partnery frequently watch over their own. Like stewards of a rich man, they are apt to consider attention to small matters as not for their master's honour, and very easily give themselves a dispensation from having it*".

In response, Jensen and Meckling (1976) put forward a formally developed agency theory aimed at bringing the interests of managers (agents) of modern corporations into alignment with those of shareholders (principals). They identify four major ways inwhich utility or self-interestedmaximising managers can incur costs that may reduce the wealth of shareholders. First, managers may expropriate corporate resources by awarding themselves over-generous remuneration (pecuniary) packages (Jensen and Meckling, 1976). Secondly, they may expropriate corporate wealth by electing to consume more perquisites (non-pecuniary), which maximise their own utility (Jensen and Meckling, 1976). Thirdly, managers may choose to invest excess cash flow (the free cash flow problem) rather than to pay dividends even in the absence of profitable investment opportunities (Jensen, 1986). Finally, managers may choose to invest less time, effort, personal skill and/or ingenuity in value-maximising activities, such as looking for new profitable investment opportunities (Jensen and Meckling, 1976).

To limit divergence of managerial interests from shareholders and reduce the above agency costs, agency theory suggests the establishment of internal and external mechanisms through what is known recently as corporate governance (Haniffa and Hudaib, 2006). Internally and by incurring monitoring costs, agency theory recommends the institution of several internal corporate governance structures via a set of legal contracts by shareholders to monitor managers. As discussed further below, these internal corporate governance structures may be either behaviour-oriented (board and auditing structures) or outcome-oriented (salaries, stock options and shareholding) (Eisenhardt, 1989).

First, shareholders can institute a set of hierarchical board structure variables to monitor the behaviour of managers (Fama, 1980). Secondly, shareholders can impose formal internal control systems, such as auditing and budget restrictions to control managerial misbehaviour (Jensen and Meckling, 1976). Thirdly, shareholders can also design incentive remuneration systems which serve to align managers' interestsmore closely with theirs, including rewarding managers on the basis of their performance (Jensen and Meckling, 1976).Finally, by incurring bonding costs, managers are obliged to sign contractual guarantees that insure shareholders against malfeasance on their part (Jensen and Meckling, 1976). These may include: (1) having the financial accounts audited by independent public auditors; (2) appointing independent non-executive directors to monitor managers; and (3) imposing minimum managerial shareholding to align interests with shareholders (Jensen and Meckling, 1976).

Externally,agency theory relies on efficient factor markets (corporate control and managerial labour) to govern or discipline internal managerial misbehaviour (Fama, 1980). First, there exist efficient internal and external managerial labour markets, which exert pressure on firms to rank and remunerate managers according to their performance (Fama, 1980). Fama (1980) contends that internally there is often competition among top managers to become 'boss of bosses'. There is also competition between top managers and lower managers who think they can gain by replacing shirking or less competent managers above them. This creates intrinsic vertical and horizontal monitoring of managers by managers themselves.

Denis and McConnell (2003) argue that there are benefits to separating ownership and control, otherwise such an economic structure is highly unlikely to have lasted as long as it has. It could also be because it is extremely difficult to find individuals who are endowed with both managerial talent and financial capital. Therefore, the ability to separate ownership and control enables the holder of either type of endowment to earn a return on it. Also, the ability to raise capital from outside investors allows firms to take advantage of the benefits of size, despite managerial wealth constraints or managerial risk aversion.

To sum up, agency theory posits that a net reduction in agency costs (monitoring, bonding and residual loss) resulting from the institution of these internal corporate governance structures should help to increase firm value and/or improve financial performance (Shabbir and Padget, 2008). This overriding theory underpins the recommendations of a raft of corporate governance reports in many countries (Cadbury, 1992; OECD Principles, 1999; King Reports, 1994, 2002). It has also been the major motivation behind an established body of empirical research that attempts to link internal corporate governance structures to afirm's performancethrough the use of empirical econometric models based on some equilibrium assumptions (Agrawal and Knoeber, 1996; Yermack, 1996; Weir, Laing and McKnight, 2002; Haniffa and Hudaib, 2006; and Guest, 2009, among others).

In the next subsection, and given the complex nature of corporate governance, information asymmetry and managerial signalling, stewardship and resource-dependencetheories are briefly discussed as supporting theories to agency theory. First, these theories have been selected because they are closely related to agency theory. This means that they may help togain greater insight into the agency relationship between shareholders and managers of firms.

Secondly, and as will be discussed below, earlier studies (Donaldson and Davis, 1991, 1994; Kiel and Nicholson, 2003; Haniffa and Hudaib, 2006; Yammeesri and Herath, 2010; Arora, 2011; Tornyeva and Wereko, 2012 and Sheikh, Wang and Khan, 2013,among others) that have positively approached the subject of corporate governance from a finance perspective have also viewed these theories as being complementary to agency theory.

2.2.2 Internal corporate governance supporting theories

Earlier studies have relied on information asymmetry and managerial signalling as supporting theories to explain the link between shareholders (principals) and managers (agents) in a modern corporation (Black, Jang and Kim, 2006a; Kapopoulos and Lazaretou, 2007; Shabbir and Padget, 2008). This implies that managers as insiders typically have much more information, including private information. Below is a discussion on the three supporting theories:

2.2.2.1 Information asymmetry and managerial signalling theory

Information asymmetry suggests thatmanagers as insiders typically have much more information, including private information about their companies than shareholders or prospective shareholders (Kapopoulos and Lazaretou, 2007). In this regard, and in making portfolio decisions, prospective shareholders in particular arefaced with two problems. First, potential investors face the problem of selecting firms with the most capable management (adverse selection) (Rhee and Lee, 2008). Secondly, and just is the case with agency theory, they are confronted with the problem of ensuring that managers do not use their superior information to extract excessive perquisites or toinvest in unprofitable projects (moral hazard) (Kapopoulos and Lazaretou, 2007).

Jensen and Meckling (1976) assert that faced with asymmetric information and market uncertainty, rational prospective shareholders have two possible options. First, they may either choose to take into consideration the potential costs of adverse selection and moral hazard in pricing a security of a firm. Or secondly, they may choose not to make an investment.In this case, whichever option prospective shareholders choose is likely to have a negative impact on the cost of outside equity capital for firms.

To minimise the selection dilemma facing investors, better-governed firms (firms with the least adverse selection and moral hazard problems) will have to find ways in which they can credibly signal their quality to prospective shareholders. A foolproof way in which firms can credibly signal their quality to the market or prospective shareholders, is to adopt good corporate governance rules.

In theory, by electing to comply with the recommendations of a code of good corporate governancepractice, a firm will signalto investors that it is well-governed. This indicates that insiders will handle their investments responsibly, and by implication operate in the interestsof shareholders. As a corollary, investors will bid-up share prices because with better corporate governance, they are likely to receive a greater portion of their firms' profits as opposed to those being expropriated by managers (La Porta, Lopez-De-Silanes, Shleifer and Vishny, 2002; Beiner, Drobetz, Markus and Zimmermann, 2006).As equity values rise, the cost of outside equity capital can be expected to fall (Black *et al*., 2006a; Shabbir and Padget, 2008; Chen *et al*., 2009). For example, by appointing independent non-executive directors to the board, a firm signals to potential investors its intention of treating them fairly, and, for that matter,tosafeguard their investment. In this regard, by signalling (disclosing) its better governance practices to investors, a firm reduces information asymmetry. This is likely to lead to an increase in the share price and firm value for existing shareholders due to the potential increase in the demand for its shares (Deutsche Bank, 2002; Black *et al*., 2006a; Black, Love and Rachinsky, 2006b).Equally, an increase in a firm's share price should, *ceteris paribus*, result in a reduction in the cost of outside equity capital (Botosan, 1997; CLSA, 2000).

2.2.2.2 Stewardship theory

Contrary to agency theory, information asymmetry and signaling, the stewardship theory posits that executive managers are intrinsically trustworthy individuals (Nicholson and Geoffrey, 2003). It follows that managers should be fully empowered to run firms, because they are good stewards of the resources entrusted to them (Letza, Sun and Kirkbride, 2004). Furthermore, the stewardship theory makes several assumptions about the behaviour of senior managers. First, it assumes that since top managers usually spend their entire working lives in the companies that they govern, they are more likely to understand the businesses better than outside directors and can therefore make superior decisions (Donaldson and Davis, 1991).

Secondly, executive managers possess superior formal and informal information and knowledge about the firms they manage, which should lead tobetter decision-making (Donaldson and Davis, 1994). As a result, proponents of the stewardship theory contend that better financial performance is likely to be associated with internal corporate governance practices thatafford managers greater powers, such as combining the positions of company chairperson and CEO (Donaldson and Davis, 1991, 1994).

2.2.2.3 Resource-dependence theory

Resource-dependence theory is the final supporting theory of corporate governance that this study relies on. It suggests that the institution of internal corporate governance structures, such as boards of directors is not necessary only for ensuring that managers are effectively monitored, but that they also serve as an essential link between the firm and the critical resources that are needed to maximise financial performance (Pfeffer, 1973).

First, the board and non-executive directors, in particular,are able to offer essential resources, such as expert advice, experience, independence and knowledge (Haniffa and Cooke, 2002). Secondly, they can bring to the firm reputable and critical business contacts (Haniffa and Hudaib, 2006). Thirdly, the board is able to facilitate access to business/political elite, information and capital (Nicholson and Geoffrey, 2003).Finally, the board provides a critical link between a firm's external environment and significant stakeholders, such as creditors, suppliers, customers and competitors. As a result, it is argued that a larger number of links to the external environment are associated with better access to resources (Nicholson and Geoffrey, 2003). This connection can impact positively on firm performance.

Chapter summary

Thischapter attempted to describe the theoretical motivationfor the study. Following earlier studies and suggestions, as well as, given the complex nature of corporate governance, the study adopts a multiple-theoretical perspective. These theories include agency, information asymmetry and managerial signalling, stewardship and resource-dependence. The next chapter examines the theoretical link between various corporate governance measures and firm performance. From the empirical evidence and King II report, hypotheses for this study are developed.

CHAPTER 3: DEVELOPMENT OF HYPOTHESES

3.1 Introduction

Following the implications of agency theory, existing literature has attempted to establish an empirical association between internal corporate governance structures and firm performance. This chapter sets out the hypothesesto be tested in this study. Previous studies in US and Europe concentrated on several aspects of governance such as board size (Kajola, 2008), board composition (Judge, Naoumova and Koutzevol, 2003; Bhagat and Bolton, 2008), Chief Executive Officer (CEO)/chairperson duality and tenure (Judge *et al*., 2003; Bhagat and Bolton, 2008) and board activities (Conger, Finegold and Lawler, 1998; Vafeas, 1999).

The rest of the chapter is structured as follows. Section 3.2 presents the theoretical link between board size and financial performance, section 3.3 the theoretical relationship between frequency of board meetings and financial performance and section 3.4 the theoretical nexus between independent non-executive directors and financial performance. The theoretical association between board gender diversity and financial performance nexus is discussed in section 3.5.Section 3.6 examines the theoretical relationship between presence of internal key board committees and financial performance, section 3.7 deals with the theoretical link between CEO non-duality and financial performance, section 3.8 explores the theoretical association between director share-ownership and financial performance and section 3.9 presents applicable control variables.

3.2 Board size(BS)

i. Theoretical link between board size and financial performance

Corporate board size is considered to be one of the most important board structure variables. As a corollary, the existing literature seeks to provide a theoretical and empirical nexus between corporate board size and firm performance with mixed results (Lipton and Lorsch, 1992; Yermack, 1996; Ranasinghe, 2010).One theoretical (agency theory) generalisation is that larger boards are bad, while smaller boards are good and effective at improving financial performance (Lipton and Lorsch, 1992; Liao, Li and Wu, 2006; Cheng, 2008; Lin and Cheng, 2011).

First, this is because while they plan, organise, direct and control the business of the organisation, the size of the board has financial implications. Secondly, Jensen (1993) argues that when a board gets too large, it does not only become difficult to co-ordinate activities of directors, but also comparatively easy to be controlled by a dominant CEO, due to associated director shirking and free-riding. Thirdly, it is contended that smaller boards are more likely to be cohesive, and to have more fruitful discussions. This is so because all directors are able to contribute and express their ideas and opinions within the limited time available (Lipton and Lorsch, 1992; Lin and Cheng, 2011). Finally, Yawson (2006) argues that larger boards suffer from higher agency problems and are far less effective than smaller boards. Thus, it seems that limiting corporate board size may lead to improved efficiency.

Anopposing theoretical view (agency and resource-dependence) is that larger boards may possibly be better for corporate financial performance (John and Senbet, 1998; Yawson, 2006; Coles, Lemmon and Meschke, 2007). First, larger boards are associated with a wider diversity in skills, business contacts and experience that smaller boards may not have, thereby offeringincreased opportunity to secure critical resources (Haniffa and Hudaib, 2006). Secondly, larger boards have a greater knowledge base on which business advice can be sought, thereby increasing managerial ability to make important and better business decisions (Yawson, 2006). Finally, a corporate board's monitoring capacity is deemed to be positively linked to board size (John and Senbet, 1998).

ii. Recommendations of the Companies' Act, the JSE's Listings Rules and King II

According to the South African Companies' Act 71 of2008, all public companies must have a minimum of three directors, while the JSE's Listings Rules mandate listed firms to have a minimum of four directors. None of them sets a maximum board size. King II does not specify the number of directors that should form a board. However, it puts out a general principle that every board needs to consider whether its size renders it effective. This suggests that even though King II admits that a company's board size could probably affect its performance, it leaves the choice of actual board size to the companies themselves. A possible explanation for not prescribing a specific board number is to avoid a tacit conclusion that it is possible to adopt a "one-size-fits-all" approach to corporate management (MacNeil and Xiao, 2006). Therefore, the hypothesis to be tested is:

Hypothesis 1: *There is a statistically significant positive relationship between board size and firm performance, as proxied by both ROA and Tobin's Q.*

3.3 Frequency of board meetings (FBMs)

i. Theoretical link between frequency of board meetings and performance

The association between frequency of board meetings and firm performance is another internal corporate governance issue that gives reasonfor concern among policy-makers and researchers. There are two theoretical views on this issue: those who are in favour of higher frequency of board meetings and those who are not (Lipton and Lorsch, 1992; Jensen, 1993). One theoretical contention is that frequency of board meetings measures the intensity of a board's activities and the quality or efficacy of its monitoring (Conger *et al*., 1998). It isargued that regular meetings allow directors more time to confer, to set strategy and to appraise managerial performance (Vafeas 1999). Directors remain informed and knowledgeable about important developments within the firm, thereby placing them in a better position to address emerging critical problems as they arise (Mangena and Tauringana, 2006).

An opposing theoretical view is that board meetings do not necessarily benefit shareholders. First, Vefeas (1999a) argues that generally the limited time directors spend together is not always used for meaningful exchange of ideas among themselves. Instead, routine tasks, such as presentation of management reports and various formalities take up valuable time during which little time is left for outside directors to monitor management effectively (Lipton and Lorsch, 1992). Secondly, board meetings are costly in terms of management time lost, travel expenses, refreshments and directors' meeting fees (Vafeas, 1999).

ii. Recommendations of King II and the JSE's Listings Rules

King II and the JSE's Listings Rules task each South African listed firm to have in place a policy for frequency, purpose, conduct and duration of board of directors' and board subcommittee' meetings. Specifically, King II recommends that the board of directors should sit at least once a quarter although frequency of meetings should however be determined by specific circumstances within the company.

This implies that King II views a greater frequency of board meetings as impacting positively on firm performance. Therefore,the hypothesis to be tested is as follows:

Hypothesis 2:There is a statistically significant positive relationship between frequency of board meetings and firm performance, as measured by both ROA and Tobin's Q.

3.4 Proportion of independent non-executive directors (INEDs)

i. Theoretical link between the proportion of INEDs and financial performance

According to IoDSA (2012) an independent non-executive director is a non-executive director who: (1) is not a representative of a shareholder who has the ability to control or significantly influence management or the board; (2) does not have a direct or indirect interest in the company (including any parent or subsidiary in a consolidated group with the company) which exceeds 5 per cent of the group's total number of shares in issue; (3) does not have a direct or indirect interest in the company which is less than 5 per cent of the group's total number of shares in issue, but is material to his personal wealth;(4) has not been employed by the company or the group of which it currently forms part in any executive capacity, or appointed as the designated auditor or partner in the group's external audit firm, or senior legal adviser for the preceding three financial years; (5) is not a member of the immediate family of an individual who is, or has during the preceding three financial years, been employed by the company or the group in an executive capacity; (6) is not a professional adviser to the company or the group, other than as a director; (7) is free from any business or other relationship (contractual or statutory) which could be seen by an objective outsider to interfere materially with the individual's capacity to act in an independent manner, such as being a director of a material customer of or supplier to the company; and (8) does not receive remuneration contingent upon the performance of the company.

There are two theoretical views with regard to INEDs: those who are in favour of a majorityof INEDs on corporate boards and those who prefer a majority of executive directors. Those who support a large number ofINEDs on the board usually base their arguments on three theories: agency, resource independence and information asymmetry and signalling. First, INEDs bring independent judgment to board decisions (Cadbury Report, 1992; Chhaochharia and Grinstein, 2009).

Secondly, they offer the firm resources in the form of experience, expertise, business contacts and reputation (Haniffa and Hudaib, 2006; Baranchuk and Dybvig, 2009). Thirdly, the existence of competitive and efficient managerial labour markets both within and outside the firm ensures that INEDs perform their monitoring function effectively (Fama, 1980; Fama and Jensen, 1983a). Finally, it is argued that the appointment of INEDs helps to reduce information asymmetry by credibly signalling insiders' intent to treat outside or potential shareholders fairly, and by implication, safeguard their investment (Black *et al*., 2006a). As a result, proponents of this view believe that a higher percentage of INEDs on corporate boards will improve financial performance.

However, relying on the stewardship theory, opponents argue that corporate boards dominated by INEDs may impact negatively on performance (Bozec, 2005). This problem is exacerbated by the fact that outside directors are usually part-timers who sit on boards of other companies as well (Bozec, 2005; Jiraporn, Singh and Lee, 2009).Consequently,they are left with too little time to attend to their monitoring and advisory duties. Generally, outside directors will usually not have the same access to informal sources of information and knowledge inside the firm. As a result, decisions made by a board dominated by INEDs would be of lower quality, and this in turn could lead to poor firm performance. Furthermore, it is argued that corporate boards dominated by outside directors tend to stifle managerial initiative and strategic actions, which arise from excessive managerial supervision (Haniffa and Hudaib, 2006).

ii. Recommendations of South African Companies' Act, King II and the JSE's Listings Rules

The South African Companies' Act 71 of2008 requires every public company to appoint at least threeoutside directors. King II and the JSE Listings Rules also require South African corporate boards of directors to consist of a majority of NEDs. King II further recommends a majority of non-executive directors, of whom most should be independent of management. This suggests that King II expects firms with more INEDs on their boards to perform financially better than those with less INEDs. Therefore the third respective hypothesis to be tested in this study is:

Hypothesis 3:There is a statistically significant positive relationship between the percentage of independent NEDs and firm performance, as measured by both ROA and Tobin's Q.

3.5 Board gender diversity (BGD)

i. Theoretical link between board gender diversity and financial performance

One of the most significant internal corporate governance issues currently facing companies in South Africa is board diversity and its impact on corporate performance. Board diversity is broadly defined as the various attributes that may be represented among directors in the boardroom in relation to board process and decision-making. These include age, gender, ethnicity, culture, religion, constituency representation, independence, knowledge, educational and professional background, technical skills and expertise, commercial and industrial experience, career and life experience (Van der Walt and Ingley, 2003). This study addresses board diversity in terms of gender, irrespective of race.

Thereare mixed theoretical utteranceson the impact of board diversity on shareholder value: those who argue for greater diversity in boardrooms and those who favour corporate monoculture and boardroom uniformity.Proponents of diversity in corporate boardrooms usually base their arguments on agency, resource-dependence, signalling and stakeholding theories (Goodstein, Gautum and Boeker, 1994; Carter, Simkins and Simpson, 2003).

First, agency theory suggests that board members from diverse backgrounds rather than from homogeneous elite groups with similar socio-economic backgrounds, increaseboard independence and lead to improved executive monitoring (Van der Walt and Ingley, 2003). Secondly, a diversity of ideas, perspectives, experience and business knowledge is brought to the decision-making process in boardrooms (Baranchuk and Dybvig, 2009). This can lead to aheightened appreciation of the complexities of the corporate external environment and marketplace.Thirdly, resource-dependence theory indicates that board diversity helps to link a firm to its external environment and to secure critical resources, such as skills, business contacts, prestige and legitimacy (Goodstein *et al*., 1994). Fourthly, Rose (2007) assertsthat a higher degree of board diversity may send out a positive signal to potential job applicants.

However, according to agency and organisation theories, opponents contend that board diversity can impact negatively on firm performance. First, it is suggested that a more diverse board will not necessarily result in more efficient monitoring and better decision-making.This is because diverse board members from diverse backgrounds may be appointed as tokens, and as such their contributions may be marginalised (Rose, 2007). Secondly, organisation theory indicates that diversity within the board may significantly constrain its efforts to take decisive action and initiate strategic changes, especially in times of poor corporate performance and environmental turbulence (Goodstein, *et al*., 1994). Thirdly, a diversity of board members couldmean that they bring their individual and constituencies' interests and commitments to the board (Baysinger and Butler, 1985). Finally, Rose (2007) argues that the idea that company boards should be constituted to reflect all important stakeholders and society as a whole, is incompatible with the notion of business.

ii. Recommendations of the JSE's Listings Rules and King II

With regard to board gender diversity, King II and the JSE's Listings Rules do not set any specific targets for firms. However, it is suggested that each company should consider whether its board is diverse enough in terms of skills (profession and experience) and demographics (age, ethnicity and gender). This is intended to ensure that the composition of South African corporate boards reflects the diverse South African population, as well as making them effectual. It follows that King II expects board diversity to have positive impact on the financial performance of firms. As a result, the hypothesisto be tested is as follows:

Hypothesis 4:There is a statistically significant positive relationship between board gender diversity and firm performance, as proxied by both ROA and the Tobin's Q.

3.6 Presence of internal key board committees (PCom)

i. Theoretical link between internal key board committees and financial performance

Existing literature suggests that board committees help to improve the efficacy and efficiency of corporate boards (Jiraporn *et al*., 2009). Key among them are auditing, remuneration or compensation and nomination committees.

In fact, almost every corporate governance code of the modern era has called for the institution of these board committees (Cadbury Report, 1992; and King Reports, 1994, 2002, among others). Despite their increasing popularity, however, there are still conflicting theories on the nexus between monitoring board committees and financial performance.

One theory postulatesthat establishment of these committees can impact positively on performance (Harrison, 1987; Sun and Cahan, 2009). First, unlike the main board or operating committees, monitoring board committees are usually entirely composed of INEDs, making them better placed to protect shareholders' interests by efficientscrutiny of managerial actions (Klein, 1998; Vefeas, 1999b). Secondly, these meetings provide sufficient time for meaningful dialogue and consensus decisions can be reached more quickly (Karamanou and Vefeas, 2005). Thirdly, based on their composition, board committees are able to bring individual director' specialist knowledge and expertise to bear on the board decision-making process (Harrison, 1987). Finally, board committees enhance corporate accountability, legitimacy and credibility by performing specialised functions (Weir *et al*., 2002).

In contrast, others maintain that board committees impact negatively on firm performance. First, the existence of board committees imposes extra costs in terms of management time, travel expenses and additional remuneration for the members (Vefeas, 1999a). Secondly, it manifests in excessive managerial supervision, which in turncould inhibit executive initiative and vision (Goodstein, *et al*., 1994; Conger *et al*., 1998; Vefeas, 1999a and b).

ii. Recommendations of the Companies' Act, King II and the JSE's Listings Rules

The South African Companies' Act 71 of2008 requires every public company to establish an audit committee, which must consist of at least two outside directors. Similarly, King II and the JSE's Listings Rules require South African listed firms to institute audit, remuneration and nomination committees. They specify that each committee should be chaired by an INED and be composed either entirely of INEDs (in the case of the remuneration committee) or by a majority of INEDs (in the case of audit and nomination committees). Furthermore, audit committee members must be financially literate and each committee should be chaired by a person other than the chairperson of the board.

This implies that King II expects that the establishment of board committees may directly or indirectly impact positively on firm performance. Therefore, the respective fifthhypothesis to be tested in this study is:

Hypothesis 5:There is a statistically significant positive relationship between the presence of audit, remuneration and nomination committees and firm performance, as proxied by both ROA and the Tobin's Q.

3.7 CEO non-duality (CND)

i. Theoretical link between CEO non-duality and financial performance

Another crucial monitoring mechanism based on agency perspective is the separation of the roles of CEO from that of thechairperson (William, Judge and Koutzevol, 2003).In general, CEO duality refers to a situation when a firm's CEOalso serves as the chairperson of the board of directors. Conversely, non-duality is a leadership structure which separates the roles of the board chairperson and CEO. There are three theoretical propositions regarding non-duality of a CEO: stewardship, resource-dependence and agency theories. Stewardship and resource-dependence theories suggest that role duality can have a positive impact on firm performance. First, Weir *et al*. (2002) contend that as an insider, the CEO tends to have a wider knowledge, a greater understanding and more experience of the strategic challenges and opportunities, which the company faces,than a non-executive chairperson. Secondly, it is argued that role duality grants a charismatic CEO the opportunity to have a sharper focus on firm objectives (Haniffa and Hudaib, 2006; Sheikh *et al*., 2013).

By implication a visionary CEO will have the chance to shape the long-term fortunes of a firm with minimal board interference (Haniffa and Cooke, 2002). This may lead to improved performance due to rapid management decision-making that flows from the provision of clear and unambiguous corporate leadership (Haniffa and Hudaib, 2006). Thirdly, Vafeas and Theodorou (1998) assert that role duality means that extra compensation is not paid to the chairperson. Finally, Bozec (2005) argues that unified firm leadership associated with role duality improves managerial accountability as it makes it easier to charge the blame for poor performance.

Other theoretical (agency) literature suggests that CEO non-duality can impact positively on firm performance (Lipton and Lorsch, 1992; Jensen, 1993; Ehikioya, 2009). Agency theorists argue that separating the two roles will help to increase board independence by providing effective checks and balances on managerial behaviour (Lipton and Lorsch, 1992; Haniffa and Cooke, 2002). It is also suggested that separating the two roles (CEO non-duality) will enable the board to remove a non-performing CEO (Jensen, 1993).

ii. Recommendations of King II and the JSE's Listings Rules

King II and JSE's Listings Rules state explicitly that the positions of the chairperson and the CEO should not be held by the same individual (CEO non-duality). Furthermore, the chairperson must be independent, as defined in subsection 3.3.3.2 of chapter three by the Code. The chairperson is responsible for the efficient functioning of the board while the CEO is responsible for running the company's business. Theseroles should be clearlydefined. This suggests that King II recognises CEO non-duality as a desirable development and as good corporate governance practice.Therefore, the respective sixthhypothesis to be tested in this study is:

Hypothesis 6:There is a statistically significant positive relationship between CEO non-duality and firm performance, as proxied by both ROA and Tobin's Q.

3.8 Director share-ownership (DEQTY)

i. The theoretical link between director share-ownership and financial performance

Director ownership of shares is another internal corporate governance mechanism that has been proposed as a possible solution to the agency problem. According to Jensen and Meckling (1976), conflict between shareholders and managers could arise because managers hold less than 100 per cent of the residual claim. Therefore, they do not capture the entire gain from their profit-enhancement activities, but they do bear the entire cost of these activities. Owing to this, they may put less effort into managing firm resources and attempt to transfer firm resources for personal gain. This inefficient practice may be reduced when managers own the large fraction of the firm's equity.

ii. Recommendations of the King II and the JSE's Listings Rules

King II and the JSE's Listings Rules donot set any ownership requirements for directors. However, King II suggests that performance-related elements of directors' remuneration, such as stock options shouldconstitute a substantial portion of their total remuneration package in order to align theirinterests with those of shareholders. It should also be designed to provide incentives todirectors to perform at the highest operational levels. This indicates that King II expectsdirector share-ownership to have a positive impact on firm performance. Hence, the respective seventh hypothesis to be tested in this study is as follows:

Hypothesis 7:There is a statistically significant positive relationship between director share-ownership and firm performance, as proxied by both ROA and the Tobin's Q.

3.9 Control variables

The econometric model employed controls for the following variables: firm size (measured by taking the natural logarithm total firm assets), leverage (measured by the ratio of total debt to assets),big 4 audit firm size (a dummy one if firm audited by one of the big 4, zero otherwise) and big 5industry (a dummy 1 if firm is in a big 5 industry, zero otherwise).

Chapter Summary

The chapter sought to develop hypotheses from the empirical evidence on corporate governance and financial performance. These hypothesesare used to develop an econometric model in the next chapter. The next chapter sets out the research design.It describeshow the sample was selected and data were collected, the research methodology used, and the extent to which the obtained empirical results are either robust or sensitive to control variables.

CHAPTER 4: RESEARCH METHOD

4.1 Introduction

This chapter discusses the research design. It seeks to achieve three interrelated objectives. First, it attempts to provide a comprehensive description of the data and research methodology used in this study. The significance is that every scientific work has to be replicable, and this can easily be achieved if the researcher provides a clear, specific laid down procedure on how the study is carried out (Hussey and Hussey, 1997). The second objective of the chapter is to explain the rationale for the various data and methodological choices made at every stage of the study. Finally, it aims to provide an assessment of the robustness of the data.

The remainder of this chapter is organised as follows. Section 4.2 describes the sample selection. Section 4.3 presents research design and section 4.4 examines a number of robustness or sensitivity tests.

4.2 Sample selection

The sample firms used to examine the internal corporate governance-financial performance link are drawn from companies listed on the JSE Ltd, South Africa. As at 16 August 2012, a total of 341 companies were officially listed on the main board of the JSE. Firms listed on the Alternative Exchange (AltX) were not considered, because they are subject to different listings, financial reporting and corporate governance requirements. The official list of all the main board listed firms with their respective industrial classifications was obtained directly from the Market Information Department of the JSE. The list has been cross-checked against the list provided on the JSE's official website, which is available at: http://www.jse.co.za.

Ten major industries, namely, basic materials, consumer goods, consumer services, financials, health care, industrials, oil and gas, technology, telecommunications, and utilities have been considered. Table 4.1 at the end of the chapter presents a summary of the sample selection procedure.

Panel Aof Table 4.1 shows the industrial composition of all companies that were listed on the main board of the JSE on 16 August 2012. Panels B, C and D contain the industrial composition of the listed firms available to be sampled, sampled firms with full data and the final sampled firms, respectively. Panel A indicates that the market is dominated by financials, industrials, basic materials, consumer services and consumer goods industries. Together, the five industries account for approximately 91 per cent of the population of listed firms on the JSE.

Two main types of data are employed when examining the relationship between internal corporate governance structures and the financial performance of South African listed firms. The first category consists of internal corporate governance variables. All internal corporate governance variables are manually extracted from the annual reports of the sampled companies. In companies where a particular year's annual report was missing or not available in McGregor BFA, the company was either directly contacted via telephone or e-mail or their website was scanned for hard or electronic copy.

In total, 27 company annual reports that were not found in McGregor BFA forming approximately 1.97 per cent of the total 1370 annual reports obtained (137 firms over 10 firm years each) were sourced as follows: two were collected from the company secretaries, three were by e-mail electronic versions, and two reports were obtained from company websites. The remaining 1363 (99.5 per cent) of the company annual reports were obtained from McGregor BFA. Company annual stock market and financial accounting performance variables constitute the second type of data used in this study. These were all collected from McGregor BFA.

To be included in the final sample, a firm has to meet the following two criteria: (1) a full set of a company's annual reports from 2002 to 2011 inclusive, had to be available either in McGregor BFA or via other media used, such as e-mail, company official website and postal delivery, as described above; and (2) its corresponding 10-year stock market and financial accounting information had to also be available in McGregor BFA or INET bridge. These criteria are imposed for several reasons. First, the criteria help to meet the requirements for a balanced panel data analysis, which favours the inclusion of those firms with several consecutive years of data (Yermack, 1996; Cheng, Evans and Nagarajan, 2008).

A potential weakness of the above criteria is that it introduces survivorship bias into the sample selection process. However, and as will be discussed below, the criteria in this study generate comparatively larger sample sizes in relation to those of previous South African studies to the extent that the generalisability of the research results should not be substantially impaired. In addition, it is in line with previous corporate governance researchers who have used panel data (Yermack, 1996; Gompers, Ishii and Metrick, 2003; Bhagat and Bolton, 2008).

As already explained in section 1.6 of chapter one, the use of panel data in corporate governance is one way of minimising inherent statistical problems, such as endogeneity (Börsch-Supan and Köke, 2002; Larcker and Rusticus, 2007). Secondly, contrary to much of the existing literature that uses one year's cross-sectional data, an analysis of 10-years' data with both cross-sectional and time series properties should help in ascertaining whether the observed cross-sectional internal corporate governance structures-performance link also endures over time. Thirdly, and as it is discussed in section 4.4 of this chapter, the 10-year panel ensures that sufficient series are obtained to permit carrying out proposed statistical and robustness analyses, such as an endogeneity test. Fourthly, the sample commences in the 2002 financial year because it is the year King II came into force and the year in which JSE listed firms were required to comply with its provisions or provide an explanation in the case of non-compliance (King Report, 2002). Finally, the sample ends in 2011 because it is the most recent year for which data was available at the time of data collection.

Using the above criteria, and as Panel D of Table 4.1 shows, the full data required have been obtained for a total of 137 (40.2 per cent) out of the 341 firms, constituting all ten industries. Out of the original sample size of 341, 130 firms had listed on the JSE after 2002, which would have meant that one or more annual reports are missing. A further 74 firms were those that had listed prior to 2002, but either delisted before 2011 or had one or more annual reports missing, or market or accounting performance variables missing. The remaining 137 firms had full sets of annual reports with corresponding financial data. However, the sample of 137 firms is large when compared with previous South African studies (Firer and Meth, 1986; April, Bosma and Deglon, 2003; Ho and Williams, 2003; Mangena and Chamisa, 2008; Ntim, 2011).

4.3 Research design

This study mainly uses OLS multiple regressions for hypotheses testing. However, the regression analysis is constrained by several assumptions such as normality, multicollinearity, homoscedasticity and linearity. Normality distribution is determined using the coefficient of its skewness and kurtosis. The data are normally distributed if the standard skewness and kurtosis are within ±1.96 and ±3 respectively (McCluskey and Lalkhen, 2007). Multicollinearity refers to the existence of a high correlation between particular independent variables that may exist whenever the correlation coefficient exceeds 0.80 (Gujarati, 2003).

Homocedasticity refers to the statistical model with a series of uncorrelated, purely random errors, ε, which are assumed to have a normal distribution with mean zero and constant variance, σ^2"(Aczel, 2005). According to Gozali (2007), the Park test may be able to detect the presence of heteroscedasticity whenever the coefficient of estimates is significant at a conventional level.

4.3.1 Independent variables

Independent variables in this model consist of individual internal corporate governance structures operating as single alternative corporate governance mechanisms in isolation. Appendix 1 contains all the independent variables used in this model. It also defines each variable and shows how each was measured. These include: board size (BS); proportion of independent non-executive directors (INEDs); frequency of board meetings (FBMs); board gender diversity (BGD);CEO non-duality (CND); presence of three internal key board committees, namely audit committee, remuneration committee and nomination committee, (PCom) and director share-ownership (DEQTY)

These corporate board structure variables are measured in accordance with earlier research. Board size (BS) is measured as the total number of directors serving on a company's board at the end of its financial year (Yermack, 1996; Mangena and Tauringana, 2008; O'Connell and Cramer, 2010). CEO non-duality (CND) is a dummy variable that takes the value of one if the positions of company chairperson and CEO are separated, otherwise zero (Kiel and Nicholson, 2003).

The proportion of independent non-executive directors (INEDs) is measured as the total number of non-executive directors divided by the total number of directors (Weir *et al*., 2002; Haniffa and Hudaib, 2006; O'Connell and Cramer, 2010). According to Gunasekarage and Reed (2008), an independent director is an outside director that has no management or financial affiliation to the company. Frequency of board meetings (FBMs) is measured as the total number of meetings in a financial year (Guest, 2009; Ntim and Osei, 2011). Board gender diversity (BGD) is measured by the proportion of females divided by the board size (Carter *et al*., 2003; Rose, 2007). Similarly and consistent with existing literature (Laing and Weir, 1999; Mangena and Chamisa, 2008; Henry, 2008), the audit committee (ACOM), the remuneration committee (RCOM), and the nomination committee (NCOM) are measured as dummy variables that take a value of one if ALL the three committees are established at the end a firm's financial year, otherwise zero. Director share-ownership (DEQTY) is a dummy variable that takes one if the CEO has share options and zero, if otherwise (Ho and Williams, 2003; Mangena and Chamisa, 2008).

4.3.2 Control or omitted variables

Any study that omits relevant economic variable(s) that could predict(s) financial performance and corporate governance could reach flawed conclusions (Black *et al*., 2006a; Chenhall and Moers, 2007a). Also, in theory, use of a comprehensive set of control variables has the potential to: (a) prevent firms from theoretically reaching "equilibrium" or "optimal differences" endogeneity, which is a situation in which different firms choose different corporate governance structures that performoptimally (Black *et al*., 2006a) and (b) prevent omitted variable(s) endogeneity (Larcker and Rusticus, 2010). As a result, to reduce potential omitted variable bias and endogeneity, a number of control variables, leverage (LEV), firm size (lnFS), big 4 audit firm size (B4A), and big 5 industry (B5I), are included in the multiple regression in addition to the other independent variables.

Section 3.9 of Chapter 3 discusses all the control variables used in this study and how they were operationalized. It should be noted that while these control variables have been selected on the basis of theory and existing evidence, as in every other positive accounting study, they are inevitably limited to the extent that they may not be exhaustive (Chenhall and Moers, 2007a and b; Van Lent, 2007; Larcker and Rusticus, 2010).

It is admitted that there may be other variables that can potentially affect financial performance and corporate governance, which due to reasons, such as data unavailability and lack of appropriate theoretical links cannot be included in the model (Chenhall and Moers, 2007a). As Koop (2012) indicates, there will virtually always be omitted variables. There is little that can be done about this omission – other than to hope that the omitted variables do not have much explanatory power and that they are not correlated with the explanatory variables included in the analysis. However, there is a counter argument, according to Koop (2012) to be made for using as few explanatory variables as possible. It has been shown that the inclusion of irrelevant variables decreases the accuracy of estimation of all the coefficients. This decrease in accuracy will be reflected in inordinately large confidence intervals and p-values (Koop, 2012).

In order to trade off the benefits of including many variables (thus reducing the risk of omitted variables bias) with the costs of possibly including irrelevant variables (thus reducing accuracy of estimation), Koop (2012) suggests beginning with as many explanatory variables as possible, then discard those that are not statistically significant and then re-run the regression with the new set of explanatory variables. Consequently, the initial multiple regression will include all the control variables, namely, leverage (LEV), firm size (lnFS), big 4 audit firm size (B4A), and big 5 industry (B5I).

4.3.3 Dependent variables

Distinct from much of the existing literature (Agrawal and Knoeber, 1996; Yermack, 1996; Beiner *et al*., 2006; Black *et al*., 2006a; Henry, 2008), but in line with Gompers *et al*. (2003), Klapper and Love (2004), Beiner, Drobetz, Schmid and Zimmermann (2004), Haniffa and Hudaib (2006), Bhagat and Bolton (2008), Guest (2009) and Ntim (2011), two measurements, namely return on assets (ROA) and Tobin's Q are used as proxies for accounting-based and market-based measures for financial performance, respectively. For instance, in their study, Bhagat and Bolton (2008) investigated the impact of corporate governance on operating performance of United States (US) firms using ROA and Tobin's Q as performance measures. Beiner *et al*. (2004) used Tobin's Q and ROA to measure performance of firms quoted on the Swiss Stock Exchange. Jackling and Johl (2009) used Tobin's Q and ROA as performance indicators for Indian firms.

Appendix 1 contains further information on the two measures used as proxies for financial performance, as well as detailed information on how theseare measured. The decision to use the two measures of financial performance is underpinned by two main reasons. First, evidence suggests that insiders and outsiders place different values on corporate governance (Black *et al*., 2006a). As such, the accounting-based measure of performance (ROA) attempts to capture the wealth effects of corporate governance mechanisms from the perspective of company management (insiders), while the market-based measure (Tobin's Q) focuses on the financial value of corporate governance structures by investors (outsiders). Secondly, each measure has its own strengths and weaknesses with no consensus being reached in the literature on one particular measure as being the 'better' proxy to measure firm performance (Haniffa and Hudaib 2006). Hence, using the two measures represents an attempt to test the robustness of the results against both accounting-based and market-based measures of financial performance.

ROA is defined in this study as the ratio of profit before taxes and total assets at the end of a financial year (Yermack, 1996; Beiner *et al*., 2006; Fich and Shivdasani, 2006). It measures how efficiently a firm manages its operations and utilises its assets to generate profits (Ross, Westerfield and Jordan, 1998). On average, ahigher ROA suggests efficient useof a firm's assets in maximising the value of its shareholders' investments by management. ROA is a meaningful measure of performance because it eliminates the aspect of size which makes it easier for comparisons to be drawn across firms (Lev and Sunder, 1979). Demsetz and Lehn (1985) assert that as accounting profit, ROA may reflect year-on-year fluctuations in underlying business conditions better than stock market rates of return. This is so because stock market rates of return reflect expected future developments that may mask current fluctuations in business conditions.

ROA has been used widely in corporate governance studies (Shrader, Blackburn, and Iles, 1997; Gompers *et al*., 2003; Klapper and Love, 2004; Core, Guay and Rusticus, 2006; Haniffa and Hudaib, 2006; Cui, Evans and Wright, 2008). However, the use of ROA has been criticised on several grounds. First, ROA is an historical measure, and past profits can be a poor reflection of true future profitability (Ross, Westerfield and Jaffe, 2002). A closely related weakness is that because ROA is based on historical cost accounting, it is unable to reflect current changes in valuation by the equity markets (Krivogorsky, 2006).

Secondly, through changes in accounting policies, methods and techniques, ROA is suggested to be susceptible to all manner of managerial manipulations (Alexander, Britton and Jorissen, 2007; Mangena and Tauringana, 2008). Finally, ROA has been criticised for its inability to reflect industrial and environmental differences, non-financial performance factors, such as customer and employee satisfaction, short-term fluctuations in business fortunes, and changes in the value of money as a result of inflation and fluctuations in exchange rates (Alexander *et al*., 2007).

On the other hand, Tobin's Q is defined in this study as the ratio of a firm's total assets minus its total book value of ordinary equity plus total market value of equity divided by the book value of total assets (Chung and Pruitt, 1994; Beiner *et al*., 2006). As has been pointed out above, Tobin's Q is the alternative measure of financial performance that is used as a proxy for the markets' valuation of the quality of a firm's internal corporate governance structures. Due to the difficulties encountered in the computing of the original Tobin's Q, such as costly computational effort and data requirements, this study follows Chung and Pruitt's (1994) approximation of Q, which has been demonstrated to correlate 96.6 per cent with the original Tobin's Q.

Due to data limitations, the book value of assets will be used, as a proxy for the current replacement cost of company assets. Generally, Tobin's Q measures the efficacy with which a firm's management is able to utilise its assets to generate value for shareholders. Like ROA, a higher Tobin's Q reflects greater efficacy of a firm's internal corporate governance structures, as well as a better perception of a company's financial performance by the market (Haniffa and Hudaib, 2006). If the value of the Tobin's Q is 1.0, this indicates that the market value is reflected in the assets of the company. A ratio greater than 1.0 indicates that market value is higher than the company's recorded assets. Therefore, a higher Tobin's Q encourages companies to invest more capital, because the value of the company is higher than their purchase price, creating more value for shareholders. On the other hand, a Tobin's Q of lower than 1.0 indicates that the market value is lower than the assets of the company which implies that the market may be undervaluing the company.

The concept of Tobin's Q has considerable intuitive appeal and is of immense theoretical and practical relevance (Chung and Pruitt, 1994).

As such, it has been used extensively, as a proxy for financial performance not only in corporate governance literature (Morck, Shleifer and Vishny, 1988; Yermack, 1996; Agrawal and Knoeber, 1996; Gompers *et al*., 2003; Henry, 2008), but also within the larger corporate finance literature (Chung and Pruitt, 1994). From the preceding discussion Tobin's Q is a very attractive performance proxy, because its empirical validity is grounded in a rigorously established empirical literature.

However, and similar to any other performance proxy, it has received a barrage of criticisms. Unlike other performance proxies like the ROA, however, most of its criticisms are concerned with its construction and potential measurement errors (Klock, Thies and Baum, 1991; Chung and Pruitt, 1994). A major line of criticism toTobin's Q is that it is too expensive in terms of computational effort and data requirements (Chung and Pruitt, 1994). As a result of this, many approximations have been developed, most of which propose the use of book values of assets, equity and debt (Chung and Pruitt, 1994). This has led to a related criticism that it is a 'quasi-historical'measure, because its computation involves the use of accounting variables prepared under historical cost accounting (Shabbir and Padget, 2008).

Thus, Tobin's Q also appears to be subject to most of the weaknesses of conventional accounting-based measures of performance. These weaknesses include being prone to managerial manipulation and creative accounting, as mentioned above. However, with the gradual move towards fair value accounting (Alexander *et al*., 2007) or even a mixture of historical cost and mark-to-market accounting (Danbolt and Rees, 2008), it can be argued that this criticism will become increasingly less valid.

Therefore, to minimise the potential impact of these limitations (ROA and Tobin's Q) on the results, and for reasons discussed above, extensive lists of control variables have been included in the model. It may also justify the use of both accounting and market-based measures of performance, allowing each measure to make-up for the weaknesses of the other.

Therefore, based on the King II recommendations for good corporate governance as well as taking a leaf from earlier studies, this study derives an empirical specification as presented in the following equation:

$$FP_{it} = a_0 + (\beta_1 BS)_{it} + (\beta_2 INEDs)_{it} + (\beta_3 CND)_{it} + (\beta_4 BGD)_{it} + (\beta_5 FBMs)_{it} + (\beta_6 PCOM)_{it} + (\beta_7 DEQTY)_{it} + \sum_{k=1}^{n}(\beta_1 CONTROLS)_{it} + \varepsilon_{it}$$

……equation (1),

where, FP_{it} stands for ROA (proxy for accounting-based financial performance measure for the ith firm at time t) and Tobin's Q (proxy for the market-based financial performance measure for the ith firm at time t), BS is board size for the ith firm at time t, INEDs are independent non-executive directors for the ith firm at time t, CND is CEO non-duality for the ith firm at time t, FBMs is frequency of board meetings for the ith firm at time t, BGD is board gender diversity for the ith firm at time t, PCom is the presence of internal key board committees for the ith firm at time t, DEQTY is the director share-ownership for the ith firm at time t, control is the jth control variables for the ith firm at time t and ε_{it} is the error term.

4.4 Robustness and sensitivity tests

A series of sensitivity analyses is conducted to test the robustness of the results. These include checking the robustness of the results against endogeneity.

4.4.1 Problem of endogeneity

The econometric problems surrounding endogeneity have recently gained a heightened sense of awareness within the positive accounting literature (Börsch-Supan, and Köke, 2002; Chenhall and Moers, 2007a and b; Van Lent, 2007; Larcker and Rusticus, 2007, 2010). A variable is said to be endogenous if it is determined within the context of the model, while a variable is said to be exogenous if it is correlated with the dependent variable, but its values are determined outside the model (Chenhall and Moers, 2007a). There four major causes of endogeneity are: omitted variables, simultaneity or reverse causation, measurement errors and equilibrium conditions (Wooldridge, 2002; Chenhall and Moers, 2007a; Larcker and Rusticus, 2010).

First, omitted variables endogeneity arises if a relevant control variable is, for example, omitted from equation (1) due to data unavailability (Wooldridge, 2002). Black *et al.* (2006a) suggest, for example, that firms may appoint non-executive directors just to signal "managers' intent" to treat outside investors fairly, even though non-executive directors in practice may not affect the behaviour of managers. In this case, corporate governance will wrongly proxy for an omitted variable (managers' intent). Secondly, simultaneity or reverse causation arises when at least one of the independent variables is also simultaneously determined by the dependent variable (Wooldridge, 2002). For example, rather than firms with good internal corporate governance structures receiving higher market valuations, as has been assumed in this study, it could be that firms with higher market values are more likely to choose better internal corporate governance structures, because they have better investment opportunities and rely more heavily on external financing (Beiner *et al*., 2006). It has been suggested that endogeneity arising from any of the above factors can limit the validity of the empirical models estimated (Chenhall and Moers, 2007a).

Despite the above potential endogeneity problems, a substantial number of past studies do not address any concerns that the potential presence of endogeneity poses. Only a small number of prior corporate governance studies have explicitly addressed concerns raised by the potential presence of endogeneity (Agrawal and Knoeber, 1996; Himmelberg *et al*., 1999; Durnev and Kim, 2005; Beiner *et al*., 2006; Black *et al*., 2006a; Henry, 2008; Ntim, 2011). As a result, this raises doubts with respect to the reliability of the results of a considerable number of corporate governance studies.

In addressing the potential problems that endogeneity could pose, this study specifically follows the five-step procedure formulated by Larcker and Rusticus (2010). Larcker and Rusticus (2010) suggest that the first step when addressing any concerns of endogeneity is to apply rigorous accounting theory and logic to specify endogenous and exogenous variables in the structural equation. Additionally, the researcher needs to point out some of the explicit reasons for endogeneity becoming a problem. The second step involves exploring alternative ways of solving the problem, including following standard 'textbook' econometric and non-econometric solutions (Larcker and Rusticus, 2010).

First, with regard to employing non-econometric solutions, this study uses a 10-year panel data. Statistical theory suggests that panel data may help in reducing problems posed by endogeneity (Börsch-Supan and Köke, 2002; Larcker and Rusticus, 2007). Secondly, a textbook solution utilises an instrumental variable (IV) model to deal with potential omitted variable and measurement error endogeneity problems. However, for this study, a 'textbook' econometric solution of employing an instrumental variable was not followed as this approach is marred with inconsistencies in the choice of instrumental variables. As Fahlenbrach (2003) points out, adopting a simultaneous equations approach to resolving endogeneity is difficult to implement because most instrumental variables have been used as determinants in the regressions. Consequently according to Coles *et al*. (2007), the efficacy of a simultaneous model to resolve such a problem is questionable.

Chapter summary

The chapter focused on the data, data sources and research design. It sought to achieve four main closely related objectives. First, it attempted to describe the data and research methodology. In this regard, the data, the sources, the sample selection procedure and the main research methodology used in this study were described comprehensively. Two main types of data are used in this study: internal corporate governance and financial performance variables. In the next chapter, the main objective is to provide a detailed description and explanation for the levels of compliance within the South African corporate governance landscape. More specifically, the next chapter generally attempts to determine the levels of compliance among the sampled firms, and ascertain whether those observed levels of compliance that differ between large and small firms (as measured by market capitalisation) translates into firm performance.

Table 4.1: Summary of the sample selection procedure

Panel A: Industrial composition of all JSE listed firms as at 16/08/2012	*No. in each industry*	*Percentage (%) of population*
Basic Materials	73	21.4
Consumer Goods	26	7.6
Consumer Services	44	12.9
Financials	95	27.9
Health Care	8	2.3
Industrials	71	20.8
Oil and Gas	4	1.2
Technology	14	4.1
Telecommunications	5	1.5
Utilities	1	0.3
Total population	*341*	*100.0*

Panel B: Industrial composition of all JSE listed firms to be sampled		*No. in each industry*	*Percentage (%) of population*
Basic Materials		73	21.4
Consumer Goods		26	7.6
Consumer Services		44	12.9
Financials		95	27.9
Health Care		8	2.3
Industrials		71	20.8
Oil and Gas		4	1.2
Technology		14	4.1
Telecommunications		5	1.5
Utilities		1	0.3
Total firms available to be sampled		*341*	*100.0*
Less: Firms with data missing	*204*	*204*	*59.8*
Total sampled firms with full data		*137*	*40.2*

Continuation of Table 4.1: Summary of the sample selection procedure

Panel C: Industrial composition of Sampled firms with full data	*No. in each industry*	*Percentage (%) of population*
Basic Materials	30	21.9
Consumer Goods	16	11.7
Consumer Services	25	18.2
Financials	30	21.9
Health Care	3	2.2
Industrials	27	19.7
Oil and Gas	1	0.73
Technology	4	2.9
Telecommunications	1	0.73
Utilities	0	0
Total sample (Final)	*137*	*100.0*

Panel D: The Final Sampled firms	*No. in each industry*	*percentage of the final industrial sample (137)*	*percentage of the original total population (341)*
Basic Materials	30	21.9	8.8
Consumer Goods	16	11.7	4.7
Consumer Services	25	18.2	7.3
Financials	30	21.9	8.8
Health Care	3	2.2	0.9
Industrials	27	19.7	7.9
Oil and Gas	1	0.7	0.3
Technology	4	2.9	1.2
Telecommunication	1	0.7	0.3
Total sample (Final)	*137*	*100*	*40.2*

CHAPTER 5: DESCRIPTIVE STATISTICS

5.1 Introduction

In the previous chapters, the research design and development of hypotheses were discussed. Section 5.2 of this chapter presents descriptive statistics relating to the proxies for the dependent (financial performance) and the independent (corporate governance), excluding control variables.

5.2 Descriptive statistics

Descriptive statistics from 2002 to 2011 are calculated for corporate governance variables and firm performance variables in the study. Descriptive statistics compare the compliance of the South African JSE listed companies with corporate governance best-practice recommendations by King II of 2002. The descriptive statistics also compare the level of compliance between the large and small companies as proxied by the market capitalisation.

Table 5.1 in the next page shows descriptive statistics on characteristics of dependent and independent variables. Column one shows the variables, column 2 shows the mean, standard deviation and median, respectively, column 3 shows all sampled firms, column 4 all sampled large firms and column 5 all sampled small firms.

Table 5.1: Descriptive statistics of variables

Variable column (1)	Statistics (2)	All firms (N=1370) (3)	All large firms (N=276) (4)	All small firms (N=1094) (5)
BS	Mean	10.28	14.53	9.2
	Std dev	4.06	3.83	3.35
	Median	10	14	9
FBMs	Mean	5.06	6.01	4.82
	Std dev	1.87	2.25	1.68
	Median	4	6	4
INEDs	Mean	0.39	0.5	0.37
	Std dev	0.23	0.19	0.23
	Median	0.43	0.5	0.4
BGD	Mean	0.09	0.13	0.08
	Std dev	0.1	0.09	0.1
	Median	0.08	0.13	0
PCom	Mean	0.42	0.8	0.33
	Std dev	0.49	0.4	0.47
	Median	0	1	0
CND	Mean	0.9	0.99	0.87
	Std dev	0.3	0.12	0.33
	Median	1	1	1

Notes: Large (Small) firms are those with a market value above (below) the average at year end

Continuation of Table 5.1: Descriptive statistics of variables

Variable column (1)	Statistics (2)	All firms (N=1370) (3)	All large firms (N=276) (4)	All small firms (N=1094) (5)
DEQTY	Mean	0.93	0.99	0.91
	Std Dev	0.26	0.1	0.29
	Median	1	1	1
ROA	Mean	0.08	0.08	0.08
	Std Dev	0.07	0.07	0.07
	Median	0.08	0.07	0.08
Tobin's Q	Mean	Mean	1.33	0.98
	Std Dev	Std Dev	1.01	0.81
	Median	Median	1.20	0.82

Notes*: *Large (Small) firms are those with a market value above (below) the average at year end

Tabe 5.2: Descriptive statistics of variables for all firms year-on-year (N=137) observation

		2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
BS	Mean	9.73	9.97	9.91	10.03	10.31	10.18	10.18	10.67	10.79	10.99
	Std dev	4.05	4.4	4.31	4.38	4.27	3.97	3.72	3.67	3.8	3.83
	Median	9	10	9	9	9	10	10	10	10	11
FBMs	Mean	4.65	4.89	5.17	5.12	5.04	5.14	5.05	5.2	5.2	5.17
	Std dev	1.67	1.85	1.97	2.46	1.74	1.76	1.73	1.8	1.98	1.63
	Median	4	4	4	5	5	5	5	5	5	5
INEDs	Mean	0.23	0.3	0.38	0.39	0.4	0.42	0.44	0.45	0.47	0.47
	Std dev	0.24	0.24	0.24	0.26	0.22	0.23	0.21	0.19	0.17	0.17
	Median	0.19	0.33	0.38	0.4	0.4	0.42	0.45	0.45	0.45	0.47
BGD	Mean	0.04	0.04	0.05	0.07	0.09	0.1	0.11	0.12	0.12	0.13
	Std dev	0.06	0.06	0.07	0.08	0.09	0.1	0.1	0.1	0.11	0.11
	Median	0	0	0	0.06	0.09	0.1	0.1	0.11	0.12	0.12
PCom	Mean	0.23	0.33	0.37	0.39	0.44	0.44	0.47	0.5	0.5	0.58
	Std dev	0.42	0.47	0.49	0.49	0.5	0.5	0.5	0.5	0.5	0.5
	Median	0	0	0	0	0	0	0	0	1	1
CND	Mean	0.77	0.82	0.89	0.91	0.91	0.91	0.93	0.93	0.95	0.95
	Std dev	0.42	0.38	0.31	0.29	0.28	0.29	0.25	0.25	0.22	0.22
	Median	1	1	1	1	1	1	1	1	1	1
DEQTY	Mean	0.88	0.91	0.92	0.93	0.93	0.93	0.94	0.94	0.94	0.94
	Std dev	0.32	0.28	0.27	0.26	0.26	0.25	0.24	0.24	0.24	0.26
	Median	1	1	1	1	1	1	1	1	1	1
ROA	Mean	0.07	0.08	0.09	0.1	0.1	0.09	0.08	0.06	0.07	0.07
	Std dev	0.07	0.07	0.07	0.07	0.07	0.07	0.08	0.07	0.05	0.07
	Median	0.07	0.08	0.09	0.09	0.09	0.09	0.08	0.06	0.07	0.06
Tobin's Q	Mean	0.74	0.90	1.07	1.21	1.25	1.32	0.88	1.02	1.10	0.96
	Std dev	0.65	0.76	0.78	0.83	0.81	0.85	0.72	0.84	0.88	0.80
	Median	0.52	0.73	0.98	1.10	1.16	1.20	0.60	0.73	0.84	0.67

i. Board size

The mean (median) for board size (BS) of all firms as reported in the descriptive statistics is 10.28(10). The average board size increased from 9.73 in 2002 to 10.99 in 2011 - an indication that board size has been increasing during the period of examination (Table 5.2 and Figure 5.1). Interestingly, as shown in Figure 5.2, large South African firms have proportionally larger boards than small firms.

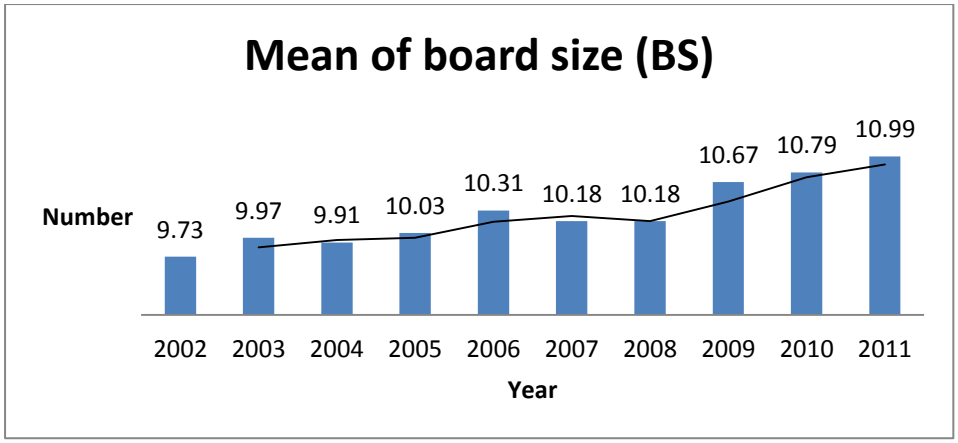


Figure 5.1: Mean of board size of all sampled firms

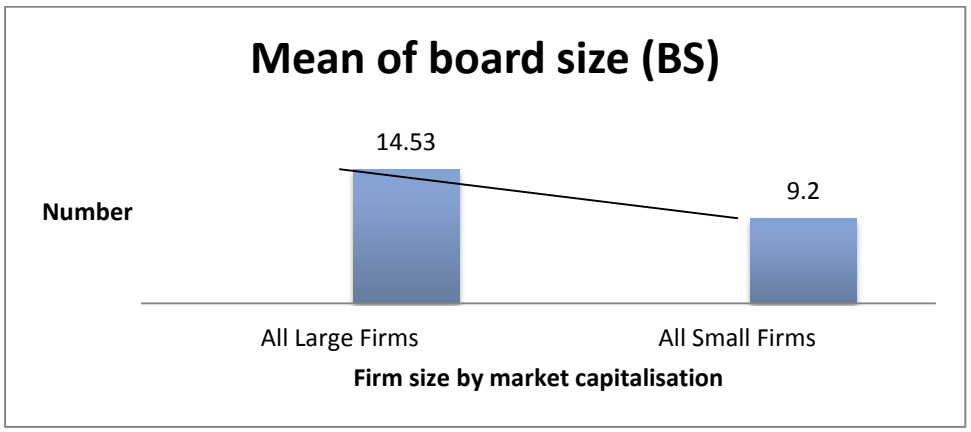


Figure 5.2: Mean of board size of all sampled large and small firms

According to the South African Companies' Act 71 of 2008, all public companies are obliged to have a minimum of three directors, while the JSE's Listings Rules mandate listed firms to have a minimum of four directors. Since none of them sets a maximum board size, the average South African board size for this study is compared to those in studies in other economies. As Table 5.2 depicts, South African publicly listed firms fare fairly well, with board size larger than those in all countries, except for Thailand and Nigeria.

The table below shows the board size findings in other countries.

Table 5.3: Comparison between board sizein South Africa and other countries

Countries	Country	Board Size
McIntyre, Murphy and Mitchell (2007)	Canada	9.7
Arora (2011)	India	5.7
Ehikioya (2009)	Nigeria	10.6
Tornyeva and Wereko (2012)	Ghana	7.47
O'Connell and Cramer (2010)	Ireland	9.3
Yasser, Entebang and Mansor (2011)	Pakistan	9.3
Chaghadari (2011)	Malaysia	8.2
Lin and Cheng (2011)	Taiwan	6.2
Guest (2009)	UK	7.2
Matolcsy, Stokes and Wright (2004)	Australia	6.6
Yammeesri and Herath (2010)	Thailand	11.4
Dehaene, De Vuyst and Ooghe (2001)	Belgium	8.4
Khanchel (2007)	United States(US)	9.4
Mak and Kusnadi (2005)	Singapore	7.3
	Malaysia	7.4
Heaney (2007)	Hong Kong	10.1
	Malaysia	8.6
	Philippines	9.5
	Singapore	7.5
Haniffa and Hudaib (2006)	Malaysia	7.9
This study (2013)	*South Africa*	*10.3*
Average board size		*8.5*
Minimum board size		*5.7*
Maximum board size		*11.4*

ii. Frequency of board meetings

Table 5.1 reveals that SA boards meet about 5 times a year, which is slightly higher than what King II recommends. King II and the JSE's Listings Rules task every South African listed firm to formulate a policy on frequency, purpose, conduct and duration of the board of directors' and board sub-committee' meetings. Specifically, King II recommends that all corporate boards should meet regularly, at least once a quarter. Frequency must be disclosed in their annual reports. As shown in Table 5.2 and Figure 5.3, in terms of year-on-year comparison, frequency of board meetings for South African listed companies increased from 4.65 in 2002 to 5.17 in 2011.

Large South African firms, as depicted in Figure 5.4 meet more frequently (6.01 times in a financial year) than small companies (4.82 times in a financial year). The question is whether this increase improves a firm's performance or whether the increase in frequency of board meetings is necessitated by corporate crisis. More light is shed on this issue by OLS multiple regressions analysis in the next chapter.

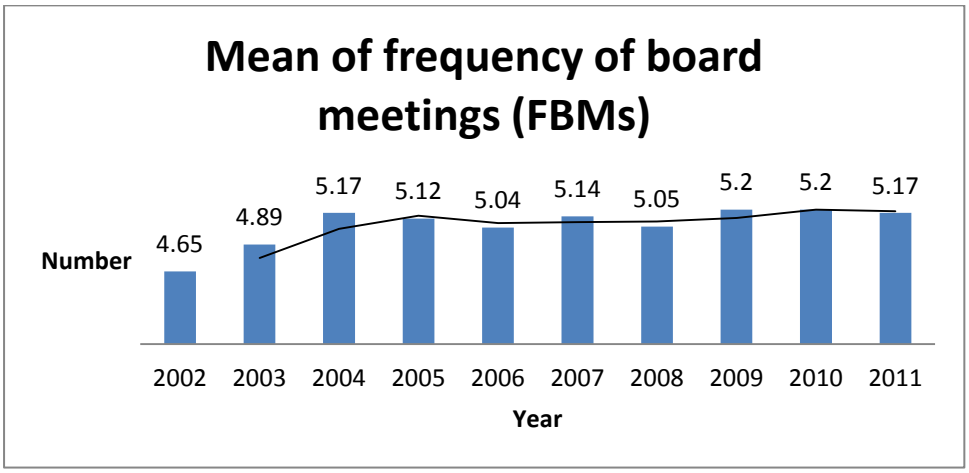


Figure 5.3: Mean of frequency of board meetingsof all sampledfirms

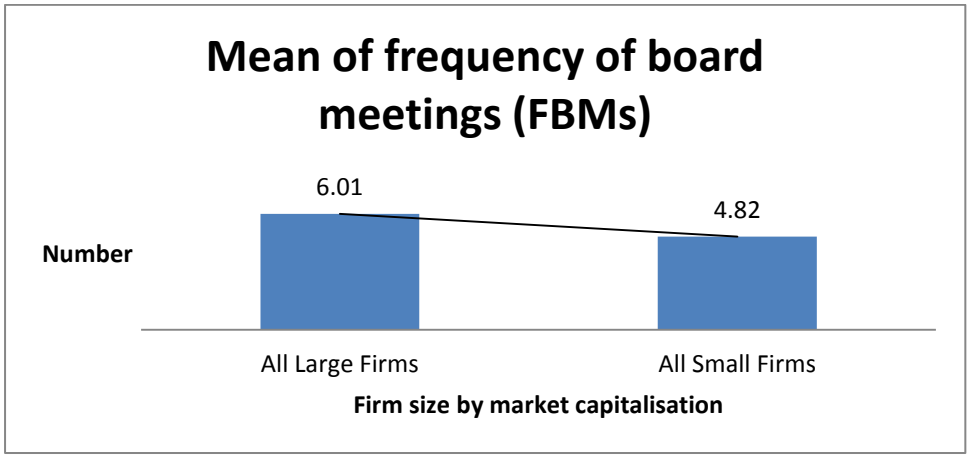


Figure 5.4: Mean of frequency of board meetingsof all sampled large and small firms

iii. Proportion of independent non-executive directors

According to Table 5.1, in South African JSE listed companies, 39 per cent of their board complement are independent non-executive directors.

The number of independent non-executive directors in South African puclicly listed firms doubled from 23 per cent in 2002 to 47 per cent in 2011 (Table 5.2 and Figure 5.5). It is worth noting that half of the board members in large firms are independent non-executive directors (Figure5.6).

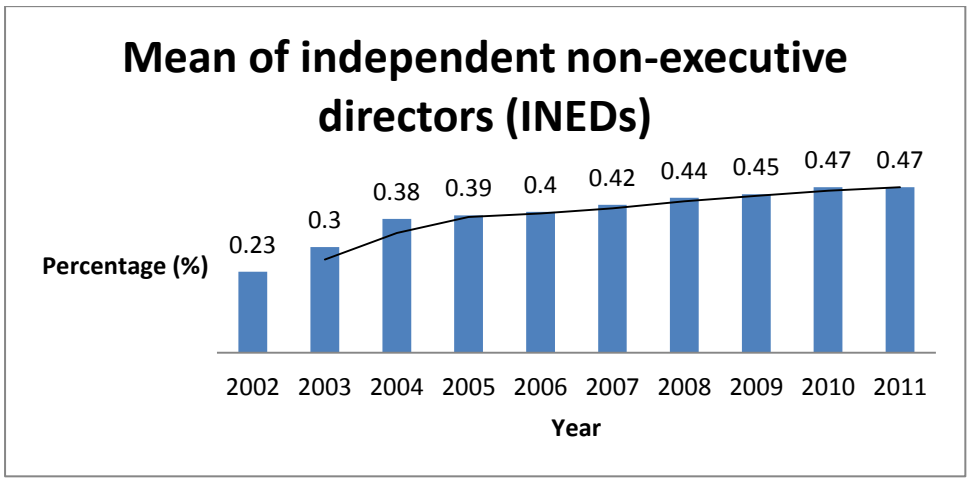


Figure 5.5: Mean of independent non-executive directors of all sampled firms

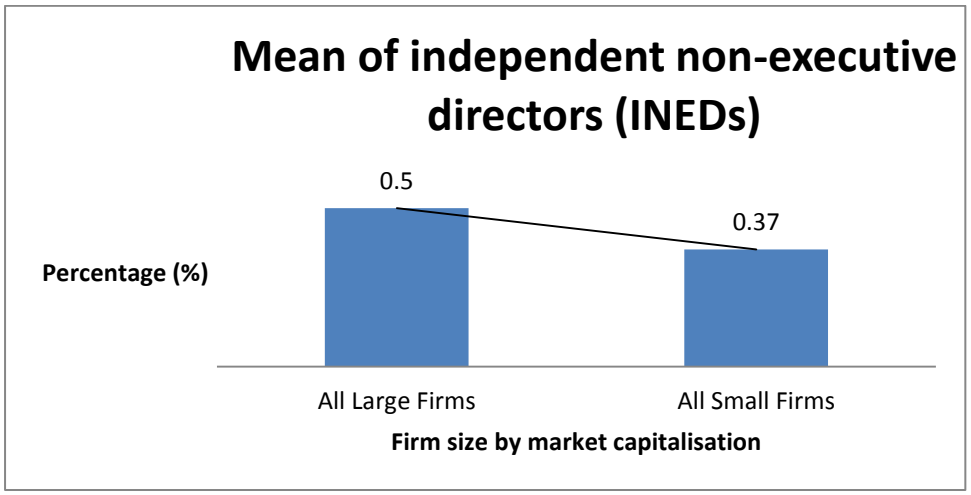


Figure 5.6: Mean of independent non-executive directors of all sampled large and small firms

iv. Board gender diversity

As indicated in section 3.5 of Chapter 3, board diversity in this study is defined on the basis of gender, irrespective of ethnicity or race. King II and the JSE's Listings Rules do not set any specific targets or conditions for firms. However, they suggest that every company should consider whether its board is diverse enough in terms of skills (profession and experience) and demographics (age, ethnicity and gender). Table 5.1 shows that in the average sampled firm, approximately 9 per cent of its board members are women (gender diversity). It follows that the average South African listed firm's board is dominated (91 per cent) by males.

Empirically, this finding is in line with the results of existing corporate governance studies (Singh and Vinnicombe, 2004; Swartz and Firer, 2005; Doldor, Obe, Gaughan and Sealy, 2012). For instance, Singh and Vinnicombe (2004) report that the percentage of women, who held Financial Times Stock Exchange (FTSE) 100 index directorships was only 7 per cent in 2002. In their study, Swartz and Firer (2005) report that the board of an average South African listed firm comprised of only 6 per cent women in 2003. Similarly, Doldor *et al*. (2012) indicate that only 12.5 per cent of directors Financial Times Stock Exchange (FTSE) 100 boards and 7.8 per cent of directors of FTSE 250 boards, were women.

As Table 5.2 and Figure 5.7 indicate, board diversity among South African corporate boards improved substantially over time. In 2002, the average sampled firm's board had only 4 per cent of women. By 2011, this had increased to 13 per cent, a 9 percentage point increase over a 10-year period. Notably, Figure 5.8 shows that large South African firms have a greater representivity of women (13 per cent) on their boards than small firms (8 per cent).

As discussed further in chapters six and seven, the small number of women on South African corporate boards implies that they cannot have a significant impact on firm performance.

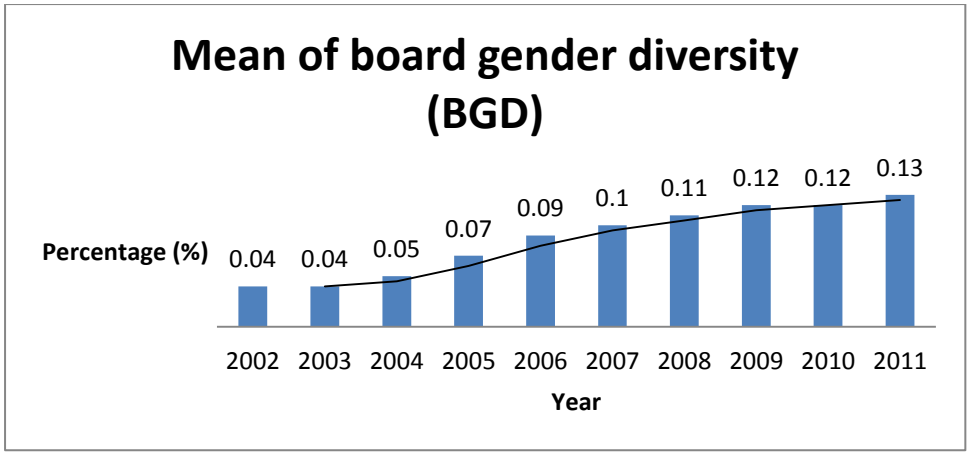


Figure 5.7: Mean of board gender diversity of all sampled firms

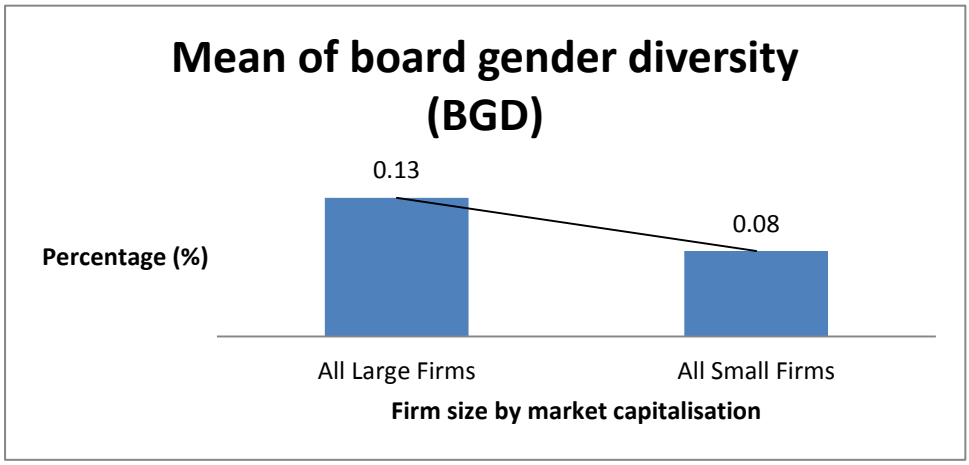


Figure 5.8: Mean of board gender diversity of all sampled large and small firms

v. Presence of internal key board committees

The South African Companies' Act 71 of 2008 requires every public company to establish an audit committee, which must consist of at least three outside directors. Similarly, King II and the JSE's Listings Rules require South African listed firms to establish audit, remuneration and nomination committees. As Table 5.2 and Figure 5.9 indicate, in 2002, 23 per cent of companies had audit, remuneration and nomination committees. This figure increased to 58 per cent in 2011. However, even though the level of compliance increased every year, Table 5.1 indicates that in general, only 42 per cent of the South African JSE listed firms had audit, remuneration and nomination committees.

In Figure 5.10, 80 per cent of large firms have audit, remuneration and nomination committees while only 33 per cent of small firms have internal key internal board committees. This is an indication that more large firms comply with King II and JSE Listings Rules than their smaller counterparts.

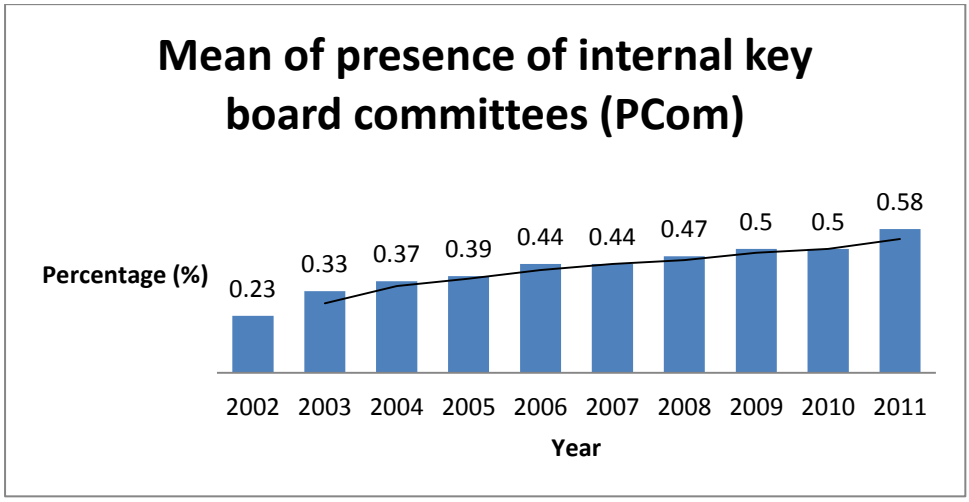


Figure 5.9: Mean of presence of internal key board committees of all sampled firms

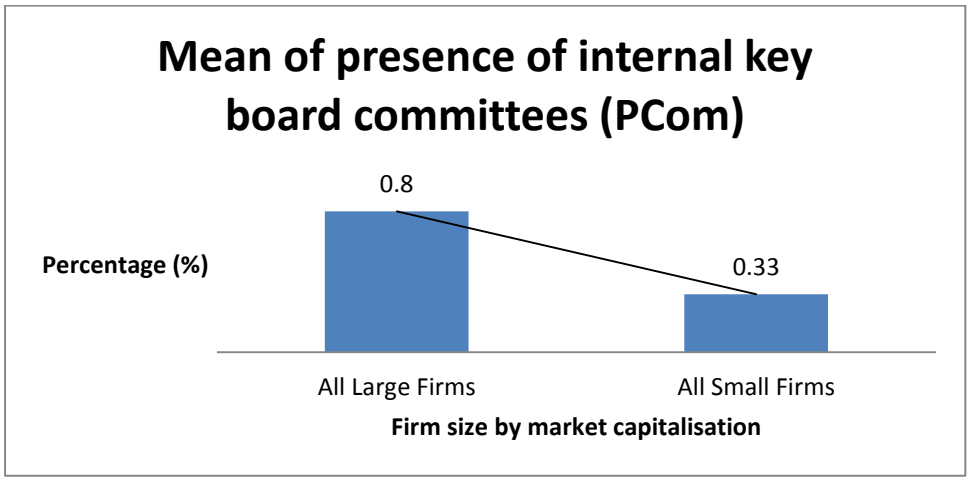


Figure 5.10: Mean of presence of internal key board committees of all sampled large and small firms

vi. CEO non-duality

An analysis of the leadership structure from 2002 to 2011 (Table 5.1) reveals that, 90 per cent of the firms separate the leadership roles of the chairperson and CEO. King II and JSE Listings Rules state explicitly that the positions of the chairperson and the CEO should not be held by the same individual. As a result, Table 5.2 and Figure 5.11 showed a steady upward trend from 2002 to 2011 whereas Figure 5.12 indicates that almost ALL large firms (99 per cent) have separated the roles of CEO and chairperson. The upward trend is in congruent with the views of Chen, Lin and Yi (2008) who note a recent trend of an increasing number of fims converting from a dual to a non-dual CEO structure.

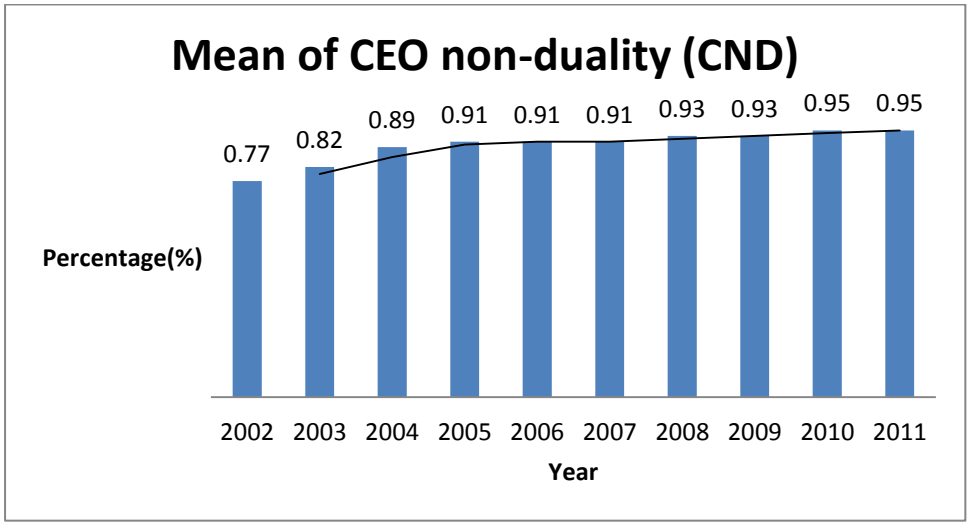


Figure 5.11: Mean of CEO non-duality of all sampled firms

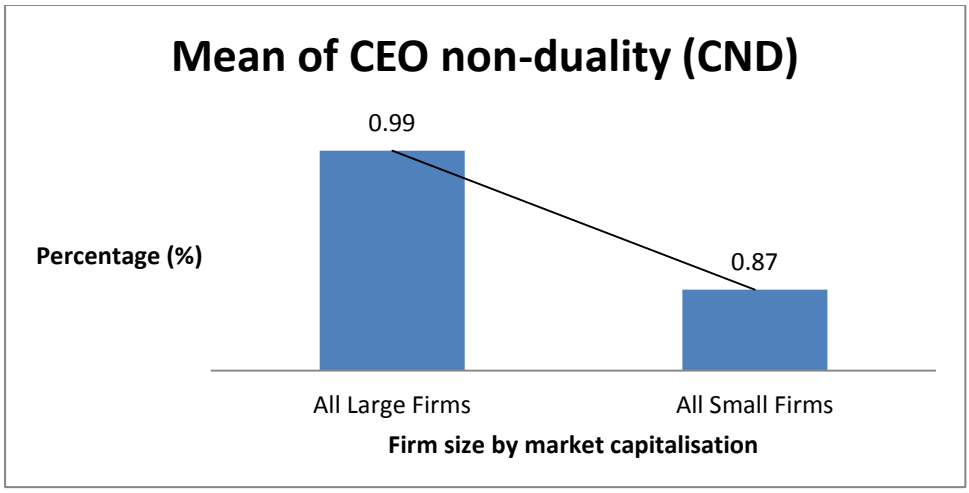


Figure 5.12: Mean of CEO non-dualityof all sampled large and small firms

vii. Director share-ownership

King II and the JSE's Listings Rules do not set any ownership requirements for directors. However, King II suggests that performance-related elements of directors' remuneration, such as stock options, should constitute a substantial portion of their total remuneration package so that they align their interests with those of shareholders. It is revealed in Table 5.1 that 93 per cent of SA publicly listed companies provide long-term incentives in the form of equity or shares to their CEOs. The graph in Figure 5.13 below indicates that firms that heeded this suggestion of King II on share-ownership increased from 88 per cent in 2002 to 94 per cent in 2011. As Figure5.14 illustrates, almost ALL large firms (99 per cent) offer their CEOs long-term share-based incentives in the form of shares or equity.

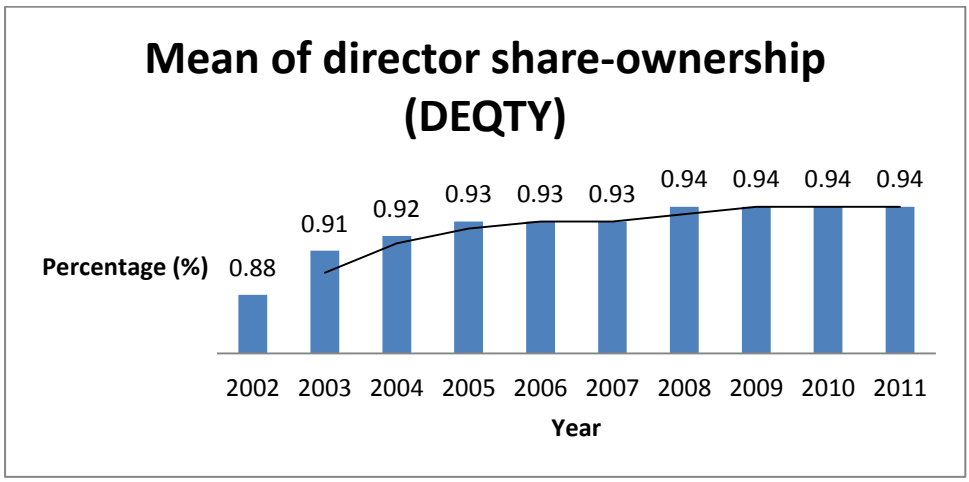


Figure 5.13: Mean of director share-ownership of all sampled firms

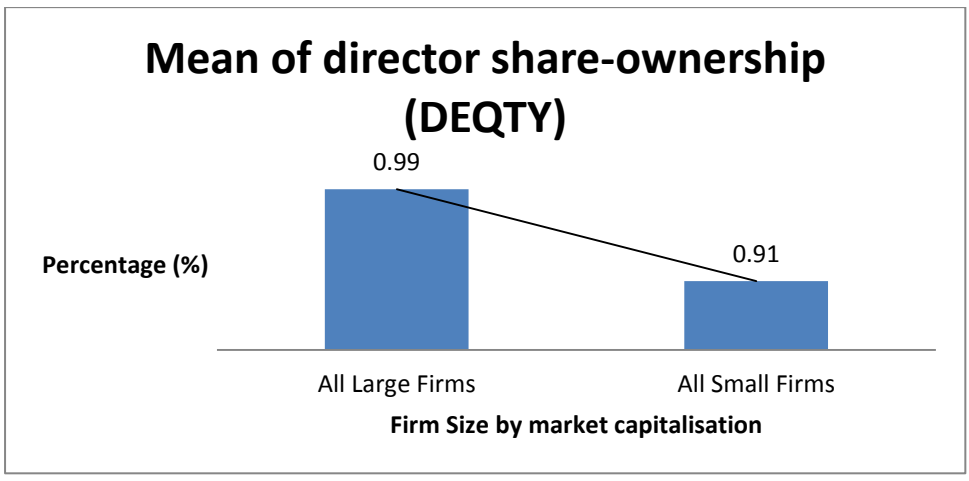


Figure 5.14: Mean of director share-ownership of all sampled large and small firms

viii. Return on assets

The mean value for ROA in both small and large firms (Table 5.1 and Figure 5.16 respectively) was 8 per cent over the period of examination. In 2002, according to Figure5.15, ROA was 7 per cent and increased steadily until 2006, thereafter dropping to an all-time low of 6 per cent in 2009. Results report that the profitability based on total assets has been decreasing since 2006.

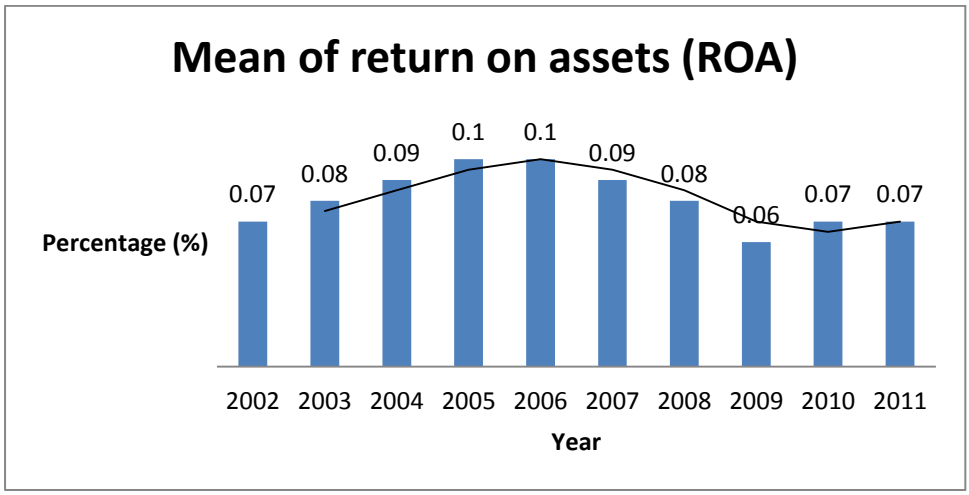


Figure 5.15: Mean of return on assets of all sampled firms

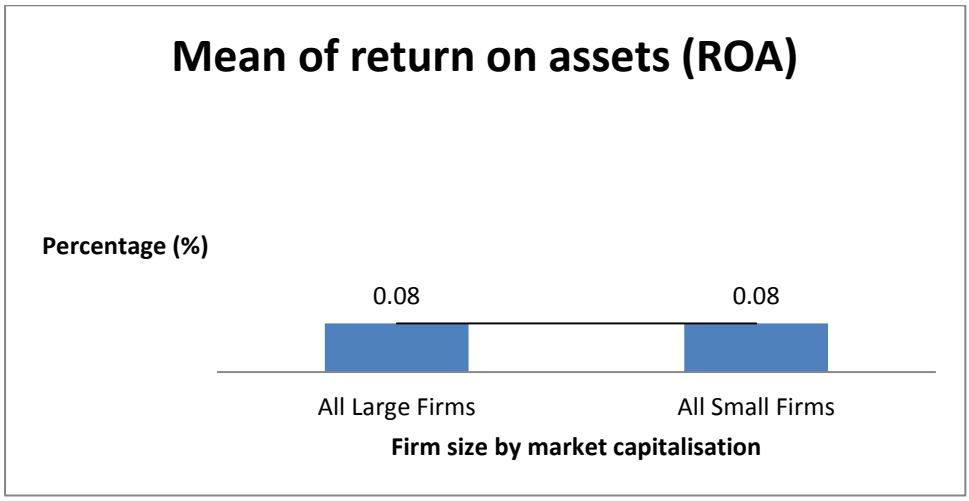


Figure 5.16: Mean of return on assets of all sampled large and small firms

ix. Tobin's Q

As discussed in section 4.3.3 of Chapter 4, Tobin's Q measures market performance. The mean value for Tobin's Q for 2002 was 0.74 as shown in Figure 5.17. In comparison, the mean value for 2011 was 0.96. However, the general picture as shown in Table 5.1, indicates that over the 10-year period under examination, the average value of all JSE listed firms was 1.04. In addition, South African small firms, according to Figure 5.18, have a Tobin's Q below 1(0.98) while their counterparts have a Tobin's Q above 1(1.33). This indicates that better-governed firms (in this study, large firms), tend to be associated with a higher market performance than their less well-governed counterparts (in this study, small firms).

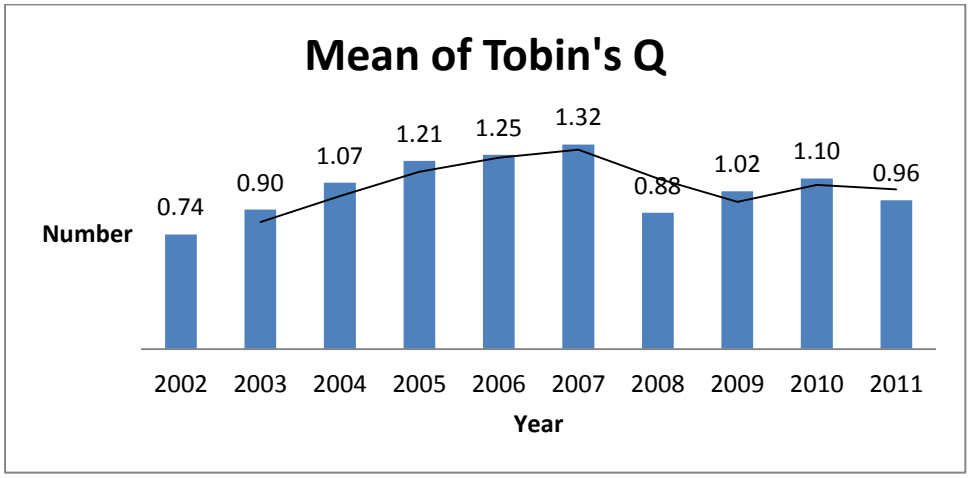


Figure 5.17: Mean of Tobin's Q of all sampled firms

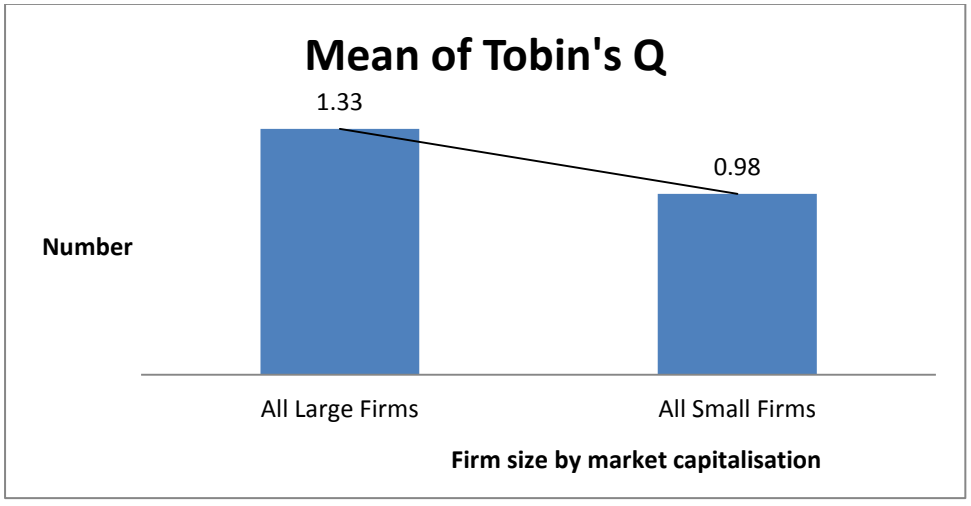


Figure 5.18: Mean of Tobin's Q of all sampled large and small firms

Chapter summary

Descriptive statistics in this study show the extent to which companies in South Africa comply with internal corporate governance structures. The accounting-based measure, ROA shows a steady increase from 2002 until reaching a peak in 2006. The market-based measure of firm performance, Tobin's Q, also shows a significant increase from 2002 to 2007. Both performance measures, ROA and Tobin's Q started decreasing from 2006 and 2007 respectively. The next chapter tests the seven hypotheses developed in Chapter 3.

CHAPTER 6: EMPIRICAL RESULTS AND DISCUSSION

6.1 Introduction

In the previous chapters, the theoretical and empirical issues, hypotheses and descriptive statistics of variables of interest were discussed. The previous chapter reveals that, in general, South African firms, more specifically large firms, comply with King II recommendations for corporate governance. This chapter discusses the empirical testing undertaken to investigate the relationship between internal corporate governance structures and firm performance. Section 6.2 discusses the classical assumptions of OLS multiple regressions. Section 6.3 presents correlations using Pearson's and Spearman's correlation matrix while section 6.4 reports multiple regressions (multivariate) results.

6.2 Assumptions

This study uses OLS multivariate regressions for hypotheses testing. However, as discussed in section 4.3 of chapter 4 the regression analysis is hampered by several assumptions such as normality, multicollinearity, linearity and homoscedasticity.

Table 6.1 presents the normality test of variables of interest based on skewness and kurtosis values. Although the studendized residual indicates no outliers, Cook's D test shows that as there are twelve observations which are influential, these are deleted from the data. Once the outliers have been deleted, all variables of interest show a normal distribution except for frequency of board meetings (FBMs), CEO non-dual (CND), director share-ownership (DEQTY) and the control variable big 5 industry (B5I). Thus, the normality test shows no serious deviation from normality.

Table 6.1: Skewness and kurtosis coefficients for variables of interest

	Skewness	Kurtsosis
BS	0.94	1.68
NEDs	-0.09	0.36
FBMs	2.55	17.01
CND	-2.61	4.82
BGD	0.97	0.6
Pcom	0.31	-1.91
DEQTY	-3.24	8.5
LEV	0.08	-0.52
lnFS	-0.1	0.06
B4A	-1.49	0.23
B5I	-3.5	10.27
ROA	0.16	0.19
Tobin's Q	0.00111	0.00078

As will be discussed further in section 6.3 below, the Pearson's and Spearman's correlation matrix, presented in Table 6.2, reveals that the correlation coefficient between independent variables is relatively low, indicating that there is no multicollinearity problem.

6.3 Correlations

Table 6.2 reports on both Pearson's parametric and Spearman's non-parametric correlation coefficients. The table shows that the coefficients of both the parametric and non-parametric correlations are very similar. The similar nature of the parametric and non-parametric correlation coefficients suggests that any remaining non-normalities in the variables will be mild, and these are similar to those reported in earlier studies (Cheung and Wei, 2006; Haniffa and Hudaib, 2006; Francoeur, Labelle and Sinclair-Desgagné, 2008). This appears to indicate that it may be statistically tolerable to use the OLS technique to estimate the specified econometric model.

The univariate analysis as shown in Table 6.2 suggests that a separate leadership structure (CEO non-duality), board gender diversity (BGD) and board size (BS) are significantly positively correlated with both performance measures for both Pearson's simple correlation coefficient and Spearman's rank correlation coefficient.

This indicates that CND, BGD and BS are related to superior firm performance. The findings also show that independent non-executive directors (INEDs) are positive and significantly correlated with Tobin's Q only, an indication that the market perceives the existence of independent non-executives as positive.

Apart from the above, Table 6.2 shows that correlations range between –0.01 and +0.43. None of the pairwise correlations between independent variables are above 0.8, indicating that the likelihood of multicollinearity issues arising from the OLS multiple regressions is low.

6.4 Multivariate data analysis

This section begins by discussing sensitivity tests and presents the main regression results.

6.4.1 Sensitivity test

A number of separate sensitivity checks are carried out with respect to empirical work (O'Connell and Cramer, 2010). As far as control variables are concerned, leverage, big 5 industry, big 4 audit firm size and firm size are statistically significant to measures of firm performance. The inclusions of these control variables have no impact on the reported results. Overall, the core results in Table 6.3, 6.4 and 6.5 are robust when the four control variables are included.

Table 6.2: Spearman's and Pearson's correlation matrix for all (N=1370) sampled firms

(Coefficient estimates are represented by brackets and p values are represented as * significant at 0.1%; *** significant at 1%; ** significant at 5%; *significant at 10%)***

	ROA	Tobin's Q	NEDs	FBMs	BGD	CND	DEQTY	BS	Pcom
ROA		(0.56)***	(-0.11)***	(-0.04)	(0.07)**	(0.09)***	(-0.01)	(0.07)**	(-0.07) **
Tobin's Q	(0.5)****		(0.06)*	(0.09)	(0.09)***	(0.1)***	(0.07)**	(0.15)****	(0.06)*
INEDs	(-0.09)***	(0.08)***		(0.3)****	(0.26)****	(0.07)**	(0.2)****	(0.24)****	(0.46)****
FBMs	(-0.04)	(0.05)	(0.25)****		(0.18)****	(0.09)***	(0.1)	(0.37)****	(0.24)****
BGD	(0.07)**	(0.1)***	(0.25)****	(0.12)****		(0.22)****	(0.09)***	(0.32)****	(0.24)****
CND	(0.07)***	(0.08)***	(0.08)***	(0.05)*	(0.2)****		(0.28)****	(0.29)****	(0.17)****
DEQTY	(-0.01)	(0.06)**	(0.2)****	(0.04)	(0.06)**	(0.28)****		(0.22)****	(0.17)****
BS	(0.04)*	(0.08)***	(0.21)****	(0.28)****	(0.24)****	(0.25)****	(0.2)****		(0.46)
Pcom	(-0.07)****	(0.08)***	(0.26)****	(0.22)****	(0.21)****	(0.17)****	(0.17)****	(0.43)****	

Notes: The bottom left half of the table presents Pearson's parametric correlation coefficients, while the upper right half presents Spearman's non-parametric correlation coefficients

Table 6.3: A summary of the hypotheses tests

Dependent Variable	**Return on assets (ROA)**					**Tobin's Q**			
Independent Variable	Hypothesis number	Hypothesised sign	Actual sign of result	Statistical significance of result	Conclusion (Hypothesis)	Hypothesised sign	Actual sign of result	Statistical Significance of result	Conclusion (Hypothesis)
Board Size	1	+	+	Significant(0.00)	Accept	+	+	Significant(0.00)	Accept
Frequency of board meetings	2	+	_	Insignificant	Reject	+	+	Insignificant	Reject
Independent non-executive directors	3	+	_	Insignificant	Reject	+	+	Significant(0.001)	Accept
Board Gender diversity	4	+	+	Insignificant	Reject	+	+	Insignificant	Reject
Presence of internal key committees	5	+	_	Insignificant	Reject	+	+	Insignificant	Reject
CEO non-duality	7	+	+	Significant(0.05)	Accept	+	+	Significant(0.05)	Accept
Dir share-ownership	8	+	_	Insignificant	Reject	+	+	Insignificant	Reject

Notes: The Table presents a summary of all the seven hypotheses tested and results for the econometricmodel.

6.4.2 Results based on the accounting measure of financial performance

Table 6.4 contains OLS multiple regression results for the econometric model based on the accounting-based measure of financial performance (ROA). To facilitate comparis on and comprehension, Table 6.3 presents a summary of all seven hypothesis and results for the econometric model for both the ROA and the Tobin's Q. Both Tables 6.3 and 6.4 do not include control variables.

The findings of the multivariate analysis in Table 6.4 suggest that the F-statistics are positive and statistically significant at the 1 per cent significance level. Therefore, the null hypothesis, that the coefficients of the seven corporate governance variables are jointly equal to zero can be rejected. It suggests that the coefficients on the seven corporate governance variables can jointly explain significant variations in the sampled firms' accounting returns. The adjusted R^2 is approximately 11 per cent. This means that at least 11 per cent of the variations in the sampled firms' accounting returns (ROA) can be explained jointly by the seven corporate governance variables.

Table 6.4 shows that board size is positive and statistically significant. This implies hypothesis one (see Table 6.3) that there is a statistically significant and positive relationship between board size and ROA, can be accepted. The results contradict that of earlier South African studies (Ho and Williams, 2003; Mangena and Chamisa, 2008), as well as other international evidence (Kiel and Nicholson, 2003; Shabbir and Padget, 2008; Guest, 2009). However, the results support those of existing studies that document a statistically significant and positive link between board size and accounting returns (Sanda, Mikailu and Garba, 2005; Haniffa and Hudaib, 2006; Mangena and Tauringana, 2008; Sheikh *et al*., 2013).

According to Table 6.4, frequency of board meetings (FBMs) is statistically insignificant and negative to ROA, implying that hypothesis two (see Table 6.3) can be rejected. This also implies that the recommendation of King II, that South African corporate boards must hold a minimum of four meetings a year is not empirically supported. Empirically, this finding is consistent with the result obtained by El Mehdi (2007) who reports a statistically insignificant association between frequency of board meetings and ROA. However, the finding does not support the results of Mangena and Tauringana (2006) who document a statistically significant and positive relationship between frequency of board meetings and ROA.

Table 6.4: ROA regression estimates of factors influencing internal corporate governance structures

Variable	Expected sign	Parameter estimate	Standard error	P-value
NEDs	+	-0.014	0.010	0.171
FBMs	+	-0.001	0.001	0.538
BGD	+	0.016	0.021	0.446
CND	_	0.013	0.007	0.07227 *
DEQTY	+	-0.007	0.008	0.377
BS	+	0.003	0.001	0.00002 ***
PCom	+	-0.013	0.004	0.00488 **
Intercept	?			
Multiple R^2		0.122		
Adjusted R^2		0.1127		
F-Statistics		13.13		0.000001 ***
Degrees of freedom		1050		

Notes : * Significant at 0.1%; *** significant at 1%; ** significant at 5%; * significant at 10%***

Table 6.5: Tobin's Q regression estimates of factors influencing internal corporate governance structures

Variable	Expected sign	Parameter estimate	Standard error	P-value
INEDs	+	355.923	115.546	0.00212 **
FBMs	+	16.098	12.618	0.202
BGD	+	126.152	247.921	0.611
CND	_	152.977	81.366	0.06037*
DEQTY	+	39.615	94.465	0.675
BS	+	33.308	7.854	0.00002 ***
PCom	+	47.732	52.056	0.359
Intercept	?			
Multiple R^2		0.1214		
Adjusted R^2		0.1121		
F-Statistics		13.05		0.0000001***
Degrees of freedom		1050		

Notes : * Significant at 0.1%; *** significant at 1%; ** significant at 5%; * significant at 10%***

Table 6.4 shows that the percentage of independent non-executive directors (INEDs) is negatively related to accounting returns, and is statistically insignificant. The statistically insignificant and negative relationship between the percentage of INEDs and ROA means that hypothesis three (see Table 6.3) cannot be supported. This finding contradicts many corporate governance codes, including King II, which promote the inclusion of more INEDs on corporate boards. Empirically, the finding also does not support the results of South African studies by Ho and Williams (2003) and Mangena and Chamisa (2008) that indicate that more INEDs impact positively on firm performance. However, it supports previous corporate governance evidence (Fich and Shivdasani, 2006; Haniffa and Hudaib, 2006), that identify a negative link between the percentage of INEDs and ROA.

The statistically insignificant relationship between board gender diversity and ROA proves that hypothesis four (see Table 6.3 and Table 6.4) can be rejected. As has been discussed in chapter five, this is empirically less surprising. This is so because the number of women serving on South African corporate boards is very small that they will not be able to make any significant impact on board decisions. The positive coefficients are consistent with the findings of Adler (2001) who reports that board diversity impact positively on accounting returns. However, this finding rejects the results of Shrader *et al*. (1997) who establish a negative association between board diversity and ROA.

The statistically significant and negative coefficient on the presence of key internal committees rejects hypothesis five (see Tables 6.3 and 6.4). The finding contradicts the call by King II that the presence of nomination, audit and remuneration committees improves financial performance. Empirically this finding agrees with the results of Bozec (2005).

The statistically significant and positive association between CEO non-duality and ROA accepts hypothesis six (see Tables 6.3 and6.4) that CEO non-duality has a significantly positive effect on firm performance. The results offer empirical support to the recommendations on corporate governance codes, including King II, that the roles of company chairperson and CEO should be split. Empirically, this finding is in agreement with previous studies that report a statistically significant and positive relationship between ROA and CEO non-duality (Haniffa and Hudaib, 2006; Ujunwa, 2012). However, these results contradict the findings of Donaldson and Davis (1991), Boyd (1995) and Arora (2011) that there is a statistically significant and positive nexus between CEO duality and ROA.

As shown in Table 6.4, director share-ownership is found to be negatively linked to accounting returns, but not statistically significant. This implies that hypothesis seven (see Table 6.3) is not supported, although the finding is consistent with the results of previous South African studies by Ho and Williams (2003) and Mangena and Chamisa (2008).

6.4.3 Results based on the market measure of financial performance

Table 6.5 contains OLS multiple regression results based on the market-based measure of financial performance (Tobin's Q). Similarly, the variables investigated in this model are the seven corporate governance variables.

Similar to ROA, Table 6.5 also shows that the F-statistics are positive and statistically significant at the 1 per cent significance level. Therefore, the null hypothesis that the coefficients of the seven corporate governance variables are jointly equal to zero can be rejected. This hypothesis suggests that the coefficients of the seven corporate governance variables can jointly explain significant variations in the sampled firms' accounting returns. As adjusted R^2 is approximately 11 per cent, at least 11 per cent of the variations in the sampled firms' market returns (Tobin's Q) can be explained jointly by the seven corporate governance variables.

As is evident from Table 6.5, and in agreement with accounting returns (ROA), board size is found to be positively related to the market-based measure of performance and to be statistically significant. This lends support to hypothesis one (see Table 6.3) that there is a statistically significant and positive relationship between board size and Tobin's Q. This also supports past evidence that documents a statistically significant and positive nexus between board size and Tobin's Q (Beiner *et al*., 2006; Henry, 2008; Mangena and Tauringana, 2008; Arora, 2011). The findng of this study, however, contradicts results of past studies that report a statistically significant and negative link between board size and Tobin's Q (Yermack, 1996; Vefeas 1999a and b; Haniffa and Hudaib, 2006; Cheng *et al*., 2008; Coles, Daniel and Naveen, 2008; Guest, 2009).

Table 6.5 indicates the statistically insignificant and positive nexus between frequency of board meetings and Tobin's Q. This shows that hypothesis two (see Table 6.3) is not empirically supported. The finding also implies that the recommendations of King II that South African corporate boards must hold a minimum of four meetings in a year cannot be empirically supported. It is also not in line with the results of those studies that report a statistically significant and negative association between frequency of board meetings and Tobin's Q (Vefeas, 1999a; Carcello, Hermanson, Neal and Riley, 2002; Fich and Shivdasani, 2006). However, the positive coefficient supports the results of Karamanou and Vefeas (2005) and Mangena and Tauringana (2006) that document a positive relationship between frequency of board meetings and Tobin's Q. Unlike the findings of this study, the results of Karamanou and Vefeas (2005), Mangena and Tauringana (2006) and Arora (2011) are statistically significant.

The statistically significant and positive relationship between INEDs and Tobin's Q lends empirical support to the recommendations of King II and hypothesis three (see Tables 6.3 and 6.5). The positive coefficient of the percentage of INEDs also lends support to the results of previous South African studies (Ho and Williams, 2003; Mangena and Chamisa, 2008). Mangena and Chamisa (2008) report, for example, that South African corporate boards dominated by INEDs are less likely to be suspended from the stock exchange.

As shown in Table 6.5, findings show that board gender diversity has no statistically significant impact on firm performance in South Africa. This fails to support hypothesis four (see Table 6.3). The findings do not lend support to the recommendations of King II and the general efforts in South Africa to diversify corporate boards. As has been explained already, this is empirically less surprising given the small number of women that are currently on South African corporate boards.

Contrary to the results of the ROA, Table 6.5 indicates that the existence of nomination, audit and remuneration committees are positively related to Tobin's Q, though insignificantly so. This rejects hypothesis five (see Table 6.5). Empirically, the findings are consistent with the results of prior studies that report a statistically insignificant relationship between board committees and Tobin's Q (Vafeas and Theodorou, 1998; Weir *et al*., 2002).

However, the finding does not offer empirical support to the results of previous studies that report statistically significant and positive or negative association between board committees and Tobin's Q (Vefeas, 1999a; Karamanou and Vefeas, 2005).

As with ROA, the statistically significant and positive coefficient of CEO non-duality accepts hypothesis six that separating the role of CEO and chairperson is positively significant to Tobin's Q (see Table 6.3). The results support the recommendations of King II that separating the roles of CEO and chairperson at board level impact positively on the market value of the firm. Empirically, this finding supports the resuls of Arora (2011) that CEO non-duality enhances firm value. However, this finding rejects the results of Mangena and Chamisa (2008) that purport role non-duality has no impact on the likelihood that a firm will be suspended from listing on the JSE in a sample of 81 South African listed firms.

The result of director share-ownership is positively insignificant to market performance (Table 6.5). This indicates that hypothesis seven is not supported (see Table 6.3). The statistically insignificant and positive link between director share-ownership and Tobin's Q contradicts the entrenchment hypothesis (Beiner *et al*., 2006), as well as the results of previous South African studies (Ho and Williams, 2003; Mangena and Chamisa, 2008).

Chapter summary

This chapter has focused on presenting and discussing the empirical results regarding the link between internal corporate governance structures and firm performance. Results show that both CEO non-duality and board size are statistically significant and positively related to both market-based and accounting-based performance measures, Tobin's Q and ROA, respectively. Further, independent non-executive directors exhibit a statistically significant and positive link to Tobin's Q while the presence of internal key board committees is statistically significant and negatively related to ROA. However, frequency of board meetings, board gender diversity and director share-ownership are all insignificant in both ROA and Tobin's Q. The next chapter integrates results of descriptive statistics, correlation matrix and OLS multiple regression to offer a conclusion to this study. Specifically, it provides a summary of results, policy implications, limitations, recommendations and potential avenues for further study.

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1 Introduction

This chapter discusses the conclusions of the study. It seeks to achieve five main objectives. First, section 7.2 summarises the research findings. Secondly, section 7.3 discusses the policy implications of the research findings, and where applicable, makes appropriate recommendations. Thirdly, section 7.4 summarises the contributions of the study to existing literature. Fourthly, section 7.5 highlights the limitations of the study. Finally, section 7.6 identifies potential topics for future research and improvements.

7.2 Summary of research findings

With no existing evidence in South Africa, the study sought to ascertain empirically whether South African listed firms that complied satisfactory with King II's stipulations, performed financially better than those that did not. Specifically, using a sample of 137 South African listed firms from 2002 to 2011 (a total of 1370 firm-year observations) with relevant corporate governance data collected directly from annual reports, this study examined the relationship between internal corporate governance structures and firm performance.

Different from previous studies, the corporate governance-financial performance nexus was investigated using a larger sample, which included all ten industries, as well as over a longer period of examination (10-year panel study). In this section, the findings of the study that were discussed in chapters five and six are summarised.

7.2.1 Impact of compliance on firm performance

The findings of this study show that the introduction of a code of best practice on corporate governance in South Africa in 2002 has resulted in more companies adopting the recommended corporate governance practices and an increase in performance has been strongly associated with sound corporate governance practices. Similar findings were reported by Reddy, Locke and Scrimgeour (2010) after the introduction of New Zealand Securities' Exchange Guidelines.

As explained in chapter 1, the study sought to determine whether compliance with King II reports translates into firm performance. Put differently, the study sought to ascertain whether better-governed listed firms could be linked to higher financial returns than their poorly-governed counterparts.

The OLS multiple regression results in Chapter 6 identified board size (BS), independent non-executive directors (INEDs) and CEO non-duality (CND) as statistically significant and positively related to firm performance. First, Figure 5.2 of chapter 5 reveals that large firms have an average board size of 14.53 as compared with 9.2 of small firms. Secondly, Figure 5.6 of chapter 5 exhibits that 50 per cent of the board of large firms consists of independent non-executive directors, while small firms have only 37 per cent independent non-executive directors on their boards. Thirdly, Figure 5.12 of chapter 5 shows that 99 per cent of all large firms separate the roles of CEO and the chairperson, while only 87 per cent of small firms comply with the relevant King II recommendation.

The market-based performance measure, Tobin's Q, is 1.33 for large firms and 0.98 for small firms. A lower Tobin's Q value as is evident in South African small firms suggests a less efficient governance mechanism (Weir *et al*., 2002). As already mentioned in subsection 4.3.3 of chapter 4, a Tobin's ratio greater than 1.0 indicates that market value is higher than the company's recorded assets. Based on the preceding information, large firms, which are relatively more compliant with the King II recommendations of corporate governance exhibit higher firm value than small firms. However, as shown in Figure 5.16 of chapter 5, a comparison of accounting-based performance measure, ROA, cannot be drawn as both large and small firms have ROA of 8 per cent.

7.3 Policy implications and recommendation

There are several implications of the findings. First, the findings suggest that regardless of the firm performance measure used, board gender diversity has no statistically significant impact on firm performance in SA. This implies no support for the recommendations of King II and for the general efforts in SA to diversify corporate boardson grounds of gender. As has been explained, this is empirically less surprising given the small number of women that currently serve on SA corporate boards.

The small number of women on corporate boards implies that women board members may be appointed to satisfy symbolic reasons or as a form of tokenism rather than for their potential contribution to the decision-making process in the boardroom. It may also be possible that due to the negative lingering legacies of Apartheid, female board members from diverse backgrounds tend to lack the necessary qualifications, skills and experience to contribute meaningfully to boardroom decision-making. This appears to suggest that board diversity may need to be improved before it can be expected to impact positively on the sampled firms' financial performance.

Secondly, the findings indicate that market returns (Tobin's Q) and accounting returns (ROA) are significantly higher if a firm has a larger board. As discussed, the significant positive association between board size and Tobin's Q is contrary to much of the UK and US evidence, which reports a significant negative relationship between board size and Tobin's Q. This implies that, unlike in the UK and US contexts, the board's ability to secure greater access to critical resources, that is often associated with larger boards, is valued higher by the South African stock market. Another implication seems to be that the valuation consequences of board size differ from firm to firm as do performance measures. In this regard, the decision by King II not to prescribe an 'ideal', namely, 'one-size-fits-all' board size may be seen as a step in the right direction. King II recommends that every board should consider whether or not its size, diversity and other demographics make it effective.

Thirdly, the findings indicate that firms (large firms) that separate the roles of board chairperson and CEO tend to be associated with higher market (Tobin's Q) returns. This implies that the policy of King II and the JSE's Listings Rules for South African firms to follow Cadbury-style suggestion to split the two roles, may be appropriate. Fourthly, the findings indicate that boards with a higher percentage of independent non-executive directors tend to be associated with lower accounting returns. However, having more independent non-executive directors on the board is perceived positively by the market. This seems to indicate that the Cadbury-style recommendation of King II and the JSE's Listings Rules that South African boards should comprise a majority of independent non-executive directors may be applicable in SA.

Fifthly, the findings suggest that frequency of board meetings has no statistically significant impact on firm performance, regardless of the performance measure used. However, contrary to ROA, Tobin's Q has a positive coefficient, which suggests that the market sees frequency of board meetings as a good practice. This could be because the market and investors believe, that if the more meetings are convened, more monitoring of their affairs will be conducted.

Sixthly, the findings are mixed when it comes to board sub-committees. The findings suggest that audit, remuneration and nomination committees are statistically insignificant for both ROA (but negatively related) and Tobin's Q (but positively related). However, though the findings are statistically insignificant for Tobin's Q, the positive relationship suggests that the market seems to put value on the establishment of all three board committees: audit, nomination and remuneration. This could be because investors and potential investors are at ease knowing that (1) financial controls are in place (audit committee), (2) the salaries of executive directors and non-executive directors are competitive and no exorbitant bonuses are paid (remuneration committee), (3) the board is skilful and experienced (nomination committee). This generally implies that the Cadbury-style suggestion of King II and the JSE's Listings Rules that South African listed firms should establish audit, nomination and remuneration committees may be applicable.

The seventh and final finding indicates that director share-ownership does not have any significant impact on either accounting or market measures. However, contrary to ROA, the coefficient for Tobin's Q is positive, which seems to suggest that the market believes that issuing stocks to directors might align their interests with those of shareholders and reduce the agency problem. In this regard, the ongoing attempts by the JSE to encourage diffused ownerships of listed firms might not necessarily be a positive development. The next section summarises the contributions of the study to the existing corporate governance literature.

7.4 Research contribution

Many existing cross-country studies in which samples are various South African listed firms, make use of corporate governance ratings based purely on analysts' perceptions rather than on a direct examination of companies' annual reports. A major problem with subjective analysts' corporate governance rankings is that they tend to be biased towards large firms (Beattie*et al*., 2004).

CLSA (2000) corporate governance rankings that have been used in earlier studies, for example, include only nine of the biggest South African listed firms.Arguably, this makes the sample used by earlier studies less representative, thereby limiting the generalisation of their findings to South Africa. Similarly, existing literature suggests that corporate governance structures and systems vary in different countries (West, 2006, 2009; Andreasson, 2009). In an attempt to address the above oversight, Ntim (2011), took a sample of 100 South African firms over a 5-year period. Though, Ntim's study addressed many of the shortcomings of previous studies, the results cannot be generalised as the sample excluded the financial sector. In addition, the sample size of 100 firms was inadequate, as was 5-year period of examination.

This study makes several new contributions, as well as extensions to existing corporate governance literature. First, using corporate governance data collected directly from company annual reports, the study presents for the first time, direct evidence on the relationship between internal corporate governance structures and firm performance in South Africa using a larger sample (137 firms) and a longer period of examination (10-year panel study). Secondly, no study exists in South Africa that compares the compliance levels of listed firms between small and large firms. This study fills the gap in the existing literature by presenting for the first time evidence on the levels of compliance between small and large firms. Specifically, it shows that while levels of compliance to the recommendations of King II have generally risen, substantial variations in governance standards still exist in South African listed firms. These differences, however, can largely be linked to the size of the firm (small or large firms).

Finally, and unlike most previous studies, problems that the potential presence of endogeneity may cause have been comprehensively addressed though a non-econometric approach using a 10-year panel study. This has arguably improved the reliability of the findings. The next section summarises the limitations of the study that serves as a guide to the interpretations of the study findings.

7.5 Research limitations

While the study findings are important, as in any other empirical study, there may be several limitations which need to be acknowledged.

First, there may be objections relating to the sample selection procedure and size. The sample size of 137 listed firms represents only 40 per cent of the total number of listed firms as at 9 August 2012, which statistical sampling (central limit theorem) theory accepts as a sufficiently large sample (Anderson, Sweeney, Williams, Freeman and Shoesmith, 2007). Even though this is the largest sample size that has been used for a corporate governance study in South Africa, it is still small. Nevertheless, the sample size of 137 firms was larger than any of those used in previous South African studies (Firer and Meth, 1986; Ho and Williams, 2003; April *et al*., 2003; Mangena and Chamisa, 2008; Ntim, 2011). Secondly, the 10-year period for this study seems to be short. This is, however, longer than those used in previous studies (Klapper and Love, 2004; Durnev and Kim, 2005; Beiner *et al*., 2006; Black *et al*., 2006a; Ntim, 2011).

Finally, corporate governance data were collected from annual reports only. This could have been supplemented with information from other sources, such as questionnaire survey and face-to-face interviews. However, and as has been discussed, unlike other media, the Companies' Act and the JSE Listings Rules mandate listed firms to issue annual reports. It has been argued that the mandatory nature of annual reports makes them a regular and reliable source of corporate governance information (Lang and Lundholm, 1993; Botosan, 1997). This is so because a firm can be sued for providing misleading information. Moreover, using companies' annual reports is in line with existing studies (Yermack, 1996; Cheung, Connelly, Limpaphayom and Zhou, 2007; Shabbir and Padget, 2008).

For these reasons, the findings need to be interpreted in the light of the above limitations. Also, these limitations represent topics for future research. In the next section, topics for future study are suggested.

7.6 Avenues for future research

There are several relevant topics for future study. First, the study has primarily examined the association between internal corporate governance structures and firm performance. Future studies could investigate how external corporate governance mechanisms, such as the market for corporate control, the managerial labour market, and the law, among others, affect firm performance.

Future studies could also analyse interactions or interdependences between internal and external corporate governance mechanisms and their impact on firm performance. Secondly, future studies could examine the relationship between internal corporate governance structures and cost of equity capital. If better-governed firms tend to be associated with higher financial returns, then such firms could theoretically be expected to be associated with lower cost of equity capital.

Thirdly, and with regard to the research design, event study methodology could be used by future researchers to investigate share price reaction to the adoption of the corporate governance provisions of King II. Future studies could also examine share price reaction to board changes, such as appointment, resignation, dismissal, death, and retirement of directors including chairperson, CEO, executive, non-executive and independent non-executive director. Finally, since this study has revealed that, in many respects, the level of compliance in large companies is relatively higher than that in small companies, a study comparing in large and small firms, the impact of internal corporate governance structures on financial performance would be interesting. The study should reveal the distinction of determinants of internal corporate governance structures between large and small firms. The results of the study would be a corporate governance model for large and small firms. A similar study could be conducted on the five large industries, namely, basic material, consumer goods, consumer services, industrials and financials.

Chapter summary

This study set-out to determine whether internal corporate governance structures, such as board size, independent non-executive directors, frequency of board meetings, board gender diversity and director share-ownership affected the performance of SA JSE listed firms from 2002 to 2011. Worth noting, irrespective of the performance measure used, board size and CEO non-duality appear to have a statistically significant positive relationship with both ROA and Tobin's Q. In addition, independent non-executive director is statistically significant and positively related to Tobin's Q, while the presence of internal key board committees is negatively significant to ROA. Frequency of board meetings, board gender diversity and director share-ownership have no effect on firm performance. The study also confirms that better governed firms perform better than poorly governed firms.

8. APPENDICES

Appendix 1: Definition of variables

Variable	Definition
Dependent variables	
Return on assets	Ratio of profit before taxes to total assets.
Tobin's Q	Ratio of a firm's total assets minus its total book value of ordinary equity plus total market value of equity divided by its total assets.
Independent variables	
Board size (BS)	The total number of directors on the board of a firm.
Independent non-executive directors (INEDs)	The number of independent non-executive directors divided by the total number of directors on the board of a firm.
Frequency of board meetings (FBMs)	The number of times the firm holds board meetings.
Board gender diversity (BGD)	The number of women on the board of a firm divided by the total number of directors on the board of a firm.
CEO non-duality (CND)	A binary 1 if CEO and chairperson roles are separate, 0 otherwise.
Internal key board committees (PCom)	A binary 1 if firm has established ALL key board committees, 0 otherwise.
Director share-ownership (DEQTY)	A binary 1 if CEO of firm has shares, 0 otherwise.

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