Internal Corporate Governance Structures and Firm Financial Performance: Evidence from South African Listed Firms

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Submitted in Fulfilment of the Requirements for the Degree of Doctor of Philosophy in Finance

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October 2009

ABSTRACT

This thesis contains the findings of an examination of the relationship between internal corporate governance structures and the financial performance of South African listed firms. Specifically, using a sample of 100 South African listed firms from 2002 to 2006 (a total of 500 firm-year observations) and corporate governance data collected directly from company annual reports, the thesis seeks to ascertain whether better-governed listed firms tend to be associated with higher financial returns than their poorly-governed counterparts. Unlike prior studies, the internal corporate governance-financial performance nexus is investigated by applying both the *compliance-index* and *equilibrium-variable* research methodologies.

The results based on the *compliance-index* model suggest that there is a statistically significant and positive association between the quality of the sampled firms' internal corporate governance structures and their financial performance. This finding is robust whether an accounting (return on assets) or a market (Tobin's Q) based measure of financial performance is used. Distinct from prior studies, an analysis of the impact of complying with the South African context specific affirmative action and stakeholder corporate governance provisions on the financial performance of South African listed firms is also investigated. The results indicate that compliance with the affirmative action and stakeholder corporate governance provisions impacts positively on the performance of South African listed firms.

By contrast, the results based on the *equilibrium-variable* model are generally mixed. First, regardless of the financial performance measure used, board diversity, the frequency of board meetings, and the establishment of board committees except the presence of a nomination committee seem to have no impact on firm financial performance. Second, board size is statistically significant and positively associated with Tobin's Q (Q-ratio), but statistically insignificant and negatively related to return on assets (ROA). Third, role or CEO duality is statistically significant and positively related to ROA, but statistically insignificant and negatively associated with the Q-ratio. Director shareownership is statistically insignificant and positively related to ROA, but statistically significant and negatively associated with the Q-ratio. Finally, the findings based on both the director shareownership squared and cubed do not support the statistically significant non-linear director shareownership-financial performance association reported by Morck *et al*. (1988).

The findings from a series of robustness or sensitivity analyses carried out suggest that the empirical results reported are generally robust to potential endogeneity problems.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

ACKNOWLEDGEMENTS

I wish to first and foremost express my profound gratitude to the Almighty God for seeing me through this course successfully. This thesis is also as a result of help from many people. First, I would like to express my deepest heartfelt gratitude and thanks to my supervisors, Professors Kwaku Opong and Jo Danbolt, for their valuable guidance and motivation. Your precious time spent on reading and commenting on drafts is sincerely appreciated. Any remaining errors and omissions, however, are my sole responsibility.

Second, my sincere thanks go to Professor Pauline Weetman for her regular constructive comments and valuable help, especially in developing the sample selection criteria and constructing the South African Corporate Governance Index. Third, I would like to extend my heartfelt gratitude to all the members of the PhD Progress Committee, the PhD Master Class, the Department of Accounting & Finance, as well as colleague research students for their constructive comments and suggestions at different stages of the study.

Fourth, I would like to thank fellow research students and leading academics who attended the 2006 to 2009 annual Scottish Doctoral Colloquia and the 2007 and 2008 British Accounting Association's Doctoral Colloquia. In particular, I would like to acknowledge constructive criticisms and suggestions offered by Professors Alan Goodacre, Andy Stark, Christine Helliar, Colin Clubb, Jim Haslam, John Holland, Peter Pope, Robert Gray, Simon Gao, and Stuart Turley, as well as Dr. Bruce Burton, Dr. Darren Henry, Dr. Jill Solomon, and Dr. John McKernan. Fifth, data collection for this study would not have been possible without the help of some people.

In particular, I would like to thank Mrs. Gillian MacIver for helping me in identifying the sources of data at the initial stages of this study, and Mr. Rapelang Motang of the JSE's Market Information Department for supplying me with the official sample of listed firms. Sixth, financial support from the Universities UK under the Overseas Research Students Awards Scheme, the Faculty of Law, Business & Social Sciences, and the Department of Accounting & Finance, University of Glasgow is gratefully acknowledged. Last but not the least, I extend my special appreciation to my family – my wife, Jemima, daughter, Felicia, parents, Joseph & Felicia, sisters, Joyce & Vida, & brothers, Douglas & George who have shared with me all the difficulties that I encountered throughout the course. My special apologies also go to anyone who might have directly or indirectly contributed to this study, but have accidentally not been explicitly acknowledged. May God Richly Bless Us All!

DEFINITION OF TERMS AND ABBREVIATIONS

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

Corporate governance is a very broad term. As will be explained further in chapter two, the study will concentrate only on 'internal' or 'narrow' corporate governance structures. As a result, corporate governance will be defined as "*a system by which companies are directed and controlled*", (Cadbury Report, 1992, s.2.5).

The term '*shareholding*' will refer to the corporate governance model that is predominantly found in Anglo-American companies or firms that normally operate in countries, such as the UK and US with a common-law legal system. It assumes that a firm should be run to *primarily* advance the interests of its *shareholders* or *owners*. The terms 'shareholding', 'shareholder' and 'Anglo-American' will be used interchangeably throughout this thesis.

The term '*stakeholding*' will refer to the corporate governance framework that is mainly found in Continental European and Asian firms or companies that usually operate in countries, like France, German, and Japan with civil-law legal system. Unlike the 'shareholding' model, it assumes that the purpose of a firm is to maximise the welfare of a number of stakeholders of the firm, including shareholders, employees, and local communities, amongst others. Interchangeability between the terms 'stakeholding', 'stakeholder' and 'Continental European-Asian' will be assumed throughout this thesis.

The term '*hybrid*' will refer to the 'integrated' or 'inclusive' form of corporate governance that has mainly been advanced by the King Reports on Corporate Governance for South Africa since 1994. It is described as a 'hybrid' because while it remains predominantly Anglo-American, substantial affirmative action and stakeholder demands are formally super-imposed on firms to comply with. This compels listed firms to depict some of the key features of both the 'shareholding' and 'stakeholding' models of corporate governance. The main assumption underlying the 'hybrid' or 'inclusive' corporate governance model is that a firm should attempt to recognise the interests of a wider group of stakeholders without subverting the primary interests of shareholders as the residual owners of the firm. The terms 'hybrid', 'inclusive' and 'integrated' will be used interchangeably throughout this thesis.

'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’ will refer to the 1994 King Report on Corporate Governance for South Africa, whilst ‘King II’ will refer to the 2002 King Report on Corporate Governance for South Africa.

Finally, in this study, the corporate governance-financial performance relationship will be examined via two models: the *compliance-index* and the *equilibrium-variable* models. In the case of the *compliance-index* model, corporate governance will be proxied by a compliance index, consisting of 50 corporate governance provisions based on the 2002 King Report on Corporate Governance for South Africa (‘King II’), known as the South African Corporate Governance Index (the SACGI).

The SACGI will further be split into two: the Social-SACGI and the Economic-SACGI. The Social-SACGI will contain 9 South African context specific affirmative action and stakeholder corporate governance provisions that are imposed on listed firms by King II. The Economic-SACGI will contain 41 conventional corporate governance provisions that are imposed on firms by King II. The relationships between the SACGI, the Social-SACGI and the Economic-SACGI and firm financial performance will then be investigated.

With respect to the *equilibrium-variable* model, corporate governance will be proxied by 11 individual corporate governance variables, including board diversity, board size, role or CEO duality, the percentage of non-executive directors, the frequency of board meetings, the establishment of key board committees (namely, audit, nomination, and remuneration committees) and director shareownership. To replicate the statistically significant non-linear relationship between director shareownership and financial performance reported by Morck *et al*. (1988), director shareownership will further be squared and cubed. The association between these 11 single corporate governance mechanisms and firm financial performance will then be analysed.

CHAPTER ONE

INTRODUCTION, BACKGROUND AND MOTIVATION

1. INTRODUCTION

This thesis generally seeks to explore the relationship between internal corporate governance structures and firm financial performance. Specifically, using a sample of 100 South African listed firms from 2002 to 2006 (a total of 500 firm-year observations), the thesis hopes to achieve five main objectives. First, the thesis attempts to assess the levels of compliance with the corporate governance provisions of the 2002 King Report on Corporate Governance for South Africa ('King II') among South African listed firms. Second, the study seeks to ascertain whether, on average, better-governed South African listed firms tend to be associated with higher financial returns than their poorly-governed counterparts. Specifically, it investigates whether better-governed firms based on the *equilibrium-variable* and *compliance-index* models will be associated with higher financial performance. Third, the thesis hopes to investigate the economic consequences of complying with the South African context specific affirmative action and stakeholder corporate governance provisions for South African listed firms. Fourth, the study intends to examine whether methodological choice can potentially influence research findings. Finally, the thesis seeks to assess the impact that the potential presence of endogeneity problems may have on research findings.

The rest of the chapter is organised as follows. Section 1.1 briefly summarises the recent corporate governance reforms pursued in SA (South Africa) as a background to the study. Section 1.2 sets out the major motivations for the study. Section 1.3 summarises the research questions and contributions of the study. Finally, section 1.4 presents how the remaining nine chapters of the thesis are organised, as well as a summary of the content of each of the nine chapters.

1.1 BACKGROUND: RECENT CORORATE GOVERNANCE REFORMS IN SA

As will be discussed further in chapter three, South Africa underwent extensive social, economic and political reforms in the late 1980s and early 1990s. An important part of the economic reform was an attempt to improve the way in which companies are governed. Domestic efforts at reforming corporate governance in South Africa also coincided with international attempts at enhancing the efficacy of corporate governance structures around the

world (e.g., Rossouw *et al*., 2002; Armstrong *et al*., 2006; West, 2006, 2009). These international attempts at reforming corporate governance had been preceded by well-publicised cases of major corporate collapse mainly in a number of developed economies in the 1980s, especially in the UK and US (Barrier, 2003, p.73; Mallin, 2006, p.4, 2007, p.2). There were widespread suspicions that poor corporate governance practices had played a central role in causing these corporate failures (Cadbury Report, 1992, para. 1.9; Jones and Pollitt, 2004). The UK, for example, responded by establishing the Cadbury Committee in 1991 and the publication of its recommendations of best corporate governance practices for UK listed firms in 1992.

With increasing domestic and international interests in corporate governance, the King Committee on Corporate Governance was formed in 1992 as a voluntary initiative at the instigation of the Southern African Institute of Directors (Rossouw *et al*., 2002, p.296). The main purpose of the King Committee (named after its chair, Mervyn King), was to consider how to promote the highest standards of corporate governance in South Africa (King Report, 2002, p.5).

The King Committee published its final report in November 1994. In general, and as will be discussed in detail in chapter three, the 1994 King Report (hereafter also known as 'King I') adopted many of the corporate governance standards and principles that had already been advocated in a plethora of national and international codes that were already in existence (e.g., Rossouw *et al*., 2002; Armstrong *et al*., 2006; Aguilera and Cuervo-Cazurra, 2009). In particular, the recommendations of the report were heavily informed by those of the UK's Cadbury Report of 1992, especially regarding its suggestions on internal corporate governance structures (West, 2006, p.435, 2009, p.11). Principally, and in line with the influential Cadbury Report, King I adopted an Anglo-American style unitary board of directors, consisting of executive and non-executive directors, who are primarily accountable to shareholders. In addition, South African firms were required to split the roles of chairman and CEO, set-up audit and remuneration committees, and their boards must at least consist of two non-executive directors.

Unlike the Cadbury Report, however, King I advocated for an '*integrated*' approach to corporate governance (Barrier, 2003, p.69). It also went beyond the Cadbury Report's main principles of *accountability, integrity and openness* to include *fairness and responsibility*, giving it a stakeholder rather than a shareholder orientation (e.g., West, 2006, 2009). This means that firms should go beyond the conventional financial and regulatory aspects of

corporate governance to taking into consideration the interests of a wider group of stakeholders (King Report, 2002, para. 5). Crucially, and in line with the Cadbury Report, King I was appended to the JSE's Listing Rules in which listed firms were voluntarily expected to 'comply' with its provisions or 'explain' in case(s) of non-compliance (Armstrong *et al*., 2006, p.214).

As will be evaluated in detail in chapter three, despite arguably formally institutionalising corporate governance in South Africa, and being instrumental in raising public consciousness about good corporate governance practices (Malherbe and Segal, 2003, p.193; Armstrong *et al*., 2006, p.215), King I was reviewed in 2002 for three main reasons. Firstly, King I was criticised for its own apparent weaknesses. For example, it was criticised for not enhancing the independence of corporate boards by abandoning the requirement for non-executive directors to be independent of management (Malherbe and Segal, 2003, p.193). More importantly, King I was criticised for failing to directly and firmly relate its recommendations to the major South African contextual stakeholder issues of HIV/Aids, black economic empowerment, employment equity, and the enviroment (Rossouw *et al*., 2002, p.300; Malherbe and Segal, 2003, p.195).

Secondly, and domestically, a number of affirmative action and stakeholder laws had been passed since 1994, and needed to be incorporated into the governance of mainstream corporations (Kakabadse and Korac-Kakabase, 2002, p.308). These included the Labour Relations Act 1995, the Employment Equity Act 1998, and the Black Economic Empowerment Act 2003, amongst others. They had been proposed by King I and were aimed at addressing the negative social and economic legacies of Apartheid (Murray, 2000, p.183; Swartz and Firer, 2005, pp.147, 158). In addition to legislative developments, South Africa had experienced a number of high profile domestic corporate failures since 1994. These included Macmed, Leisurenet, and Regal Treasury Bank (Sarra, 2004, p.10; Armstrong *et al*., 2006, p.215). These corporate failures were mainly attributed to poor corporate governance practices among directors and senior management.

Finally, and internationally, investors had lost billions of dollars during the 1997 and 1998 Asian economic crisis. The crisis demonstrated that macro-economic difficulties could be worsened by systematic failure of corporate governance resulting from ineffective oversight by corporate boards and scant recognition of the rights of minority shareowners (King Report, 2002, para. 22). Also, during the intervening years, a number of key international corporate governance codes had been released. In the UK, the Combined Code

had been published in 1998. Similarly, the Global Reporting Initiative (GRI) that seeks to move corporate reporting from a conventional 'single-bottom line' (i.e., economic) to a 'triple bottom line' (i.e., economic, social and environmental) reporting had been published in 2000 (King Report, 2002, p.275). Ostensibly, King I needed to be reviewed in the light of domestic and international developments since 1994.

In response to these developments, and again under the auspices of the Southern African Institute of Directors, a second King Committee on Corporate Governance (hereafter also called 'King II') was formed in August 2000. The Committee published its recommendations in March 2002. Unlike King I, King II is comprehensive in the coverage of corporate governance issues, including: board and directors; risk management; internal audit; integrated sustainability reporting; accounting and auditing; and compliance and enforcement.

Specifically, it builds on and expands King I's fundamental corporate governance principles of *accountability, fairness, responsibility* and *transparency* to include *discipline, independence* and *social responsibility* (King Report, 2002, para.18). It also replaces King I's '*integrated*' corporate governance approach with an '*inclusive or instrumental*' corporate governance approach throughout the report (King Report, 2002, para. 5). As will be discussed further in chapter two, the '*inclusive*' approach to corporate governance attempts to recognise the interests of a wider range of stakeholders without subverting the primary interests of shareholders as the residual owners of the firm.

Specifically, and as will also be explained in detail in chapter three, while King II maintains and strengthens the Anglo-American features of King I, it explicitly super-imposes substantial affirmative action and stakeholder demands, such as HIV/Aids, black economic empowerment, and employment equity on firms to comply with. This compels South African firms to depict some of the key features of both the '*shareholding*' (Anglo-American) and '*stakeholding*' (Continental European-Asian) models of corporate governance.

Arguably, this makes the South African corporate governance model unique or a 'hybrid' (Andreasson, 2009, pp.12, 18-27). In fact, King II has gained international recognition and received several endorsements from leading academics and policy-makers as an example of good corporate governance model in the world (e.g., Armstrong *et al*., 2006; Mallin, 2007; Andreasson, 2009; and West, 2006, 2009, amongst others). Mallin (2007, p.248), for example, states that "*South Africa has a well-developed corporate governance code. In fact, its revised Code published in 2002 is the most comprehensive in the world, and leading edge in terms of its outlook and recommendations*". In line with Cadbury and King I, King II

has been appended to the JSE's Listing Rules (JSE Listings Rules, 2007, subsections 3.84, 7.F.5-6, 8.63). Listed firms are similarly expected to voluntarily 'comply' with its provisions or 'explain' in case(s) of non-compliance.

1.2 **THE MOTIVATION, PROBLEM AND THE NEED FOR THE STUDY**

The current study on South Africa is motivated by three major reasons. Firstly, and as has been briefly described above, South Africa arguably offers an interesting research context where the corporate governance-financial performance association can be empirically examined. Specifically, the South African corporate environment shares some level of similarities and differences with the UK corporate context.

On the one hand, and unlike most African countries, South Africa appears to possess a relatively sound financial and corporate regulatory structure reminiscent of that of the UK. For example, and like the UK (see Mallin, 2006, pp.3 to 9 for a quick review of how corporate governance has evolved in the UK from the 1992 Cadbury Report to the 2005 Company Law Reform Bill), corporate governance seems to be fluidly developing. As has been explained above, a formal code of corporate governance was first introduced in November 1994 (King I), first reviewed in March 2002 (King II), and a second review is expected to be completed in July 2010 (King III) (Andreasson, 2009, pp.14, 21; West, 2009, p.10). In fact, according to Aguilera and Cuervo-Cazurra (2009, pp.379-380), South Africa was the sixth nation in the world (coming after the US, 1978; Hong Kong, 1989; Ireland, 1991; UK, 1992; and Canada, 1993), and the first developing country to issue a code of good corporate governance.

Similarly, the South African Companies Act 1973 has received several amendments to bring it up-to-date with international corporate governance practices (Armstrong *et al*., 2006, p.214). The Act is also currently being fully reviewed, and is similarly expected to be completed in 2010 to coincide with the publication of King III (Andreasson, 2009, pp.15-16, 21). To achieve greater supervision and monitoring of insider trading, rigorous insider trading law, the Insider Trading Act 1998 has been introduced, and enforcement is being strengthened (Malherbe and Segal, 2003, p.199; Armstrong *et al*., 2006, p.214). The JSE introduced more rigorous listing rules in 1995, and has carried out regular reviews in 2000, 2003, 2005 and 2007 to bring them in line with international standards (Malherbe and Segal, 2003, p.195; Armstrong *et al*., 2006, p.214).

Also, and unlike most African countries, South Africa has deep equity culture comparable with those of other emerging and developed economies (Deutsche Bank, 2002, p.7; Malherbe and Segal, 2003, pp.174-180). For instance, South Africa was ranked as the 6th largest emerging stock market, and 19th largest in the world by market capitalisation in 2007 (WFE, 2008). Similarly, market capitalisation to GDP ratio in 2007 for South Africa was 293%, and this compares with 139% and 113% for the UK and US (WFE, 2008), respectively. Arguably, these similarities with the UK offer exciting research context, where the corporate governance-financial performance nexus can be empirically investigated.

On the other hand, and as will be explained further below, the South African corporate landscape depicts significant differences with the UK corporate environment. However, and as has been briefly discussed above, like most developing Commonwealth countries, corporate governance structures and principles have mainly been borrowed from the UK. This brings into question as to the applicability of some of these corporate governance mechanisms to the South African corporate context. It also implies that the relationship between internal corporate governance structures and firm financial performance can be expected to be different from what has been reported for UK listed firms.

For example, and as has also been briefly explained above, while the South African corporate governance model is predominantly Anglo-American, King II formally imposes substantial affirmative action and stakeholder demands on listed firms to comply with. This raises an important local policy question of whether the current South African corporate governance ('hybrid') framework is sufficiently robust to effectively pursue the contrasting agenda of maximising shareholder returns and providing a meaningful protection of the interests of a larger stakeholder group (Kakabase and Korac-Kakabadse, 2002, p.313; Spisto, 2005, p.84; Andreasson, 2009, p.1).

Similarly, as an emerging market, ownership of firms is relatively concentrated. As will be discussed further in chapter seven, block shareownership in this study, for instance, ranges from 7% to 99% with an average of 60%. Director shareownership is also between 0% and 94% with a mean of 20%. Also, a study by Barr *et al*. (1995, p.18) indicates that the use of complex cross-shareholdings and pyramidical structures are pervasive among South African listed firms.

By contrast, UK firms have relatively dispersed ownership structure. For example, a recent study by Florackis and Ozkan (2009, p.505) suggests that the average UK block ownership is 29%, whereas the mean UK director ownership is 9%. This is very similar to the

average block (29%) and director (3%) ownership levels reported by Shabbir and Padget (2005, p.14) for a sample of UK listed firms.

As has been suggested by Haniffa and Hudaib (2006, p.1035), this implies that unlike the UK, the market for corporate control and managerial labour through which non-performing companies and managers are expected to be disciplined may not be effective in South Africa. Further, and as a developing country, South Africa has a weak record of implementing and enforcing corporate regulations (Armstrong, 2003, p.2; IIF, 2007, p.7). This also raises an important international policy debate (Aguilera and Cuervo-Cazurra, 2009, p.376), as well as serious doubts as to whether the current UK-style self-regulation or voluntary compliance regime ('comply or explain') rather than the US-style mandatory regime ('comply or else') will be effective in improving corporate governance standards among South African listed firms.

Also, even though South Africa accounted for more than 80% of African total continental stock market capitalisation in 2007 (WFE, 2008), for instance, it is considerably smaller compared with the UK. Specifically, it has fewer numbers of listed firms, lower liquidity, and smaller, but concentrated total market capitalisation in relation to the UK. For example, there were 411 firms listed on the JSE with a total market capitalisation of about $828 billion, and a liquidity ratio of 51% in 2007 (WFE, 2008). By contrast, 3,307 firms were listed on the London Stock Exchange with a total market capitalisation of about $4 trillion, and a liquidity ratio of 268% in 2007 (WFE, 2008). This implies that the impact of conventional UK-style corporate governance mechanisms on the financial performance of South African listed firms may be different from UK listed firms.

The second major motivation for the current study on South Africa is that unlike most African countries, it is home to some of the world's largest multinationals. For example, Forbes (2009) ranking of the largest 2000 companies by market value in the world suggests that over 30 are based in South Africa. Further, 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 *et al*., 2006, p.212). This means that unlike most African countries, any corporate governance failures may have serious implications far beyond South Africa and Africa.

The third and final major motivation for this study is that despite arguably offering 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 and Akinboade, 2003, p.2; Okeahalam, 2004, p.360; Mangena and Chamisa, 2008, pp.28, 42). The paucity of rigorous empirical corporate governance studies on South Africa arguably offers opportunities to make contributions to the extant literature.

However, there are a limited number of cross-country studies whose samples include a number of South African listed firms that need to be acknowledged. These studies are: Klapper and Love (2004); Durnev and Kim (2005); Chen *et al*. (2009); and Morey *et al*. (2009). Klapper and Love (2004) and Durnev and Kim (2005) have 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 include South Africa. Chen *et al*. (2009) have also used the same CLSA subjective analysts' corporate governance rankings to investigate the relationship between corporate governance and cost of equity capital. Similarly, using a cross country sample that includes South Africa, Morey *et al*. (2009) have analysed the nexus between the *AllianceBernstein*'s subjective analysts' corporate governance ratings and firm value. The results of these studies suggest 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.

As will be discussed further in chapter four, however, all four prior cross-country studies arguably suffer from a number of limitations. First, all four prior studies 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 examination of company annual reports (Beattie *et al*. 2004, p.210). Their findings may, therefore, be considered to be of limited evidential value.

Crucially, prior research suggests that subjective analysts' corporate governance ratings tend to be biased towards large firms (e.g., Botosan, 1997; Hassan and Marston, 2008). The CLSA 2000 corporate governance rankings that has mainly been used by prior studies, for example, includes only nine of the largest South African listed firms (CLSA, 2000, p.13). Arguably, this makes the sample used by prior studies to be less representative, and thus limits the generalisation of their findings for South African listed firms.

Second, and as will be discussed further in chapter two, the extant literature suggests that corporate governance structures and systems vary across different countries (West, 2006,

p.433; Aguilera and Cuervo-Cazurra, 2009, p.383; Filatotchev and Boyd, 2009, p.262). However, subjective analysts' corporate governance rankings are standardised such that they are unable to reflect institutional, cultural, and contextual differences in corporate governance structures across individual countries and systems. This implies that they are unable to assess how compliance with the South African context specific affirmative action and stakeholder corporate governance issues impact on the financial performance of South African listed firms.

Finally, despite increasing concerns that the presence of endogenous problems can confound research findings (e.g., Himmelberg *et al*. 1999; Chenhall and Moers, 2007a and b), with the exception of Durnev and Kim (2005), prior 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 brings into doubt the reliability of the results of these prior cross-country studies that include South Africa.

1.3 **RESEARCH QUESTIONS AND CONTRIBUTIONS**

Therefore, given the similarities and differences between the South African and UK corporate environments as outlined above, but a paucity of empirical studies on South Africa, this thesis seeks to empirically answer the following research questions. First, what is the level of compliance with the corporate governance provisions of King II among South African listed firms? Second, what is the relationship between internal corporate governance structures and the financial performance of listed firms in South Africa? Specifically, what is the relationship between better-governed firms based on the *equilibrium-variable* and *compliance-index* models and the financial performance of listed firms in South Africa? Third, how does compliance with the South African context specific affirmative action and stakeholder corporate governance provisions impact on the financial performance of listed firms in South Africa? Fourth, what impact does the potential presence of endogeneity problems have on research findings? Finally, does the use of the *equilibrium-variable* model or the *compliance-index* model have the potential to influence research findings?

By addressing the above research questions, this thesis hopes to make several new contributions, as well as extensions to the extant corporate governance literature. First, using a sample of 100 South African listed firms from 2002 to 2006 (a total of 500 firm-year observations) and corporate governance data collected directly from company annual reports,

the study aims to offer for the first time direct evidence on the relationship between internal corporate governance structures and firm financial performance in South Africa.

As will be explained further in chapters four and five, unlike prior cross-country studies, the sample will be constructed in such a way that there will be a balance between large and small firms. This may enhance the generalisation of the findings. Similarly, the *compliance-index* that will be used - the *South African Corporate Governance Index* (the *SACGI*) will incorporate conventional, as well as stakeholder corporate governance provisions that are unique to the South African corporate context. Consistent with the results of prior studies, the findings based on the *compliance-index* will indicate that there is a statistically significant and positive relationship between the quality of the sampled firms' corporate governance and their financial performance. By contrast, the results based on the *equilibrium-variable* model will indicate either a statistically weak or no relationship between the eleven single corporate governance structures and firm financial performance.

Second, the study seeks to offer for the first time evidence on the economic consequences of complying with the affirmative action and stakeholder corporate governance provisions for South African listed firms. Contrary to theoretical expectations, the findings will suggest that compliance with the affirmative action and stakeholder corporate governance provisions (the *Social-SACGI*) impact positively on the financial returns of South African listed firms. Third, the Institute of International Finance (IIF) 2007 report on corporate governance practices in South Africa suggests that even though the King Code is voluntary, no study has been done to ascertain the levels of compliance among listed firms. Specifically, it states "*…However, to date, no study has been conducted to assess the level of compliance with corporate governance-related requirements among listed companies or to verify the reasons for non-compliance*", (IIF, 2007, p.1). Similar concerns have also been expressed by Malherbe and Segal (2003, p.193).

As will be discussed further in chapter six, this study aims to fill this gap in the existing literature by offering for the first time direct evidence on the levels of compliance with the corporate governance provisions recommended by King II among South African listed firms. Specifically, the findings will show that while compliance with the recommendations of King II has generally improved, substantial variations in corporate governance standards still exist among South African listed firms. The findings will indicate further that the differences in the levels of compliance with the corporate governance

provisons of King II among South African listed firms can largely be explained by firm size, and moderately by industry.

Fourth, the study hopes to make for the first time a comparison of research findings based on estimating a *compliance-index* (the *Economic-SACGI*) model and *equilibrium-variable* model. Generally, the results will suggest that methodological choice can potentially influence research findings with important implications for future research. Specifically, while the results that will be based on the *compliance-index* (the *Economic-SACGI*) model will be conclusive, those that will be based on the *equilibrium-variable* model will be conflicting. Finally, and unlike most prior studies, problems that the potential presence of endogeneity may cause will be comprehensively addressed in chapter nine.

These include estimating: a lagged corporate governance-financial performance structure; an instrumental variable model; a two-stage least squares model; and a changes model. This will arguably improve the reliability of the findings. The results from these sensitivity analyses that will be discussed in chapter nine will suggest that the findings that have been reported in chapter eight are generally robust to potential endogenity problems.

1.4 **THESIS ORGANISATION**

The rest of the thesis is divided into nine chapters and organised as follows. As has been explained above, the study focuses on the impact of internal corporate governance structures on the financial performance of South African listed firms. However, corporate governance is broad. Chapter two will, therefore, seek to offer a working definition of corporate governance. As has been briefly described above, the current South African corporate governance framework possesses some of the features of both the '*shareholding*' (Anglo-American) and '*stakeholding*' (Continental European-Asian) models of corporate governance. Therefore, to facilitate a better appreciation of the South African corporate governance model, the chapter will also explore legitimate differences, such as theoretical assumptions, major features, and weaknesses between the '*shareholding*' and '*stakeholding*' corporate governance models.

Chapter three will contain a description and where applicable, a review of the South African corporate governance framework. Specifically, the external corporate governance environment and some of the challenges facing the regulatory system will first be briefly presented. The internal corporate governance landscape will then be described in detail. These

will include the South African Companies Act 1973, the Insider Trading Act 1998, the JSE's 2007 Listings Rules, as well as the 1994 (King I) and 2002 (King II) King Reports on Corporate Governance for South Africa. For each of these internal corporate governance legislation or code, and where applicable, its origins, corporate governance provisions, strengths, weaknesses and challenges will be comprehensively discussed.

A review of the theoretical and empirical internal corporate governance-financial performance relationship literature will be carried out in chapter four. Specifically, the chapter will be divided into two main parts. In the first part, a discussion of existing theories that attempt to link internal corporate governance structures to firm financial performance will be carried out. Recognising the often complex and multi-disciplinary nature of corporate governance (Filatotchev and Boyd, 2009, pp.258-260), a multiple theoretical perspective will be adopted in constructing and explaining the complex relationship between internal corporate governance structures and firm financial performance. Similarly, much of the prior studies on the internal corporate governance-financial performance association have been conducted around agency theory (Filatotchev and Boyd, 2009, p.258). Agency theory will, therefore, be adopted as the main theoretical framework for the study. However, and in line with recent calls (e.g., van Ees *et al*., 2009; Filatotchev and Boyd, 2009), where appropriate, agency theory will be supplemented with information asymmetry and managerial signalling, stewardship, organisational, political cost, and resource dependence theories.

The second part of chapter four will contain a discussion of the extant empirical literature that seeks to link internal corporate governance structures with firm financial performance. The discussion will centre on two main models: the *equilibrium-variable* and the *compliance-index* models. Under the *equilibrium-variable* model, the prior literature on 11 corporate governance variables, including board diversity, board size, role or CEO duality, the percentage of non-executive directors, the frequency of board meetings, the establishment of key board committees (namely, audit, nomination, and remuneration committees), director shareownership, director shareownership squared, and cubed will be discussed. For each variable, the extant theoretical literature will first be discussed, followed by a review of the prior empirical literature. Hypotheses will then finally be developed on the basis of the review for each variable.

With regard to the *compliance-index* model, prior studies that have examined the corporate governance-financial performance nexus using compliance or composite corporate governance indices will be discussed. The *South African Corporate Governance Index* (the

SACGI) that will be used in this study contains 50 corporate governance provisions from the 2002 (King II) Report on Corporate Governance for South Africa. Also, on the basis of the review, hypothesis eight will be developed for the *SACGI*. In chapter eight, the *SACGI* will further be split into *Social-SACGI* and *Economic-SACGI*. The *Social-SACGI* will contain 9 affirmative action and stakeholder corporate governance provisions that are unique to the South African corporate context, while the *Economic-SACGI* will be made up 41 conventional corporate governance provisions.

The review will indicate that irrespective of the context or model, the empirical literature is generally mixed. However, it will indicate that the mixed evidence is more pronounced with regard to the *equilibrium-variable* model than the *compliance-index* model. Also, it will show that whereas the *compliance-index* model literature is quite advanced in the US, the non-US evidence is very limited apparently due to lack of sufficient data. The literature regarding South Africa and Africa is virtually non-existent. It will, however, be argued that the dearth of prior empirical studies also offers an opportunity to make substantial contributions to the extant literature.

Chapter five will discuss the research design, namely the sources of data and methodology that will be applied in the empirical parts of the thesis. As at 31/12/2006 when the data collection began, a total of 402 firms from 10 major industries were officially listed on the main board of the JSE. For regulatory and capital structure reasons, financial and utility firms will be excluded, leaving a total 291 firms to be sampled from 2002 (when King II first became applicable) to 2006 (when data collection first began). Firm-level corporate governance data will be collected from annual reports. Using the *perfect information database* and direct contacts, complete annual reports will be obtained for 169 firms from 2002 to 2006. One hundred (100) firms will be stratify sampled from 2002 to 2006 (a total of 500 firm-year observations) based on firm size and industry. Corresponding financial performance data will be collected from *DataStream*.

Two models, the *equilibrium-variable* and the *compliance-index* models will be estimated using Ordinary Least Squares (OLS) regression technique. Under the *equilibrium-variable* model, the 11 corporate governance variables mentioned above will be estimated separately to explain two financial performance proxies, namely Tobin's Q (a market based measure), and return on assets (an accounting based measure). The rationale for using two financial performance proxies will be to ascertain the robustness of the findings to both accounting (insiders like managers) and market (outsiders like investors) based measures of

financial performance. With respect to the *compliance-index model*, the *SACGI* containing 50 corporate governance provisions (the provision will be binary scored such that the presence of an item is assigned a value of '1' or '0' otherwise) will also be estimated to separately explain Tobin's Q (Q-ratio) and return on assets (ROA).

To control for potential omitted variables bias, eight control variables, including firm size, capital structure, sales growth, capital expenditure, audit firm size, dual-listing, industry, and year dummies will be introduced in estimating both the *equilibrium-variable* and the *compliance-index* models. The robustness or sensitivity of the results to the potential presence of endogeneity problems will be addressed by estimating: a lagged corporate governance-financial performance structure; an instrumental variable model; a two-stage least squares model; and a changes model. Finally, the chapter will discuss methodological limitations and data collection difficulties encountered in this study. These limitations will be discussed further in chapter 9.

Chapter six will analyse the levels of compliance with the *South African Corporate Governance Index* (the *SACGI*) among the sampled firms. For the 50 individual corporate governance provisions, it will show that there are variations in the levels of compliance in 48 (96%) of them. At the aggregate level, it will indicate that the corporate governance scores range from a minimum of 3 (6%) to a maximum of 49 (98%) with the average sampled firm complying with 30 (60%) of the 50 corporate governance provisions that will be examined. Further examination of the corporate governance scores will suggest that the variation in the levels of compliance can largely be explained by firm size, and moderately by industry. Analysis of the levels of compliance with the *Social-SACGI* (the nine South Africa context specific affirmative action and stakeholder provisions) will also indicate considerable amount of variability in the levels of compliance with the *Social-SACGI*. The aggregate scores will range from 0% (0 out of 9) to a maximum of 100% (9 out of 9) with the average sampled firm complying with 67% of the 9 South African context specific affirmative action and stakeholder provisions that will be investigated.

Chapter seven will contain descriptive statistics, as well as test the Ordinary Least Squares (OLS) assumptions. The chapter will be divided into two main parts. The first part of the chapter will present summary descriptive statistics of the dependent (financial performance), independent (corporate governance), and other independent (control) variables. Since OLS multivariate regression technique is used to test all the hypotheses that will be discussed in chapters four and five, the second part of chapter seven will test the OLS

assumptions of *multicollinearity, autocorrelation, normality, homoscedasticity,* and *linearity*. The analyses will generally indicate that there are no serious violations of the OLS assumptions, and thus statistically appropriate to carry out OLS regressions.

Chapter eight will present the empirical results. The empirical results based on the *equilibrium-variable* model will first be discussed, followed by an analysis of the results based on the *compliance-index* model. For each model, results based on the accounting measure (ROA) of financial performance will first be presented, followed by results based on the market measure (Q-ratio) of performance. A comparison of the results based on the *equilibrium-variable* and *compliance-index* models will then be made.

The results based on the *compliance-index* model will indicate that regardless of the financial performance measure used, there is a statistically significant and positive relationship between the quality of the sampled firms' internal corporate governance (the *SACGI*) and their financial performance. Similarly, the results will suggest that irrespective of the financial performance proxy used, compliance with the South African context specific affirmative action and stakeholder provisions (the *Social-SACGI*) has a statistically significant and positive impact on the financial fortunes of the sampled firms.

By contrast, the results based on the *equilibrium-variable* model will generally be mixed. Regardless of the financial performance measure used, board diversity, the frequency of board meetings, and the establishment of board committees except the presence of a nomination committee will seem to have no impact on firm financial performance. Board size will be statistically significant and positively associated with the Q-ratio, but statistically insignificantly and negatively related to ROA. Third, role or CEO duality will be statistically significant and positively related to ROA, but statistically insignificant and negatively associated with the Q-ratio. Director shareownership will be statistically insignificant and positively related to ROA, but statistically significant and negatively associated with the Q-ratio. Finally, the findings based on both the director shareownership squared and cubed will not support the statistically significant non-linear director shareownership-financial performance association reported by Morck *et al*. (1988).

Chapter nine will report results based on the robustness or sensitivity analyses. Specifically, the robustness or sensitivity of the results to the potential presence of endogeneity problems will be addressed by estimating: a lagged corporate governance-financial performance structure; an instrumental variable model; a two-stage least squares (2SLS) model; and a changes model. The results based on a lagged corporate governance-

financial performance structure and an instrumental variable model will suggest that the findings that have been presented in chapter eight are generally robust to the presence of any potential endogeneity problems. The results based on the two-stage least squares (2SLS) model will offer evidence of a statistically significant interdependences among alternative corporate governance mechanisms, as well as between the financial performance proxies and the corporate governance structures. Finally, the robustness or sensitivity results based on the changes model will generally suggest that an increase (a decrease) in the sampled firms' corporate governance standards will be associated with a positive, but a statistically insignificant increase (decrease) in their reported financial performance.

Chapter ten will present the conclusions of the thesis. Specifically, it will offer 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.

CHAPTER TWO

DEFINING CORPORATE GOVERNANCE

2. INTRODUCTION

This chapter attempts to define corporate governance. Its central aim is to offer a working definition of corporate governance in addition to discussing the major corporate governance models found within the extant international governance literature and context. The main rationale is to paint the broader international corporate governance picture within which the South African corporate governance framework that will subsequently be discussed in chapter three can be better appreciated. The remainder of this chapter is organised as follows. Section 2.1 offers a working definition of corporate governance. Section 2.2 reviews the main corporate governance models as found within the international literature and context, while section 2.3 summarises the chapter.

2.1 DEFINING CORPORATE GOVERNANCE

The last three decades has seen the term '*corporate governance*' emerged clearly as an independent field of study (e.g., Keasey *et al*., 1997; Denis, 2001). Its scope has also witnessed great expansion such that it is now an amalgam of different disciplines, including accounting, economics, ethics, finance, law, management, organisational behaviour, and politics, among others, with no universally accepted definition (Rwegasira, 2000, p.258; Mallin, 2007, p.11; Solomon, 2007, p.12). As a corollary, there exists a large number of definitions of corporate governance (e.g., Cadbury Report, 1992; Shleifer and Vishny, 1997; Denis and McConnell, 2003; OECD, 1999, 2004; and Solomon, 2007, amongst others).

Despite the existence of heterogeneous definitions, however, researchers frequently classify the existing corporate governance definitions as either '*narrow*' or '*broad*'. As a prelude, the narrow-broad dichotomisation is based on the extent to which a corporate governance regime essentially focuses on satisfying the parochial interests' of shareholders (Sternberg, 2004, p.28; West, 2006, p.434) or meeting the broader interests of diverse societal stakeholder groups (Letza *et al*., 2004, p.243; Gillan, 2006, p.382).

For example, corporate governance has narrowly been defined as "*…the ways in which suppliers of finance to corporations assure themselves of getting a return on their investment",*

(Shleifer and Vishny, 1997, p.737). This view considers a corporation as an extension of its owners, with a central aim of providing goods or services to customers, primarily to maximise the wealth of its owners (West, 2006, p.433). The Cadbury Report (1992, s.2.5) also narrowly defines corporate governance as being concerned with the "*system by which companies are directed and controlled"*. Similarly, it has been defined as *"a system whereby directors are entrusted with responsibilities and duties in relation to the direction of a company's affairs*", (Sheikh and Chatterjee, 1995, p.5) or "*ways of ensuring that corporate actions, agents and assets are directed at achieving the corporate objective established by the corporation's shareholders*", (Sternberg, 2004, p.28).

These definitions suggest that in order to maximise the wealth of owners, three key corporate governance structures of the corporation emerge, namely; a general assembly of shareholders, a board of directors, and an executive management (Letza *et al*., 2004, p.243; West, 2006, p.434). In this case, the corporation is primarily accountable to shareholders, and as such they have the power to appoint directors and to satisfy themselves that the right governance mechanisms have been instituted (Cadbury Report, 1992, s.2.5; Rossouw *et al*., 2002, p.290).

Also, and at least in theory, the shareholders have the power to reject decisions of the board or remove them from office in a general meeting. By contrast, the board of directors' has the responsibility to ensure that the company is properly governed. These responsibilities include setting the company's strategic aims, appointing or firing the management team, supervising the management team and reporting to the owners of the company on their stewardship (Cadbury Report, 1992, s.2.5; Rossouw *et al*., 2002, p.290).

In short, a governance structure of a firm is considered as '*narrow*' if it mainly concentrates on how key internal governance mechanisms interact to maximise its value primarily for the benefit of shareholders instead of enhancing the interests of other potential stakeholder, like customers, employees, creditors, suppliers and the local community, amongst others.

Contributing to the foreword of the World Bank Report (1999, p.vii), Sir Adrian Cadbury defines corporate governance broadly as being "*…concerned with holding the balance between economic and social goals and between individual and communal goals…the aim is to align as nearly as possible the interests of individuals, corporations, and society*". Similarly, the OECD (2004, p.11) broadly defines corporate governance as "*…a set of relationships between a company's board, its shareholders and other stakeholders. It also*

provides the structure through which the objectives of the company are set, and the means of attaining those objectives, and monitoring performance, are determined" or "*…the system of checks and balances, both internal and external to companies, which ensures that companies discharge their accountability to all their stakeholders and act in a socially responsible way in all areas of their business activity*", (Solomon and Solomon, 2004, p.14).

These definitions imply that corporate governance goes beyond the immediate internal corporate structures to include external corporate governance mechanisms and stakeholders (OECD, 2004, p.12; Gillan, 2006, p.382; Mallin, 2007, 11). Typically, and as has been explained above, internal corporate governance structures may include the general assembly of shareholders, the board of directors, and the executive management. By contrast, the external corporate governance mechanisms may consist of the legal system, the market for managerial labour and corporate control, regulators, local communities, cultural, political, social and economic policies, and institutions within which corporations operate.

In this case, the corporation is considered to be a social entity that has accountability and responsibility to a variety of stakeholders, encompassing shareowners, creditors, suppliers, customers, employees, management, government and the local community (Freeman and Reed, 1983, p.89; West, 2006, p.434; Mallin, 2007, p.50). The aim of corporate governance is to facilitate the efficient use of resources by reducing fraud and mismanagement with the view not only to maximise, but also to align the often conflicting interests of all stakeholders (Cadbury, 1999, p.vii; King Report, 2002, p.5).

In brief, and in contrast to the '*narrow'* characterisation, a '*broad*' corporate governance structure's central pre-occupation is to examine how both external and internal governance mechanisms can be run to maximise firm value and/or performance for the mutual benefit of shareholders and other potential stakeholders.

As a corollary, the extant literature has mainly theorised or described corporate governance in terms of these two presumably diametrically opposing models: the '*narrow*' and '*broad*' models (e.g., Rossouw *et al*., 2002; Agle *et al*., 2008). A '*narrow*' corporate governance structure is also usually referred to as '*shareholding*' because it considers companies to be primarily responsible and accountable to their shareholders. By contrast, a '*broad*' corporate governance structure is also normally called '*stakeholding*' because it perceives firms to be responsible and accountable to all stakeholders of whom shareowners are merely one.

Of crucial note, the models have country and legal origins. Specifically, it has been suggested that the '*shareholding*' model tends to be common in Anglo-American countries, such as the UK and US with common law origin, whilst the '*stakeholding*' corporate governance structure is usually found in Continental Europe and Asia, like Germany and Japan with civil or Scandinavian law origin (Mallin, 2006, p.2; Aguilera and Cuervo-Cazurra, 2009, p.379). Further, and as will be discussed further below, the extant literature suggests that the two corporate governance models are based on legitimate differences in theoretical assumptions, major features, solutions and weaknesses (e.g., Weimer and Pape, 1999; Letza *et al*., 2004; Andreasson, 2009).

South Africa arguably presents a unique corporate governance framework. Historically, South Africa has an Anglo-American or a common law origin (La Porta *et al*., 1998, p.1130; Mallin, 2007, p.249), with predominantly '*shareholding*' corporate governance structures (Armstrong *et al*., 2006, p.210; West, 2009, p.11). However, and as will be explained further in subsection 3.3.2 of chapter three, recent corporate governance reforms (i.e., the 1994 and 2002 King Reports) attempt to formally super-impose a number of affirmative action and stakeholder demands on listed firms. This has compelled listed firms to depict almost in equal measure, some of the major characteristics of both the '*shareholding*' and '*stakeholding*' corporate governance models (e.g., Kakabadse and Korac-Kakabadse, 2002; Spisto, 2005).

Chapter three will also provide a detailed overview of the South African corporate governance framework and context. The subsequent subsections of this chapter will, therefore, explore apparent legitimate differences between the '*shareholding*' and '*stakeholding*' corporate governance models. The rationale is to aid a better appreciation of some of the specific South African corporate governance provisions, as well as the broader South African corporate governance framework that will subsequently be discussed in chapter three.

2.2 **THE MAIN CORPORATE GOVERNANCE MODELS**

This section discusses the main corporate governance models within the extant literature: the '*shareholding*' and '*stakeholding*' models. Specifically, the general theoretical assumptions, characteristics, solutions and weaknesses of the '*shareholding*' and '*stakeholding*' models will be discussed. Table 1 below contains a summary of the theoretical assumptions, features and solutions underlying the '*shareholding*' and '*stakeholding*' models of corporate governance. For brevity and comparability purposes, they have been put together

and so will be referred to throughout the rest of the chapter. Subsection 2.2.1 will first examine the '*shareholding*' model, whilst subsection 2.2.2 will present the '*stakeholding*' model. Also, for each model, the underlying theoretical assumptions, major features and proposed solutions will first be described. This will be followed immediately by an examination of their respective weaknesses as found within the extant literature.

2.2.1 **The Shareholding Model of Corporate Governance**

2.2.1.1 ***Theoretical Assumptions, Features, and Solutions of the Shareholding Model***

To begin with, and as Table 1 shows, the shareholding corporate governance model is usually common in the UK, US and other commonwealth countries. Central to the shareholding corporate governance model is the doctrine of shareholder value and primacy (Schwartz, 1983, p.53). It suggests that a firm must be run to primarily advance the interests of its owners. This is based on a basic assumption that ownership is separate from control in an Anglo-American model (see Table 1; Berle and Means, 1932). That is, in this corporate governance system, the providers of capital (owners/shareholders) surrender the day-to-day management (control) of the business to a group of managers consisting of a 'unitary' board of directors and executive management, who are frequently not owners of the corporation themselves. Of close relevance is that through multiplicity of shareholders, ownership in this corporate governance model is quite often relatively widely diffused (see Table 1; Berle and Means, 1932).

A major implication from dispersed ownership is that the power of shareholders to exercise control over the way their business is run is greatly impaired (see Table 1; Blair, 1995; La Porta *et al*., 1998). This raises serious agency problems (see Table 1; Letza et al., 2004), which is the central theoretical framework that underpins this thesis, and will be discussed in detail in chapter four. Briefly, however, the agency theory suggests that since shareholders (principals) have to delegate the control of their business to a few directors and managers (agents) to run the company on their behalf, there is a potential risk that directors and managers will pursue their own interests to the detriment of the eventual owners – shareholders (e.g., Smith, 1776; Berle and Means, 1932; Jensen and Meckling, 1976). This is also based on the premise that managers are both opportunistic and rational such that, on average, they are more likely to pursue their self-interests than those of shareholders (see Table 1; Weimer and Pape, 1999).

Table 1: Summary of the Theoretical Assumptions of the Shareholding and Stakeholding Models of Corporate Governance

Summary	Shareholding Model	Stakeholding Model
Theoretical Assumptions:		
Purpose of corporation	Maximisation of shareholder Value.	Maximisation of all stakeholders' wealth.
Problem of governance	Agency problem.	Absence of stakeholders' participation.
Cause of problem	Shareholders do not have enough control.	Governance failure to represent stakeholders' interests.
Background	Separation of ownership and control.	Different style of capitalism.
Assumptions about causation	Self-interest human behaviour	Traditional mentality of private capitalism.
Type of economic organisation	Rational economic unit with profit motive.	Social economic unit with stakeholder welfare motive.
Proposition	Market efficiency of economy.	Social efficiency of economy.
Rejection	Any external interventions.	The principal-agent model.
Source of discipline	External market forces.	Internal social forces.
Major Features:		
Board structure	One-tier (executive and non-executive board).	Two-tier (executive and supervisory boards).
Major source of finance	Equity from the capital markets.	Debt from banks.
Role of capital markets	High.	Low.
Role of banks	Low.	High.
Ownership concentration	Low/Diffused.	High/concentrated.
Regulatory orientation	Self-regulation.	Statutory regulation.
Legal system/origin	Common law/Anglo-American: UK, US/Commonwealth.	Civil law/Continental Europe: France, Germany and Japan.
Time horizon of economic benefits	Short-term	Long-term
Major Solutions:		
Solution	Removing restrictions on markets. Strengthening the incentive system. Introducing a voluntary code of governance. Introduction of a combination of efficient contracts.	Trust and long-term contractual associations between the firm and stakeholders. Inter-firm co-operation. Employee participation. Introducing business ethics.

Sources: Compiled from Keasey *et al*., (1997); Weimer and Pape (1999); Letza *et al*., (2004).

In response, the shareholding model offers several solutions to the agency problem. Firstly, it suggests that restrictions on factor markets must be removed to encourage competition (Letza *et al*., 2004, p.246). Secondly, it calls for the introduction of a voluntary corporate governance code of ethics and conduct, which is usually underpinned by the universal business principles of accountability, discipline, fairness, independence, responsibility, and transparency to regulate director and managerial behaviour (see Table 1; Cadbury Report, 1992; King Report, 2002). Thirdly, it recommends the strengthening of the managerial incentive system by instituting performance-linked executive compensation schemes to help align shareholder-managerial interests (e.g., Weimer and Pape, 1999; King Report, 2002). Finally, it calls for the introduction of efficient contracts to govern the relationship between owners of capital and labour (e.g., Jensen and Meckling, 1976; Letza *et al*., 2004).

By contrast, the shareholding model rejects external interventions and additional obligations imposed on corporations by government and central authorities because it may distort free market operations (see Table 1; Hart, 1995). Rather, it sees a firm's existing governance arrangements as the outcome of a bargaining process, which has been freely entered into by corporate insiders and outsiders (Keasey *et al*., 1997, p.3). More specifically, as a rational economic model, it assumes that factor markets (e.g., capital, managerial labour and corporate control) are efficient and subsequently, self-regulation backed by additional voluntary mechanisms, such as a voluntary corporate governance code are more effective in reducing divergent activities of managers (see Table 1; Keasey *et al*., 1997; Letza *et al*., 2004).

The rejection of external interventions by central regulatory authorities, but heavy reliance on free market regulation, is also based on a core premise that the major source of finance to corporations is equity rather than debt. That is, equity capital is expected to be raised mainly from efficiently operated capital markets. In such a market, capital is assumed to freely move to investments that offer the highest risk-adjusted returns (see Table 1; Friedman, 1962, 1970).

Finally, and as a corollary, equity markets tend to be relatively better developed in Anglo-American countries, such as the UK and US than in Continental European countries like Germany and France (Weimer and Pape, 1999, p.155). This implies that shareholders can easily either transfer their capital from a poorly-governed company to a better-governed one or a poorly-governed company may be acquired by a better-governed firm through the inherent efficient markets for corporate control. Similarly, and at least in theory, poorly performing

managers can easily be fired and replaced with an efficient team, hence, providing the most effective restraints on managerial discretion.

2.2.1.2 **Major Criticisms of the Shareholding Model**

Despite its dominance as a major corporate form worldwide (Keasey *et al*., 1997, p.3; O'Sullivan, 2000, p.52), the shareholding model suffers from several weaknesses (e.g., Blair, 1995; Gamble and Kelly, 2001; Vinten, 2001). These weaknesses generally concern shareholder power and democracy, stakeholder interests, social morality and ethics, efficient factor markets, and excessive short-termism, amongst others (e.g., Blair, 1995; Letza *et al*., 2004; Sternberg, 1997, 2004).

Firstly, it has been suggested that shareholders lack sufficient power to control management and prevent misuse of corporate resources as purported by the shareholding model (Blair, 1995, p.vi). As has been explained above, central to this model is the axiom of shareholder primacy, which presupposes that corporations should mainly be managed for the welfare of shareholders. Arising out of such a presupposition is that theoretically a residual power rests with the shareholders so that they can choose the persons to whom operational power is delegated (Schwartz, 1983, p.53; Sheikh and Chatterjee, 1995, p.5). It also entitles them to participate in major corporate decisions, including exercising the power of hiring or firing the board of directors, usually at an annual general meeting (AGM).

In practice, however, it has been contended that the ability of shareholders to meaningfully exercise such control over the direction of their company is severely limited by the very procedures which govern such meetings and corporate officers elections (e.g., Blair, 1995; Sternberg, 1997, 2004). For example, it is directors rather than shareholders that typically set the agenda of an AGM, and by implication directors determine the issues that come up for voting. By contrast, it has been shown that it is either difficult or impossible for shareholders to get binding resolutions of their own onto the agenda (Sternberg, 2004, p.82).

Secondly, and closely associated with the lack of real shareholder power, is that directors, who are expected to be the first line of defence for shareholders, also suffer from many defects (e.g., Denis and McConnell, 2003; Brennan, 2006). Sternberg (2004) suggests that because executive directors of a corporation are also normally its managers, they are less willing to recognise, criticise or correct their own mistakes. Non-executive directors' accountability to shareholders is also usually impaired by the ways in which they are nominated, officially appointed and remunerated (e.g., Kakabadse and Korac-Kakabadse,

2002; Sternberg, 1997, 2004). In an Anglo-American model, the appointment procedure is such that most non-executive directors are nominated by the chief executive or by the board themselves (e.g., Vinten, 2001; Sternberg, 2004). This makes them insufficiently independent of management, and insufficiently accountable to shareholders.

It is, however, acknowledged that with the recent increase in the proliferation of codes of good corporate governance, especially among Anglo-American countries (Aguilera and Cuervo-Cazurra, 2009, p.378), the procedures for board appointments are gradually improving. As will be discussed in detail in chapter three, like the UK's 2006 Combined Code, for example, King II requires listed firms to establish independent nomination committees. It also requires the nomination committees to be constituted and chaired by independent non-executive directors. Requirements of these nature imposed by codes of good governance on firms have generally improved board accountability, independence and monitoring of company executives and senior management (Filatotchev and Boyd, 2009, p.262).

Short-termism is a third criticism that has usually been levelled against the Anglo-American corporate governance model. Opponents (e.g., Blair, 1995; Keasey *et al*., 1997; Kakabadse and Korac-Kakabadse, 2002; Letza *et al*., 2004) of the shareholding model contend that it is significantly flawed by its excessive fixation on short-term financial performance – short-term returns on investments, short-term corporate profits, short-term management performance, short-term share prices, and short-term expenditures, amongst others. This arises out of the substantial reliance on and the existence of efficient capital markets, which put huge pressure on managers.

In principle, a higher short-term share return, for example, is preferred to a lower one in this corporate governance model. By contrast, a comparatively lower share price, for instance, makes a firm more vulnerable to receiving takeover bids, including hostile ones. This huge market pressure from investors and competitors leads to managerial preference for investments with shorter payback period in order to boost short-term profits, while disfavouring long-term capital investments, like research and development expenditure (e.g., Blair, 1995; Keasey *et al*., 1997).

For example, anecdotal evidence within the popular media (e.g., Keller and Stocker, 2008; Farrell, 2009; Parker and Thomas, 2009) and by recent reviews (Walker Review, 2009, p.8; Turner Review, 2009) suggest that the prevailing financial crisis (i.e., the so-called 'credit crunch') within the global financial markets has partly been caused by 'reckless risk-taking

behaviour' associated with pervasive 'short-term bonus culture' among senior executives of some major financial institutions, especially in the UK and US.

Finally, and by far the most compelling attack and formidable challenge to the Anglo-American model has come from stakeholder theorists (e.g., Freeman and Reed, 1983; Freeman, 1984; Blair, 1995; Vinten, 2001; Kakabadse and Korac-Kakabadse, 2002). Generally, stakeholder theorists have criticised the shareholding model on two main grounds that: (1) it ignores the social, ethical and moral responsibilities of the corporation as an important societal institution; and (2) it offers a narrow definition of the stakeholders of the firm (e.g., Blair, 1995; Kakabadse and Korac-Kakabadse, 2002).

Firstly, the stakeholder theorists (e.g., Freeman and Reed, 1983; Hummels, 1998) argue that rather than running the firm to primarily maximise the wealth of shareholders (e.g., Berle and Means, 1932; Sheikh and Chatterjee, 1995), the firm should equally serve the interests of a wider stakeholder group. These may include employees, creditors, suppliers, customers and local communities that have long-term relationships with the firm, and thus affect its long-term success. As a result, it has been contested that the Anglo-American model's exclusive emphasis on the powers and rights of shareholders results in the negligence of the interests of other legitimate stakeholders (Blair, 1995, p.vi).

It must be pointed out, however, that like their counterparts operating in stakeholding countries, companies that operate in Anglo-American countries also contribute to social development. For example, and in practice, firms that operate in shareholder-oriented countries pay corporate taxes and offer employment opportunities to local communities, just like their stakeholding counterparts. In fact, according to West (2009, p.15), there has been substantial increase in corporate social responsibilities, especially responsibilities towards employees, customers, local communities, and the environment generally in Anglo-American countries over the last decade. Similarly, shareholders are also stakeholders of the firm. It has been argued, therefore, that by maximising shareholder value, societal value is similarly maximised (Mallin, 2007, p.6; Jensen, 2001, 2002).

Secondly, a close criticism from stakeholding theorists is that the shareholding model lacks the capacity to give serious consideration to ethical and moral issues. A popular, but sometimes controversial ethical and moral criticism is that the Anglo-American governance model encourages excessive or even '*obscene*' executive remuneration (Sternberg, 2004,

p.68)[1]. It is reported, for example, that the average CEO of a medium-sized American corporation earns 531 times as much in pay, bonuses and stock options as the average factory worker (Kakabadse and Korac-Kakabadse, 2002, p.314). It has been argued, however, that good corporate governance is expected to empower the weaker sections of society (Kakabadse and Korac-Kakabadse, 2002, p.305).

In this case, the shareholding governance model is criticised for 'unethically' strengthening further the already rich and powerful societal segments – shareholders and managers rather than empowering the weaker sections of society – lower level employees, local communities, the poor, women and children. Again, the on-going financial crisis within the global financial markets offers classic anecdotal examples. In spite of receiving multibillion-pound British Government bailouts (e.g., Farrell, 2008; Bradley, 2009; Neligan and Slater, 2009; Turner Review, 2009), and reported record of multibillion-pound losses at some major British Banks, including the Royal Bank of Scotland and Lloyds Banking Group, reports within the popular media suggest that senior executives continue to pay themselves millions of pounds of bonuses (e.g., Keller and Stocker, 2008; Farrell, 2009; Parker and Thomas, 2009; Walker Review, 2009). Arguably, this may further transfer wealth from ordinary taxpayers to already rich senior corporate bank executives.

Due to the above weaknesses, stakeholder governance theorists purport to offer a better alternative to the shareholding governance model. The next subsection, therefore, will discuss the stakeholding corporate governance concept. Again, the rationale is to facilitate a better understanding of the South African governance framework that will subsequently be discussed in chapter three. For purposes of comparison, Table 1 will be referred to throughout the next subsections. Specifically, subsection 2.2.2.1 will present theoretical assumptions and solutions, whilst subsection 2.2.2.2 will examine the major weaknesses of the stakeholding model.

[1]There may be some problems with this literature that need to be highlighted. First, there may be a problem with defining what constitutes ethical or moral behaviour. For example, there may be difficulties with defining what constitutes adequate or excessive executive compensation. Second, the so-called excessive executive remuneration may not necessarily be limited to Anglo-American countries alone. The 2009 Mercer Global Executive Remuneration Survey, for example, suggests that executive remuneration is not only high in conventional shareholding countries, such as the UK and Ireland, but also in traditional stakeholding countries, like France and Germany. Similarly, with increased globalisation, greater integration of global stock markets through cross-listing, and the proliferation of national and trans-national codes of good governance, convergence in corporate governance practices is improving (e.g., Aguilera and Cuervo-Cazurra, 2009; Filatotchev and Boyd, 2009; Yoshikawa and Rasheed, 2009). As will be explained further in subsection 2.2.2, this implies that some of the criticisms discussed in this subsection may not necessarily be limited to the *shareholding* model alone.

2.2.2 **The Stakeholding Model of Corporate Governance**

2.2.2.1 ***Theoretical Assumptions, Features and Solutions of the Stakeholding Model***

To start with, and as Table 1 suggests, the stakeholding model of corporate governance is often found in France, Germany, Japan and other European or Asian countries. A central underlying assumption of the stakeholding corporate governance model is that the purpose of the corporation is to maximise the welfare of a number of stakeholders of the firm rather than those of shareholders alone (see Table 1; Blair, 1995). That is, unlike the shareholding model that encourages firms to '*exclusively*' advance the interests of shareholders, it suggests that companies should '*inclusively*' pursue the interests of a group of identifiable stakeholders who may either directly or indirectly be affected by or can affect the success of the firm.

Past stakeholder theorists have offered classical exposition of the '*inclusive*' governance concept (e.g., March and Simons 1958; Hill and Jones, 1992; Jensen, 2001, 2002). They suggest that a firm consists of social groups in which each group can be seen as supplying the firm with important resources (contributions) and in return expects its interests to be promoted (inducements).

For example, it is suggested that shareholders supply the firm with capital. In exchange, they expect to maximise the risk-adjusted return on their investments. Creditors provide the firm with loans. In return, they expect their loans to be repaid on time. Local communities supply the firm with location and local infrastructure. In exchange, they expect the firm to improve their quality of life. Managers and employees provide the firm with time and skills. In return, they expect to receive a sustainable income, and this has been argued to be true for every reasonably conceivable constituency of the firm (e.g., Hill and Jones, 1992; Jensen, 2001, 2002).

As a result, and unlike the shareholding model, the stakeholding governance model presupposes that the governance problem arises out of the absence of broader stakeholder participation in the running of public corporations (see Table 1; Letza *et al*., 2004). Like the shareholding model, however, it subscribes to the idea that the separation of ownership and control in modern public corporations creates a governance problem (see Table 1; Keasey *et al*., 1997). It also concurs with the shareholding model's assumption that the resulting agency conflicts may be reduced by the firm through a nexus of contracts between the various stakeholders of the firm, and that the firm should be run rationally in economic terms to broadly maximise its wealth (see Table 1; Hill and Jones, 1992).

By contrast, it rejects the assumption that shareholders and managers are the only important participants in such a relationship (see Table 1; Blair, 1995). Further, while it shares the assumption that markets can be efficient (see Table 1; Fama, 1965, 1970), it also recognises the existence of short to medium-run market inefficiencies. This implies that there may be a need for occasional external interventions, including statutory legislations to establish equilibrium in order to maximise the broader societal wealth (see Table 1; Hill and Jones, 1992; Weimer and Pape, 1999).

In response, the stakeholding model offers several solutions. Firstly, it proposes a two-tier corporate board structure as a way of achieving a broader representation of the interests of a larger group of stakeholders of the firm (see Table 1; Schilling, 2001; Mallin, 2007). Thus, in a typical stakeholder governance framework, like in Germany, companies will normally have a dual board structure: (1) a supervisory board, and (2) a management one. The supervisory board is usually constituted by many stakeholders, including investors (shareholders and creditors/banks), employees (union groups), suppliers, customers, and government appointees representing broader segments of society (e.g., Schilling, 2001; West, 2006, 2009). In this case, it mandates the managing board to run the company in the best interests of a number of stakeholders. This implies that the interests of shareholders should only be pursued to the extent that they are not detrimental to the interests of the other stakeholders of the firm (see Table 1; Schilling, 2001; Mallin, 2007). As will be discussed further in chapter three, rather than having a loose definition of stakeholders, King II, for instance, requires every firm to explicitly identify its own relevant stakeholders.

Secondly, it encourages corporate management to focus on building trust and long-term contractual relationships between the firm and its stakeholders (see Table 1; Letza *et al*., 2004). In particular, it supports inter-firm co-operation, including cross-shareholdings (especially in Japan) and employee participation in decision-making through the supervisory board (particularly among German firms). Similarly, it encourages closer contact between shareholders, creditors, managers, employees and suppliers, as well as the integration of business ethics as a solution to achieving a balance among the various stakeholder interests (see Table 1; Rwegasira, 2000).

One consequence of the stakeholding model's insistence on balancing the interests of the various stakeholders is that it may render it less appealing to equity investors. As such, companies tend to rely heavily on debt rather than equity as a major source of finance (see Table 1; Weimer and Pape, 1999). The corollary as Table 1 shows is that equity markets

(stock exchanges) tend to be underdeveloped relative to the debt markets (banks) with relatively high level involvement by credit granting banks in providing capital for public corporations.

Finally, block shareholdings from the various stakeholders, such as employee unions, government and banks, lead to a situation in which ownership is often highly concentrated (see Table 1; Rwegasira, 2000). Concentrated ownership and close managerial monitoring, especially from the supervisory board reduce agency costs. Concentrated ownership may also be associated with weak investor protection, particularly minority investors, which could normally be explained by the legal system of countries often associated with the stakeholder governance framework (see Table 1; La Porta *et al*., 1998).

Specifically, La Porta *et al*. (1998) demonstrate that there is a negative relationship between ownership concentration and investor protection, which can be explained by legal origin. They show that Anglo-American countries (common law family, like the UK and US) have dispersed ownership with higher investor protection in comparison with Continental-European-Asian (civil and Scandinavian law origin, such as France, Germany, and Japan) countries, which tend to have relatively high ownership concentration with weaker investor protection.

As has been briefly explained above, however, it should be pointed out that it is increasingly becoming difficult in recent times to find a corporate governance system, which is purely shareholder-oriented or stakeholder-oriented as have been presented in the preceding two main subsections. First, through increased globalisation, greater market liberalisation and stock market integration through cross-listing, corporate governance practices are increasingly converging (Filatotchev and Boyd, 2009, p.259). For example, stock markets in Japan, a traditional stakeholder governance model, are well-developed as their counterparts in the UK and US, which have historically been based on shareholder governance framework (e.g., Hawley and Williams, 1997; Weimer and Pape, 1999; WFE, 2008). Second, the emergence of powerful international institutional investors, and greater investor activism, seem to have also accelerated the convergence of corporate governance systems, especially towards the Anglo-American model (Aguilera and Cuervo-Cazurra, 2009, p.381).

Third, and as has been mentioned above, the proliferation of national (like the Cadbury and King Reports) and trans-national (such as by the OECD, Latin American countries, World Bank, and the Global Reporting Initiative) codes of corporate governance appears to have improved convergence in corporate governance practices (Aguilera and Cuervo-Cazurra, 2009,

p.381; Filatotchev and Boyd, 2009, p.262). For example, in reviewing 196 distinct codes of governance from 64[2] countries, Aguilera and Cuervo-Cazurra (2009, p.377) identify six recommendations that are common to all countries, regardless of their shareholding or stakeholding origins.

These include: (1) a balance of executive and non-executive directors; (2) splitting the positions of chairman and CEO; (3) provision of quality and timely information to board members; (4) following transparent procedures for appointing new directors; (5) objective and comprehensible financial reporting; and (6) keeping an effective system of internal controls. As has been noted above, increasing similarities and improving convergence of governance practices, imply that the criticisms of the shareholding model described above, and the weaknesses of the stakeholding model presented below, may not necessarily be limited to the shareholding model or the stakeholding model, respectively, alone.

2.2.2.2 ***Major Criticisms of the Stakeholding Model***

The stakeholding governance model has also received several criticisms. These include its incompatibility with the concepts of business, governance and private property rights, among others (e.g., Argenti, 1993; Sternberg, 1997, 2004; O'Sullivan, 2000; Letza *et al*., 2004; Solomon, 2007).

Firstly, a central criticism of the stakeholder governance model is that it is not compatible with the concept of business (e.g., Sternberg, 1997, 2004; Letza *et al*., 2004). It proposes that corporations must strive to achieve a fair balance in distributing the benefits of the firm to a number of stakeholders, and as such prevents the firm from pursuing a single objective function that favours particular groups (e.g., Sternberg, 1997; Jensen, 2001; 2002). This is, however, not consistent with the notion of business, which involves the investment of one's capital in a commercial firm to primarily maximise its long-term value (e.g., Letza *et al*., 2004; Sternberg, 2004). Jensen (2001, 2002) suggests that if a business is prevented from operating efficiently by focusing on maximising owners' profits (purposeful behaviour), it will simply collapse in the long-run. This will negatively affect social value and welfare of all stakeholders.

Secondly, the definition of stakeholders appears to be vague sometimes. Since stakeholders are all those who can affect or are affected by the business, the number of people

[2]This implies that some of the countries examined have more than one distinct code. The UK and US, for example, have 25 distinct codes each (Aguilera and Cuervo-Cazurra, 2009, pp.378-380).

whose benefits need to be taken into account is simply infinite (e.g., Freeman, 1984; Hummels, 1998; Sternberg, 1997, 2004). This means that stakeholders by definition could be anybody or anything from anywhere or everywhere, and as such could range from employees, creditors, government to terrorists, corporate armed-robbers, and the sea, amongst others. Yet, it mandates that a balance be struck in the distribution of benefits to all stakeholders, but ambiguous stakeholder definition means that balancing divergent stakeholder interests is also an unworkable objective (e.g., Sternberg, 1997, 2004; Jensen, 2001, 2002).

Thirdly, the stakeholding governance model is incompatible with the notion of corporate governance. A key corporate governance concept is accountability: the accountability of directors to shareholders; the accountability of managers to directors; and the accountability of corporate employees and other corporate agents to shareholders through managers and directors (e.g., Sternberg, 1997; 2004; Rossouw *et al*., 2002; Solomon, 2007). Stakeholding, however, suggests that firms should be accountable to all their stakeholders rather than to their shareholders alone (e.g., Friedman and Reed, 1983; Letza *et al*., 2004). By contrast, it has been argued that multiple accountability works if the purpose is unambiguous to everyone involved (e.g., Sternberg, 1997, 2004; Gamble and Kelly, 2001). In fact, the 2002 King Report suggests that an organisation that is accountable to everyone is actually accountable to no one. Thus, accountability that is diffuse is effectively non-existent and unworkable in governance terms.

Finally, an associated criticism is that the stakeholder model provides no effective objective standard against which corporate agents can be judged (e.g., Sternberg, 1997, 2004; Letza *et al*., 2004). Corporate agents are mandated to run the business primarily to balance all stakeholders' interests. It is, however, contested that it does not serve as an effective objective performance measure because it allows corporate agents responsible for its interpretation and implementation, excessive freedom to pursue their own narrow interests, including perquisites consumption and other private benefits of control (e.g., Argenti, 1993; Sternberg, 1997, 2004).

Similarly, hiding behind the vague notion of maximising and balancing all stakeholders' interests, unruly corporate agents are able to effectively resist takeover bids (i.e., the market for managerial and corporate control is usually effectively weakened or even non-existent) that would benefit shareholders, and often allows the pursuit of costly and unprofitable empire-building acquisitions instead (e.g., Preston and Sapienza, 1990; Letza *et al*., 2004).

2.3 **CHAPTER SUMMARY**

This chapter has attempted to define corporate governance. The central rationale has been to paint the broader corporate governance picture within which the South African corporate governance framework and context that is subsequently presented in chapter three could easily be understood. This is because while South Africa has historically had an Anglo-American governance model with predominantly '*shareholding*' governance features, recent governance reforms (i.e., the 1994 and 2002 King Reports) attempt to explicitly impose substantial affirmative action and stakeholder demands, forcing firms to depict almost in equal measure, some of the key features of both the '*shareholding*' and '*stakeholding*' corporate governance models. Arguably, this makes the South African corporate governance framework and environment unique.

In this regard, the chapter began by offering a working definition of corporate governance. While it acknowledged that corporate governance has no universally accepted definition, it suggested that the existing numerous definitions can be classified into two groups: narrow and broad. At the narrow level, it defined corporate governance as referring to internal governance structures, such as the executive management, the board of directors and the general assembly of shareholders, by which companies are directed and controlled. At the most expansive form, however, it contended that corporate governance goes beyond immediate internal governance mechanisms to include external structures and stakeholders, such as the legal system, the efficient factor markets, local communities, the regulatory system, as well as the political, cultural and economic institutions within which companies operate.

Overall, the chapter identified two major types of corporate governance within the international literature and context: the '*shareholding*' and '*stakeholding*' models. In simple terms, it suggested that the shareholding model refers to the narrow definition of corporate governance, in which the interests of shareholders are considered as paramount, and is usually found in Anglo-American countries, such as the UK and US. In contrast, the stakeholding model refers to the broader definition of corporate governance, which attempts to equally cater for the interests of a number of stakeholders of the firm, and is normally predominant in Continental European and Asian countries, like Germany and Japan. It also acknowledged, however, that the shareholding and stakeholding dichotomisation of modern corporate governance systems might be an over-simplification. This is because due to increased globalisation, greater global stock market integration through cross-listing, and the

proliferation of national and trans-national codes of corporate governance, amongst others, corporate governance practices are increasingly converging across different countries and systems.

Further, for each corporate governance model, the underlying theoretical assumptions, major features and proposed solutions as found within the international corporate governance literature were discussed. Of crucial relevance is that the extant literature shows that both models suffer from several weaknesses. This raises an important question as to whether it will be valuable to formally combine some of the main features of the '*shareholding*' and '*stakeholding*' models to form a '*hybrid*' corporate governance model that will be capable of addressing their current respective weaknesses.

In this regard, the South Africa governance framework and recent reforms appear to offer an interesting, and arguably a unique context in which these issues can be further examined. Specifically, and as has been pointed out in chapter one, the corporate governance reforms that have been pursued so far in South Africa ostensibly attempt to transform the South African governance framework from a predominantly Anglo-American model to an '*integrated*' or '*inclusive*' model that explicitly combines the features of the '*shareholding*' and '*stakeholding*' models. However, and despite receiving several commendations as an example of a good governance model in the world (Malherbe and Segal, 2003, p.193; Armstrong *et al*., 2006, p.214; Mallin, 2007, pp.57, 248; Andreasson, 2009, p.10), there is an active on-going normative debate and serious reservations among practitioners, policy makers and academics (e.g., Kakabadse and Korac-Kakabadse, 2002; Rossouw *et al*., 2002; Rossouw, 2005a and b; Spisto, 2005; IIF, 2007; West, 2006, 2009), as to whether it is an appropriate corporate governance model for South Africa or will be able to achieve its sharply contrasting objectives.

Therefore, chapter three (the next chapter) will consider the South African corporate governance framework and context – the major legal frameworks, its origins, its internal/narrow and external/broad governance structures, as well as the nature of the major governance reforms pursued so far.

CHAPTER THREE

CORPORATE GOVERNANCE IN SOUTH AFRICA

3. INTRODUCTION

This chapter discusses corporate governance in South Africa. The main objective is to provide a comprehensive description and where applicable, a review of the South African corporate governance framework. Specifically, it examines the internal and external corporate governance structures in South Africa. The rest of the chapter is organised as follows. Section 3.1 describes the general South African corporate governance landscape. Section 3.2 discusses the external South African corporate governance environment. Section 3.3 examines the internal South African corporate governance environment, while section 3.4 summarises the chapter.

3.1 THE SOUTH AFRICAN CORPORATE GOVERNANCE LANDSCAPE

Following the two major corporate governance models described in chapter two, the current South African corporate governance landscape can similarly be classified into two major groups: broad or external and narrow or internal.

Briefly, external corporate governance refers to the control that is exercised over companies from the outside. In South Africa, this group consists of major financial regulatory and enforcement bodies or stakeholders. They are generally charged with the formulation, implementation and enforcement of statutory, as well as voluntary corporate policies and laws (e.g., Rossouw *et al*., 2002; FSB, 2008). These include the Ministry of Finance, the Department of Trade and Industry (DTI), the Registrar of Companies, the Financial Services Board (FSB), the JSE Ltd, and the South African Reserve Bank (SARB), amongst others.

By contrast, internal corporate governance refers to the way in which firms are governed from within. This group consists of statutory and voluntary corporate laws and codes of conduct, which South African companies are required to comply with. These include the South African Companies Act of 1973, the Insider Trading Act of 1998, the JSE's Listings Rules of 2007, and the 1994 and 2002 King Reports on Corporate Governance for South Africa.

This study focuses on internal corporate governance structures. Section 3.3 will discuss in detail the internal or narrow corporate governance environment. However, to facilitate a better appreciation of the broader South African corporate governance landscape, section 3.2 will provide a brief overview of the external or broad South African corporate governance environment.

3.2 **THE SOUTH AFRICAN EXTERNAL CORPORATE GOVERNANCE ENVIRONMENT**

This section describes the external corporate governance environment. Specifically, it describes the main stakeholders charged with the responsibility of formulating and implementing policies, as well as supervising and regulating the external governance environment. It also points out some of the challenges that the system faces.

3.2.1 **Overview of the External Corporate Governance System**

Figure 1 below depicts the external corporate governance system (the whole financial regulatory system) in South Africa. Generally, it shows three major parts (Rossouw *et al*., 2002, p.294). Firstly, it shows the regulation of financial instruments (i.e., stocks, bonds and derivatives). Secondly, it depicts the regulation of the markets in which these instruments are traded (i.e., the JSE Ltd [JSE], the Bond Exchange of South Africa [BESA] and the South African Future Exchange [SAFEX]). Finally, it shows the regulation of the market participants (i.e., stock brokers, portfolio or fund managers, companies, banks, insurers and pension funds).

Figure 1 also shows that the South African Ministry of Finance remains at the apex of the broad corporate regulatory structure. It oversees the statutory regulation of all financial intermediaries and advisers in South Africa. The ministry has the overall responsibility to develop, implement and supervise the corporate and the financial governance superstructure in South Africa (e.g., Bamber *et al*., 2001; Rossouw *et al*., 2002). It carries out its functions through four major statutory bodies: the Financial Services Board (FSB), the South African Reserve Bank (SARB), the Registrar of Companies and the South African Department of Trade and Industry (DTI) (Rossouw, *et al*., 2002, p.294).

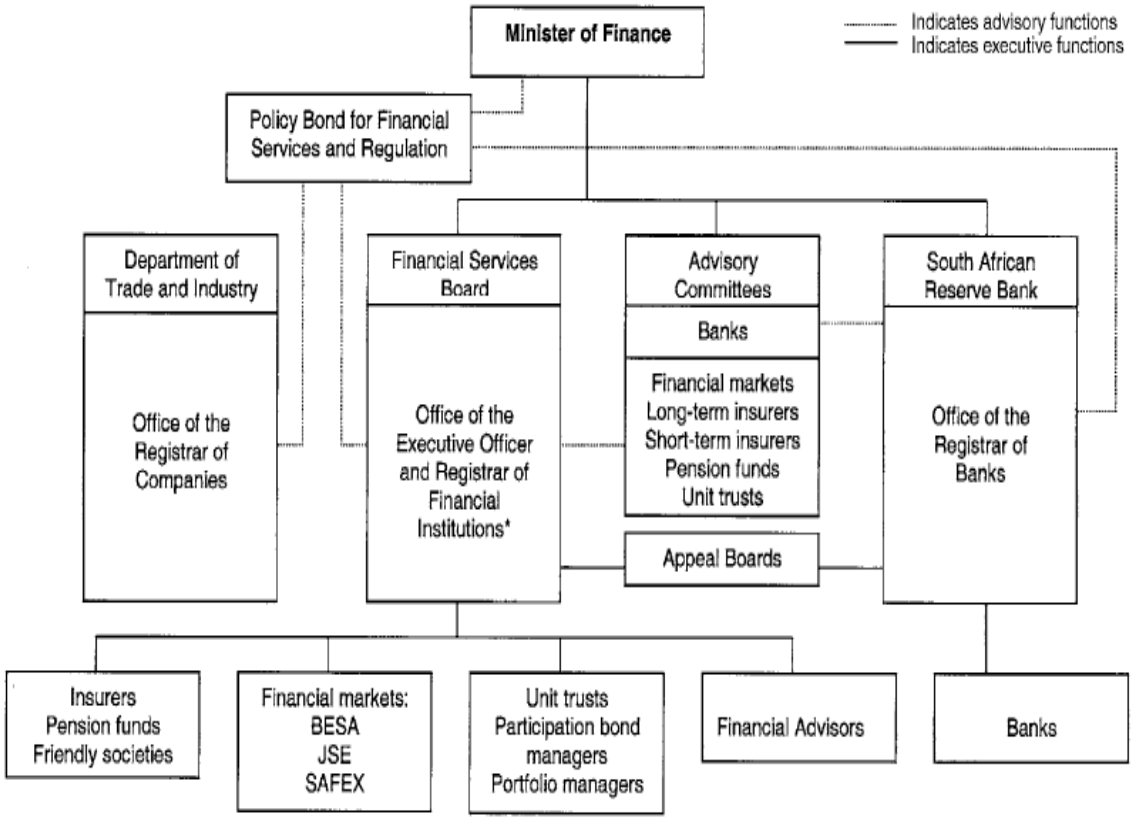

Figure 1: The External Corporate Governance Framework of South Africa, Source: Rossouw *et al.* (2002, p.295).

The Financial Services Board (FSB) has regulatory powers over all non-bank financial institutions, as well as acts in an advisory capacity to the Minister of Finance (e.g., Financial Services Board Act, 1990; FSB, 2008). The FSB is also assisted by the Insider Trading Directorate (ITD), the Advisory Board on financial markets, as well as the Advisory Committees on long- and short-term financial instruments (Rossouw, *et al.*, 2002, p.294). In contrast, the Appeals Board serves as the official adjudicator of all conflicts emanating from the whole financial system: the FSB, the Advisory Committees and the South African Reserve Bank (SARB) (e.g., Bamber *et al*., 2001; Rossouw *et al*., 2002).

The FSB's functions are further delegated to four subordinated statutory bodies, namely: the financial markets, unit trusts, insurers and financial advisors boards (Rossouw, *et al*., 2002, p.294). The Financial Markets Board is responsible for the supervision and issuance of licenses for the operation of securities markets, such as stock, bond and financial futures markets. The Board has supervisory powers over the JSE Ltd (JSE), the Bond Exchange of South Africa (BESA) and the South African Futures Exchange (SAFEX).

Among them, the JSE is of direct relevance to this study. The JSE is the only formal stock market in South Africa. It provides a platform for the listing and trading of all corporate

shares (JSE Listings Rules, 2007). It has its own Listings Rules. More importantly, it appends the provisions of the 1994 and 2002 King Reports on Corporate Governance to its Listings Rules. It expects all listed firms to comply with the provisions of the King Report or explain, in case(s) of non compliance. The constructed South African Corporate Governance Index (the *SACGI*) that will subsequently be used in examining the corporate governance-financial performance link is based on the 2002 King Report. These reports will be discussed in detail in section 3.3.

3.2.2 **Some of the Challenges Facing the South African Regulatory System**

The South African financial regulatory system faces a number of challenges (e.g., Bamber *et al*., 2001; Rossouw *et al*., 2002; Armstrong, 2003; CLSA, 2000; IIF, 2007; FSB, 2008). A major regulatory challenge is that the FSB is financed by the financial services industry through levies and fees, with no contributions from central government (e.g., Bamber *et al*., 2001; Rossouw *et al*., 2002; FSB, 2008). This raises the question of whether the FSB as the main financial services industry regulator can be truly independent of the market participants that it is expected to regulate. This lack of independence creates serious compliance and enforcement problems, especially within a legal framework that heavily relies on self-regulation (Armstrong, 2003, p.2). For example, the Registrar of Companies responsible for administering and supervising the Companies Act has been shown to have limited capacity for enforcement (e.g., Deutsche Bank, 2002; Armstrong, 2003; IIF, 2007).

Similarly, the financial regulatory system also faces the challenge of keeping up with and adapting to the impact of domestic competition and global competitive pressures (e.g., Bamber *et al*., 2001; Rossouw *et al*., 2002). These include frequent changes in international financial regulations and standards, new technology, as well as the fast-evolving strategic objectives of financial institutions.

Finally, it has been suggested that as an emerging economy, the South African regulatory system is still evolving or in a transitional stage (e.g., Bamber *et al*., 2001; Rossouw *et al*., 2002). This sometimes makes it difficult to identify the major changes that need to be instituted. For example, there is an on-going debate as to whether South Africa should set a super-regulatory body like the Financial Services Authority (FSA) of the UK or the Securities and Exchange Commission (SEC) of the US to be in charge of the whole financial regulatory system (e.g., Bamber *et al*., 2001; Armstrong, 2003).

3.3 THE SOUTH AFRICAN INTERNAL CORPORATE GOVERNANCE ENVIRONMENT

This section discusses the South African internal corporate governance environment. As has been pointed out in section 3.1, the internal corporate governance environment is constituted by a group of statutory and voluntary corporate laws and codes of conduct that attempt to regulate the internal control of companies. The South African Companies Act of 1973 and the Insider Trading of 1998 are statutory. By contrast, the JSE's Listings Rules and the 1994 and 2002 King Reports on Corporate Governance for South Africa are voluntary[3].

In subsection 3.3.1, the various parts of the JSE's Listings Rules and the Companies and Insider Trading Acts that relate to internal corporate governance structures will be briefly described. Subsections 3.3.2 and 3.3.3 will then discuss in detail the 1994 ('King I') and 2002 ('King II') King Reports, respectively. The King Reports will be discussed in detail for two reasons. Firstly, they contain all the relevant provisions covered by the JSE's Listings Rules, as well as the Companies and Insider Trading Acts. Secondly, and as has been explained above, they represent the main Code of Conduct on which this study is based.

3.3.1 The South African Companies Act, Insider Trading Act, JSE's Listings Rules and Internal Corporate Governance Structures

This subsection briefly discusses the relevant internal corporate governance structures that are instituted by the South African Companies Act, the JSE's Listings Rules and the Insider Trading Act. Specifically, subsection 3.3.1.1 will discuss the internal corporate governance structures that are established by the Companies Act, whilst subsection 3.3.1.2 will describe those instituted by the JSE's Listings Rules and the Insider Trading Act.

3.3.1.1 *The Companies Act and Internal Corporate Governance Structures*

The South African Companies Act, no. 61 of 1973 (first enacted in 1861) is the main statutory commercial law that controls internal operations of companies in South Africa. It is administered and supervised by the Department of Trade and Industry (DTI) through the

[3]As will be noted further in chapter ten, the JSE's Listings Rules and the King Reports are voluntary because their corporate governance provisions are not enforceable in the law courts. Listed firms that do not comply with their provisions may only be suspended or de-listed from the JSE. Listed firms are also not officially punished for non-compliance if they are able to offer a reasonable explanation(s) for not complying with a particular corporate governance provision or provisions. Non-listed firms are expected to voluntarily comply only with the corporate governance provisions of the King Code (King Report, 2002, para. 1.1).

Registrar of Companies. The Act sets out several structures that govern the internal relationships between the firm, directors and shareholders.

Focusing first on the firm, under schedule 3 of the Act, a firm has the right to appoint qualified directors, auditor(s) and a secretary. The company must organise and notify members of all meetings, including annual general and extra ordinary meetings (see sections 179-186). It must also keep proper accounting records (see section 284) and comply with formal financial accounting standards (see section 285A). Finally, under schedule 5.28 of the Act, the company must prepare and present its annual report to members and file with the Registrar of Companies all annual returns (see section 176). As will be discussed in chapter five, the study relies on company annual reports as the main source of data for the internal corporate governance variables. It will be argued in subsection 5.2.1 of chapter five that the mandatory or statutory nature of annual reports makes them a more credible source of data in comparison with other sources.

With regards to directors, under section 208 of the Act, every public company must have a unitary board of at least two directors. Board size and the percentage of non-executive directors will be used as corporate governance variables in investigating the relationship between corporate governance and financial performance in chapter five. Schedule 2 of the Act grants directors the following powers: direction and control, management, voting, and representing the firm. Schedule 2 of the Act also offers directors a right to adequate remuneration for services offered. As will be discussed in subsection 3.3.3, the 2002 King Report requires directors' remuneration to be determined by a remuneration committee that consists only of independent non-executive directors.

Also, and as will be described in chapter five, the constructed South African Corporate Governance Index (the *SACGI*) includes whether a remuneration committee is present or not. Finally, under section 140A of the Act, directors and officers have a duty to disclose in the annual report any direct or indirect beneficial interest in the firm's securities. In chapter five, the percentage of director ownership will be used as one of the internal governance mechanisms in examining the governance-performance link.

With respect to the company secretary, section 268A of the Act mandates public companies to appoint a secretary. As will be discussed later, the King Reports also recognise company secretary as an important internal corporate governance mechanism. Similarly, and as will be specified in chapter five, the constructed South African Corporate Governance Index (the *SACGI*) includes whether a firm has a formally appointed company secretary or not.

Under section 268G of the Act, the secretary has a duty to provide directors of a company collectively and individually with guidance as to what their duties are, as well as their responsibilities and powers. More importantly, the secretary must also certify in the annual financial statements of the company that the company has lodged with the Registrar of Companies all such returns as are required of a public company and that such returns are true and correct.

Regarding auditing, section 269A of the Act stipulates that every company must appoint an audit committee. It must be composed of at least two independent non-executive directors. Similarly, and as will be explained below, the King Reports also consider the audit committee as an important internal corporate governance structure. Also, and as will be discussed further in chapter five, the constructed South African Corporate Governance Index (the *SACGI*) includes whether an audit committee is present or not. Under section 270A of the Act, the audit committee must nominate for appointment an independent auditor for the company and determine the fees to be paid to the auditor. Finally, it must handle complaints relating to accounting practices, internal audit and the content of its financial statements.

Focusing finally on shareholders, they are required to provide the capital of the company with their liabilities limited to the amount of capital invested (see sections 19; 59-66; and 86, amongst others). As residual investors and risk bearers of the firm, the Act grants shareholders several rights and powers. Sections 219 and 220 of the Act state that by a resolution at a general meeting, shareholders have the power to remove directors from office before the expiration of their term or can go to court for the enforcement of such a resolution. Under sections 146A and 90 of the Act, shareholders are entitled to receive payments in the form of dividends or capital redistributions and have pre-emptive right to rights issues. Finally, according to sections 179 and 180-186 of the Act, shareholders have the right to call for, to receive adequate notice, to attend and to vote at general meetings.

These sections of the Act are important because they are the distinguishing features that underlie any typical '*shareholding*' or Anglo-American corporate governance model that has been discussed in chapter two. They demonstrate further that the interests of shareholders within this model are supreme, backed by extensive legal rights and powers. Similarly, it is expected that the extensive control powers granted shareholders will ensure that voluntary or self-regulation operates effectively without state or external intervention. The Act does not, however, explicitly recognise the interests or rights of any group of stakeholders, such as employees. By contrast, the '*stakeholding*' corporate governance model tends to formally

recognise the rights of other stakeholders. For example, the right of employees to be represented on the supervisory board of German companies is explicitly enshrined in German company law (Mallin, 2007, p.16).

3.3.1.2 *The JSE's Listings Rules, Insider Trading Act and Internal Corporate Governance Structures*

Apart from the Companies Act and the King Reports that will be discussed below, the JSE's 2007 Listings Rules and the Insider Trading Act of 1998 are the other corporate governance reforms that regulate internal corporate governance in South Africa.

The JSE's 2007 Listings Rules are important because they append the relevant internal governance provisions of the Companies Act, the Insider Trading Act and the 2002 King Report to its Listings Rules. Specifically, the Listings Rules are specified in a voluminous document consisting of a practice note, 25 schedules and 21 sections dealing with a variety of issues ranging from application for listing new applicant, corporate governance, and the authority of the JSE to issues regarding pyramidical and concentrated ownership structures. This subsection, therefore, briefly highlights the relevant internal governance provisions that are not covered by the Companies Act or the King Reports.

The main aim of the JSE's Listings Rules is to ensure the existence of an efficient market for raising and trading of capital with strong emphasis on investor protection (JSE Listings Rules, 2007, intro. para.). Under subsection 14.6, the listing of pyramid[4] companies is prohibited. The JSE, however, has a discretionary right to allow a pyramid company to list on the proviso that it will 'unbundle' or engage in an 'unbundling' process within an agreed time period. This rule is an important corporate governance issue because historically pyramidical ownership structures have been pervasive and problematic in South Africa (e.g., Barr *et al*., 1995; Malherbe and Segal, 2003; Armstrong *et al*., 2006). Theoretically, it is expected that a reduction in pyramidical and concentrated ownership structures within a relatively developed stock market in South Africa, will make voluntary or self-regulation more effective. As will be noted further below, Armstrong *et al*. (2006, p.221) report, for example, that the introduction of more rigorous listings rules have caused a marked shrinkage in the number of companies listed on the JSE, falling from 668 companies in 1998, for instance, to 426 in January 2004.

[4]A pyramid company is one which: (1) may exercise, or cause the exercise, of 50% or more of the total voting rights of the equity securities of a listed company ("listed controlled company"); and (2) derives 75% or more of its total attributable income before tax from such listed controlled company, or the value of its shareholding in the listed controlled company represents 50% or more of its gross assets, with both measured, as far as possible, at fair value (see subsection 14.4, JSE Listings Rules, 2007).

Subsections 3.59-3.84 and the whole of sections 7 and 10 deal with the duties, responsibilities, powers, and rights of directors, shareholders, the company secretary, and auditors as discussed in the Companies Act. Similarly, subsections 3.63-3.74 deal with the prohibition of insider trading by directors, officers and employees of listed companies. Insider share dealings are also covered by the Insider Trading Act, section 440F of the Companies Act and subsection 2.9 of the 2002 King Report. The relevant sections of the Insider Trading Act 1998 will be briefly discussed below. The whole recommendations of the 2002 King Report are also covered under sections 7 and 8.

However, there are two areas where the Listings Rules differ from the 2002 King Report and the Companies Act. Firstly, under subsection 10.23, the Listings Rules suggest that every listed company's board must consist of at least four directors. The Companies Act requires a minimum of two, whilst the 2002 King Report does not specify any number. None of them sets a maximum number of directors. Secondly, subsection 10.59 prohibits life directorships, but the 2002 King Report and Companies Act permit a staggered rotation of board members to ensure board continuity.

Finally, under subsections 7.F.5 and 8.63, every listed company is expected to provide two statements. Firstly, companies are required to provide a statement of how it has applied the principles set out in the 2002 King Code. In particular, they must give explanation(s) that enable(s) its shareholders to evaluate how the principles have been applied. Secondly, a positive statement that addresses the extent to which the company has complied with the King Code and the reason(s) for non-compliance with any of the principles must be provided.

With respect to the Insider Trading Act of 1998, it prohibits individuals from dealing in such securities or financial instruments in South Africa based on inside information[5]. Specifically, the Act provides criminal and civil law penalties for insider dealing. For example, under sections 2 and 5 of the Act, any insider who is convicted of a direct or indirect insider trading is liable to a criminal fine not exceeding R2m or imprisonment for a period not exceeding 10 years, or both.

Finally, and more importantly, the Act grants the Financial Services Boards (FSB) a wide range of statutory powers, including the power to investigate, summon, institute,

[5]The Act defines 'inside information' as specific or precise information which has not been made public and which: (a) is obtained or learned as an insider; and (b) if it were made public would likely have a material effect on the price or value of any securities or financial instrument. 'Insider' is also defined by the Act as an individual who has inside information: (a) through being a director, employee or shareholder of an issuer of securities or financial instruments to which the inside information relate and through having access to such information by virtue of his or her employment, office or profession; and/or (b) where such individual is directly or indirectly related to an insider (see section 1, Insider Trading Act, 1998).

interrogate and prosecute offenders. In this regard, and under sections 6 and 11-12, it establishes a fully-fledged directorate within the FSB, the Insider Trading Directorate (see Figure 1 above) to purely investigate and institute civil proceedings against offenders. The constructed South African Corporate Governance index (the *SACGI*) that will be discussed in subsection 5.2 of chapter five, includes the disclosure of a policy that prohibits directors from dealing in a firm's shares within their own clearly pre-specified window, as recommended by the 2002 King Report.

The next subsections will discuss recent corporate governance reforms that have been pursued in South Africa. Specifically, subsections 3.3.2 and 3.3.3 will examine the origins and the internal corporate governance structures imposed by the 1994 and 2002 King Reports on Corporate Governance for South Africa, respectively. Also, Table 2 will present the main recommendations of the King Reports. To facilitate comparison, the recommendations of the now influential 1992 Cadbury Report have also been presented, and so will be referred to throughout the next subsections.

3.3.2 **The 1994 King Report on Corporate Governance for South Africa (*'King I'*)**

3.3.2.1 ***Origins/Background***

As has been noted above, legislation regulating the behaviour of companies, their directors and officers has existed in South Africa in the form of the 1861 Companies Act, no. 23 (DTI, 2004, p.13). However, there is a consensus that, in a narrow sense, corporate governance in South Africa was formally institutionalised by the publication of the first King Report on Corporate Governance (hereafter also known as 'King I') in November 1994 (e.g., King Report, 2002; Rossouw *et al*., 2002; Armstrong *et al*., 2006; and West, 2006, 2009, amongst others).

The publication of King I was preceded by important domestic and international developments. Domestically, it coincided with an unprecedented deep-seated social and political transformation in South Africa. South Africa was preparing to hold its first multi-racial elections in 1994 following the collapse of Apartheid. Internationally, corporate governance had become an issue of great international concern, preceding well-publicised cases regarding the collapse of major international corporations, such as Bank of Credit and Commerce and the Maxwell Communications Corporation, in the UK and elsewhere (e.g., Barrier, 2003; Mallin, 2006, 2007; Solomon, 2007).

There were widespread suspicions that poor corporate governance practices had played a central role in causing these corporate failures (e.g., Cadbury Report, 1992; Jones and Pollitt, 2004; Solomon, 2007). This ignited major reforms that influenced the way corporations were governed worldwide. The UK, for example, responded by establishing a Corporate Governance Committee in 1991 to prepare a Code of Best Corporate Practice for UK listed firms. In 1992, the recommendations of the UK Cadbury Report on the Financial Aspects of Corporate Governance were published. The recommendations focused on the control and division of responsibilities among top management, and on the role of auditors.

With increasing domestic and international interests in corporate governance, the King Committee on Corporate Governance was formed in 1992 as a voluntary and private initiative at the instigation of the Southern African Institute of Directors (e.g., Rossouw *et al*., 2002; Armstrong *et al*., 2006). The main purpose of the King Committee (named after its chair, Mervyn King), was to consider how to promote the highest standards of corporate governance in South Africa (King Report, 2002, p.5). Specifically, the Committee was required to make recommendations on a Code of Practice in terms of the financial, ethical and environmental aspects of corporate governance in South Africa (e.g., Malherbe and Segal, 2003; Rossouw *et al*., 2002).

After extensive deliberations, the Committee published its final report in November 1994. In general, King I adopted many of the corporate governance standards and principles that had already been advocated in a plethora of national and international codes that were already in existence (e.g., Rossouw, *et al*., 2002; Armstrong *et al*., 2006; Aguilera and Cuervo-Cazurra, 2009). In particular, the recommendations of the report were heavily informed by that of the UK's Cadbury Report of 1992, especially regarding its suggestions on internal corporate governance structures (see Table 2; West, 2006, 2009).

Unlike Cadbury, however, it advocated an '*integrated*' approach to corporate governance. It also went beyond Cadbury's main principles of *accountability, integrity and openness* to include *fairness and responsibility*. This gives King I a stakeholder rather than shareholder orientation (see Table 2; West, 2006, 2009). This means that firms should go beyond the financial and regulatory aspects of corporate governance to taking into consideration the interests of a wide range of stakeholders (King Report, 2002, para. 5).

Table 2: A Comparison of Internal Corporate Governance Provisions of the Cadbury, King I and II Reports

Internal Governance Provisions	1992 Cadbury Report	1994 King Report (King I)	2002 King Report (King II)
Board and Directors:			
Board structure	Unitary board	Unitary board	Unitary board
Non-executive directors	At least three	At least two	Majority of board members
Independent non-exec. directors	At least two	Not specified	Majority of non-executive directors
Role duality	Split chairperson and CEO	Split Chairperson and CEO	Split Chairperson and CEO
Chairperson independence	Non-executive director	Non-executive director	Independent non-executive director
Board meetings	Frequently/Regularly	At least once every quarter	At least once every quarter
Board committees	Audit, remuneration & nomination	Audit & Remuneration	Audit, remuneration & nomination
Director/insider share dealings	Not specified	Not specified	Prohibits insider trading
Risk management, internal audit and control:			
Risk management	Not covered	Not covered	Risk management/committee
Internal audit	Establish internal audit function	Establish internal audit function	Establish internal audit function
Internal control system	Establish internal control system	Establish internal control system	Establish internal control system
Accounting and Auditing:			
Auditing	Audit committee/auditors	Audit committee/auditors	Audit committee/internal auditor
Accounting/financial reporting	Accounting standards (GAAP)	Accounting standards (GAAP)	Accounting standards/IFRS
Integrated sustainability Reporting:			
Ethics	Code of ethics	Code of ethics	Code of ethics
Environment	Not covered	Environment	Environment
Health and safety	Not covered	Health and safety	Health and safety
Affirmative/employment equity	Not covered	Affirmative action	Employment equity
Black empowerment	Not covered	Not covered	Black empowerment
HIV/AIDS	Not covered	Not covered	HIV
Compliance and enforcement:	Board, institutional/shareholders and auditors	Board, institutional/shareholders and Auditors	Board, institutional/shareholders, auditors, the courts, financial press, and peer pressure
Code Principles:	Openness, integrity and Accountability	Accountability, fairness, Responsibility and transparency	Accountability, discipline, fairness, independence, responsibility, social responsibility & transparency
Kind of Corporate Governance:	Financial aspects of governance	Integrated corporate governance	Inclusive corporate governance
Compliance or Regulation:	Voluntary or self-regulation	Voluntary or self-regulation	Voluntary or self-regulation

Sources: Compiled from the 1992 Cadbury Report; 1994 and 2002 King Reports.

In particular, the code tasked South African companies to take into account the current circumstances that existed in South Africa. It urged South African companies to morally and ethically recognise the unique socio-economic and political context (in an environment of mass unemployment, AIDS epidemic and stark poverty), within which they operate (e.g., Rampersad, 2006; Vaughn and Ryan, 2006). Further, it also proposed that companies should consider stakeholder reporting without lowering the quality thereof, while facilitating the entry of business leaders from previously disadvantaged communities (e.g., Rossouw *et al*., 2002; West, 2006, 2009).

In the next subsection, the specific internal corporate governance structures imposed by King I will be discussed. Comparisons will be drawn with the provisions of the 1992 Cadbury Report.

3.3.2.2 ***Corporate Governance Structures Imposed on Companies by King I***

This subsection describes the internal corporate governance structures imposed by the 1994 King Report on Corporate Governance for South Africa (*King I*). Specifically, the structures are divided into six main parts. They include board and directors, risk management, internal audit and control, accounting and auditing, integrated sustainability reporting/non-financial information, and compliance and enforcement. The six structures will subsequently be evaluated at subsection 3.3.2.3.

i) *Board and Directors*

King I recommended that every South African company should be headed by an effective board. Consistent with the Cadbury Report (1992, hereafter also called ‘Cadbury’), it advocated an Anglo-American style unitary board of executive and non-executive directors, who are primarily responsible for directing and controlling the corporation (see Table 2; King Report, 1994, para. 2.1). They are also severally and jointly accountable to shareholders.

It recognised the key role that company chairpersons play in securing good corporate governance. This includes ensuring that non-performing directors are not re-elected and have their services terminated (King Report, 1994, para. 4.3). Due to their immense role and in line with Cadbury, King I suggested that the positions of chairman and CEO of South African companies should be held by different persons (see Table 2; Kakabadse and Korac-Kakabadse, 2002). It argued that such a separation was necessary for the achievement of clear division of responsibilities at the head of the company. It will also result in a considerable reduction in the

concentration of power and authority such that no one individual has unbridled power in company decisions.

Like Cadbury, it emphasised the special importance of non-executive directors in setting and maintaining high standards of corporate governance (see King Report, 1994; Kakabadse and Korac-Kakabadse, 2002). In particular, it noted the independence and experience that non-executive directors bring to issues of strategy, performance, resources, major appointments and standards of conduct (King Report, 1994, para. 4.1). Unlike Cadbury, but in line with the South African Companies Act, it recommended that company boards should have at least two rather than three non-executive directors of adequate calibre and independence. This will ensure that their opinions will carry weight in board decisions (see Table 2; King Report, 1994, para. 2.2). Also, and unlike Cadbury, which specified that at least two of the non-executive directors should be independent, King I did not define any number of independent non-executive directors. Like Cadbury, however, it did not also specify whether the chairman should be independent non-executive director or not.

With regards to board sub-committees, it recognised the crucial role that they play in achieving efficient and effective corporate boards. Similar to the Cadbury Report, King I suggested that every board should have remuneration and audit committees (see Table 2; King Report, 1994, para. 6.1). Also, and in line with the South African Companies Act, it suggested that the audit and remuneration committees must consist of at least two non-executive directors, with a majority of its members, including the chairman of the committees, being non-executive directors.

Unlike Cadbury, however, it suggested that the selection and appointment of directors should be matters for the board as a whole. As such, King I did not recommend the establishment of nomination committees (see Table 2; King Report, 1994, para. 5.1). Similarly, while Cadbury recommended that the majority of the audit committee members should be independent non-executive directors, King I did not specify any number.

Finally, King I expressed concerns as to whether there were sufficient pool of candidates in South Africa with the necessary skills and knowledge to fill directors' positions (Rossouw *et al*., 2002, p.297). As a solution, it proposed that new board appointees go through a period of training and induction with regard to the company's business, resources, systems and management structure. It also noted that the existence of pyramidical structures and large family controlled companies that were listed on the JSE may also hinder compliance. Overall,

King I acknowledged that, because of specific circumstances prevailing in South Africa, some of the principles might not be adhered to in some cases (Rossouw *et al*., 2002, p.297).

ii) *Risk Management, Internal Audit and Control*

Similar to Cadbury, and under section 10, King I placed emphasis on the need for companies to have a well-resourced internal audit and control units. It pointed out that internal auditors are complementary to, but different from, that of the outside auditors. As such, it encouraged companies to establish internal audit functions to undertake regular monitoring of key controls and procedures. For example, and under paragraph 10.2, King I urged internal audit units to undertake investigations on behalf of the audit committee and to follow up any suspicion of fraud. Further, to maintain their independence, King I suggested that the heads of internal audit should have unfettered access to the chairman of the audit committee.

With regard to internal controls, King I accepted the principle laid down by Cadbury that an effective internal control system is an essential part of the efficient management of a company. In this case, King I granted directors two mandates. Firstly, and in line with the South African Companies Act, it mandated directors to maintain a system of internal control over the financial management of the company, including procedures to reduce the incidence of fraud. Secondly, and distinct from the South African Companies Act, it mandated directors to report on the effectiveness of their system of internal control. External auditors should also express their 'true and fair' view on the directors' statement in the annual report. Like Cadbury, King I did not explicitly specify how issues of risks should be addressed or integrated in the company.

iii) *Accounting and Auditing*

Similar to Cadbury, and under section 10, King I made several recommendations regarding accounting and auditing for South African firms to follow. With reference to accounting, King I suggested that South African firms should prepare their financial reports in line with Generally Accepted Accounting Practices as recommended by the JSE's Listings Rules and the South African Accounting Standards Board. In this regard, it placed four main responsibilities on directors. Firstly, it mandated directors to prepare financial statements for every financial year which give true and fair view of the state affairs of the company (or group).

Secondly, and similar to the South African Companies Act, directors must maintain adequate accounting records. Thirdly, they must confirm that suitable accounting policies and standards have been consistently applied in preparing the financial reports. Also, in applying accounting standards, substance should always take precedence over form. In particular, it must be easily comprehensible, transparent and maintain the integrity of financial reports.

Finally, directors must express their opinion as to whether the business will continue to operate as a 'going-concern' for the foreseeable future. In this case, the board is expected to fully state the facts and assumptions used in their assessment of the 'going-concern' status of the company at the end of a financial year. This should also help the external auditor in forming his/her 'true and fair' view of the company's 'going-concern' status. This is expected to help in generating serious deliberation in board meetings, bearing in mind the liabilities that inappropriate assessment or misreporting of the company's financial position could incur.

In this respect, King I suggested that the audit committee must play a critical role in ensuring the integrity of the financial reports. Firstly, and as described above, the audit committee must be composed in a way that enables non-executive directors to contribute independent judgement. Secondly, the committee must review the financial statements. Thirdly, the finance director and the head of internal audit must attend the audit committee meetings to answer questions on any issues of concern that are raised. Finally, the external auditor must also have unrestricted access to the board chairman, management, the audit committee and the chairman of the audit committee.

iv) *Integrated Sustainability Reporting/Non-financial Information*

The explicit requirement for firms to engage in stakeholder reporting is what distinguishes King I from Cadbury or other Anglo-American corporate governance codes (e.g., Armstrong *et al.*, 2006; West, 2006, 2009). Under sections 12 and 13, King I made several recommendations regarding affirmative action and stakeholder rights. Stakeholder issues covered include contribution to the community, health and safety, environment and fair employment practices (see Table 2; King Report, 1994, para. 12.1). It must be emphasised that these stakeholder provisions were largely aspirational with no legal backing. In line with Cadbury, and under section 13, King I also made recommendations with regard to organisational ethics. It did not, however, address black economic empowerment, HIV/Aids, and employment equity issues.

With respect to investment in local communities, it tasked firms to assess the peculiar needs of the communities within which they operate. The identified needs must then be 'integrated' into the companies' policies and goals. These contributions could be in the form of improving access to portable water. In consultation with local communities' leaders, they may, for example, decide to construct or renovate local schools and health centres. They may also contribute to charitable courses that will benefit local communities. For example, they can make donations to local Non-Governmental Organisations (NGOs) that offer essential services, like affordable housing.

With reference to fair employment practices, King I suggested that the firms should work towards addressing historical racial imbalances in the workplace. These include contributing to employee skills developments and upholding labour and employee rights. In particular, they must avoid discrimination and harassment across a range of issues, such as ethnicity, religion and gender.

In relation to health and safety, King I recommended that every company must provide safe and healthy working environment. For example, training, tools and protective gadgets must be provided to reduce workplace accidents and fatalities. In connection with the environment, King I suggested that sustainable development requires a constant awareness and respect for the conservation of the environment. In this regard, it suggested that companies should carry out regular environmental impact assessments to identify and adequately address any negative consequences of their operations. More importantly, King I proposed that the government can introduce more detailed legislation with regards to labour relations, health and safety, the environment, and issues of transformation that will be legally binding on firms.

Finally, and with reference to ethics, King I urged every firm to prepare a Code of Ethics to guide the dealings of directors, management and all employees. Such a Code should be based on the principles of *accountability, fairness, responsibility and transparency*. Under subsection 13.2, King I sets four main criteria to be satisfied. Firstly, the Code must commit the firm to the highest standards of behaviour. Secondly, it must be developed in such a way as to involve all its stakeholders so that it can be infused into its culture. In this respect, it must define its obligations towards employees, owners, creditors, suppliers, customers and local communities. Thirdly, the Code must receive total commitment from the board and CEO of the company. Finally, it must be sufficiently detailed as to give a clear guide to the expected behaviour of all employees.

v) *Compliance and Enforcement*

Similar to Cadbury, King I also supported the principle of self-regulation or voluntary compliance (see Table 2; King Report, 1994, para. 9.2). Specifically, it suggested that the responsibility for putting the Code into practice laid directly with boards of directors of listed firms, but indirectly with auditors and shareholders. That is, King I charged corporate boards with the responsibility of ensuring that their firms comply with all applicable laws, regulations, rules, and standards. As has been pointed out above, the Code was appended to the JSE's Listings Rules, which required directors of listed firms to make a positive statement on the level of compliance. The board of directors must also identify and explain any areas of non-compliance. External Auditors are expected to offer their fair view on the extent to which the provisions of King I have been applied.

King I also suggested that shareholders, and especially local and foreign institutional shareholders, as primary stakeholders, should actively seek to positively influence their companies to comply with the Code. In this regard, companies are encouraged to enter into a sustainable dialogue, based on constructive engagement and the mutual understanding of objectives, with institutional investors. They must also seek to enforce their rights as enshrined under the South African Companies Act, such as attending, voting and asking pertinent questions at annual general meetings. Finally, to strengthen voluntary compliance, the JSE revised its Listings Rules in 1995 and 2000 to encourage diffused ownership of listed firms (Malherbe and Segal, 2003, p.195; Armstrong *et al*., 2006, p.214). This was intended to strengthen the markets for corporate control and managerial labour.

3.3.2.3 ***Evaluation: Major Achievements and Weaknesses of King I***

It has been widely acknowledged that King I was instrumental in raising the awareness of what constitutes good corporate governance in South Africa (e.g., King Report, 2002; Malherbe and 2003; Armstrong *et al*., 2006). In particular, it has been argued that it offered companies, for the first time, a coherent corporate governance framework that was comparatively relevant to the unique South African context (Armstrong *et al*., 2006, p.214). King I was able to differentiate itself from the existing Anglo-American corporate governance codes by going beyond traditional financial aspects of corporate governance to covering non-financial issues, such as ethics and the environment (King Report, 2002, para. 4; West, 2009, p.12). However, and as will be discussed in the next subsection, the non-financial issues were covered in far less detail or with less clarity (Malherbe and Segal, 2003, p.193). Despite being

less detailed in its coverage of non-financial issues, King I still represented an early attempt to explicitly adopt the integrated approach and require firms to engage in stakeholder reporting among the Anglo-American countries (Mallin, 2007, p.57). In fact, according to Aguilera and Cuervo-Cazurra (2009, pp.379-380), King I was the sixth code of corporate governance in the world (coming after the US, 1978; Hong Kong, 1989; Ireland, 1991; UK, 1992; and Canada, 1993), and the first of its kind in the developing world.

More importantly, and as will also be described in the next subsection, its suggestions helped in bringing about substantial future corporate structural and affirmative action legislative reforms (e.g., King Report, 2002; Rossouw *et al*., 2002). It helped to improve standards of corporate governance among South African firms. For example, Credit Lyonnais Securities Asia (CLSA) conducted a survey of corporate governance standards of 495 firms in 25 emerging markets in 2000. The survey ranked South Africa as the fifth emerging market with good corporate governance structures (King Report, 2002, para.15; CLSA, 2000, p.69). As will be discussed further in subsection 3.3.3.3, it also encouraged the JSE to introduce more rigorous Listings Rules, especially regarding director remuneration and ownership of listed firms, including the requirement for director interests, remuneration, and shareownership to be fully disclosed in the annual report (JSE Listings Rules, 2007, subsections 3.83, 4.25-8, 7.A.23-7, 7.B.18-21).

Despite these achievements, King I suffered from several weaknesses and deviations from Cadbury. Firstly, and unlike Cadbury, while King I recognised the importance of board subcommittees, it failed to recommend for the establishment of a nomination committee (see Table 2; Rossouw *et al*., 2002, p.297). Such a committee would have nominated new independent directors for appointment to the board, which would have arguably improved board independence. This undermined board functions where true independence from management was required (Malherbe and Segal, 2003, p.193).

Secondly, King I was unable to insist on a truly independent non-executive director to chair South African corporate boards (see Table 2; Malherbe and Segal, 2003, p.193). This deviation from Cadbury also impaired board independence and increased potential conflicts of interests (Malherbe and Segal, 2003, p.192). Similarly, King I did not address the crucial issues of risk management and insider trading among directors and officers.

Thirdly, while King I called for the establishment of a remuneration committee, it failed to establish the economic rationale or specific rules that should guide firms in determining the level of their directors' remuneration. In this case, it failed to sway away the

concerns of shareholders and the general public about director and executive remuneration (Kakabadse and Korac-Kakabadse, 2002, p.306; Sarra, 2004, pp.8-10).

Fourthly, while King I recognised the need for effective corporate boards, however, it was unable to determine a coherent framework for objectively evaluating, reporting and improving the effectiveness of corporate boards and their sub-committees. Similarly, non-executive directors are valued for their independence in business judgement and protection of shareholder interests (Cadbury Report, 1992, para. 4.12). However, and unlike Cadbury, King I neither sets out a test for determining independence nor provides a clear classification of non-executive directors.

Fifthly, King I purported to promote the so-called '*integrated*' approach to corporate governance. However, it could not clearly articulate in philosophical and theoretical terms the type of corporate governance model that the '*integrated*' approach is (e.g., Kakabadse and Korac-Kakabadse, 2002; Spisto, 2005). Like Cadbury, King I placed continuous emphasis on the need for companies and directors to be primarily accountable and responsible to shareholders. Distinct from Cadbury, it also formally encouraged them to be sensitive to the interests of wider stakeholder groups, such as employees and local communities. This suggests that King I attempted to advance the '*instrumental* or *inclusive*' stakeholding corporate governance model as has been described in chapter two.

The consequence of King I's inability to clearly articulate that it was promoting the '*inclusive*' corporate governance model is that it was unable to directly relate its recommendations to the South African context as it sought to do. For example, it could not firmly relate its recommendations to the major contextual issues of HIV/AIDS, black economic empowerment, and employment equity (see Table 2; Rossouw *et al*., 2002). Finally, King I was criticised for having extensive non-corporate governance content, and sometimes vague stipulations on employee participation, stakeholder engagement, and a code of ethics (Malherbe and Segal, 2003, p.193). According to Malherbe and Segal (2003, p.193), the extensive non-corporate governance content of King I might have resulted in the slow adoption of its provisions among listed firms.

As a result of these limitations and other international and local developments, the 2002 King Report on Corporate Governance for South Africa (King II) was introduced as an improvement on King I. In the next subsections, the origins and internal corporate governance provisions, especially with respect to improvements on King I will be described.

3.3.3 **The 2002 King Report on Corporate Governance for South Africa (*'King II'*)**

3.3.3.1 ***Origins/Background***

Similar to King I, both domestic and international developments since its release in November 1994 prompted the revision of corporate governance in South Africa. The revision resulted in the publication of a second King Report ('King II') on Corporate Governance for South Africa in March 2002.

i) *Domestic Developments*

Domestically, since 1994, South Africa had experienced a second peaceful election and inaugurated its second president with official parliamentary opposition. This showed that South Africa had truly embraced a vibrant multiracial and multiparty political democracy (e.g., Rossouw *et al*., 2002; Malherbe and Segal, 2003). Contrary to genuine pre-transition anxieties of corporate South Africa about the future status of the market economy, a free market economic model had been firmly endorsed by the new government through its neo-liberal economic policy of encouraging growth, employment, and redistribution (the GEAR strategy) (e.g., Malherbe and Segal, 2003; Armstrong *et al*., 2006). As the promotion of a market economy took centre stage, a new breed of local shareholders emerged. Weaknesses in corporate governance, including visible omissions in King I, were identified and criticised (Malherbe and Segal, 2003, p.162).

Also, a number of affirmative action and stakeholder laws had been introduced. These included the Occupational Health and Safety Act 1993, Labour Relations Act 1995, Basic Conditions of Employment Act 1997, National Environmental Management Act 1998, Employment Equity Act 1998, and later the Broad-Based Black Economic Empowerment Act 2003 (King Report, 2002, para. 10). These had been proposed by King I and were aimed at addressing some of the negative social and economic legacies of Apartheid in South Africa.

As has has been explained above, the Insider Trading Act of 1998 had also been introduced to offer a more rigorous regulation of directors' and officers' share dealings. These legislative changes needed to be incorporated into the governance of mainstream corporations. In addition to legislative developments, South Africa had experienced a number of high profile domestic corporate failures. These included Macmed, Leisurenet and Regal Treasury Bank (e.g., Sarra, 2004; Armstrong *et al*., 2006). These corporate failures were mainly attributed to poor corporate governance practices of directors and senior management.

ii) *International Developments*

Internationally, investors had lost billions of dollars during the 1997 and 1998 Asian economic crisis. The crisis demonstrated that macro-economic difficulties could be worsened by systematic failure of corporate governance resulting from ineffective oversight by corporate boards and scant recognition of the rights of minority shareowners (King Report, 2002, para. 22). Similarly, with South Africa's increasing participation in the global economy, international investors' returned. Upon their return, investors and especially foreign institutional investors heavily criticised poor corporate governance structures (Malherbe and Segal, 2003, p.162). Similarly, in a survey conducted by the Credit Lyonnais Securities Asia, South Africa did well in overall corporate governance, but rated poorly in terms of disclosure and transparency (King Report, 2002, para.15; CLSA, 2000, p.69).

Also, during the intervening years, a number of key international corporate governance codes had been released. In the UK, the Combined Code was published in 1998. It addressed board issues, remuneration, the role of shareholders and financial reporting, but did not cover stakeholder issues, such as worker participation and employment equity. The Commonwealth Association for Corporate Governance (CACG) published its Principles of Corporate Governance in the Commonwealth aimed at facilitating best business practices and behaviour (CACG, 1999). In the same year, the Organization for Economic Co-operation and Development (OECD) published its Principles of Corporate Governance.

Finally, the Global Reporting Initiative (GRI) also launched an exposure draft of its Sustainability Reporting Guidelines in 1999 and the first full version in 2000. The GRI is an international reporting guideline that seeks to move corporate reporting from a conventional 'single-bottom line' to a 'triple bottom line' reporting (King Report, 2002, p.275). It required economic (financial), social and environmental (non-financial) reporting to multi-stakeholders, including shareholders, employees, customers, suppliers, creditors, government and local communities, amongst others.

iii) *The King II Committee and Mandate*

In response to these developments, and again under the auspices of the Southern African Institute of Directors, a second King Committee on Corporate Governance (King II) was formed in August 2000. It was also supported by the JSE, the Development Bank of Southern Africa and the major accounting firms, amongst others. The Committee's main

mandate was to review corporate governance standards and practices in the light of domestic and international developments since 1994 for South Africa.

Five major specialist task teams, comprising of individuals representing a cross-section of South African business and society were established to deal with (1) boards and directors, (2) accounting and auditing, (3) internal audit, control and risk management, (4) integrated sustainability reporting, and (5) compliance and enforcement (King Report, 2002, para. 30). A draft copy was first issued in July 2001 for public debate and consultation. A final copy was issued in March 2002.

iv) *The General Scope of King II*

King II is a 354 page comprehensive document divided into six broad sections, including board and directors, risk management, internal audit, integrated sustainability reporting, accounting and auditing, and compliance and enforcement. It builds on and expands King I's fundamental corporate governance principles of *accountability, fairness, responsibility and transparency* to include *discipline, independence and social responsibility* (King Report, 2002, para.18).

It replaces King I's '*integrated*' corporate governance approach with an '*inclusive or instrumental*' corporate governance approach throughout the report (King Report, 2002, para. 5). As has been discussed in chapter two, the *inclusive* approach to corporate governance attempts to recognise the interests of a wider range of stakeholders without subverting the primary interests of shareholders as the residual owners of the firm. In this respect, King II tasks company boards to consider not only the regulatory aspects, but also investors, media, customers, suppliers, consumers, employees and local communities, amongst others (King Report, 2002, para. 5.2).

Unlike King I, King II offers a clear guideline as to how the '*inclusive*' corporate governance can be implemented in practice (King Report, 2002, para. 6). Firstly, the purpose of the company must be defined. Secondly, the values by which the company will carry out its daily activities should be identified and communicated to all stakeholders. Finally, the stakeholders relevant to the company's business should also be identified. As a practical guide, it appends with permission, the Global Reporting Initiatives (GRI) as a yardstick by which companies may measure the extent to which the '*inclusive*' approach has been applied in their operations.

Another expansion on King I is that King II encourages South African firms to ensure that their governance structures reflect the value system of African societies and personality (King Report, 2002, para. 38). As will be noted further below, these include spiritual collectiveness over individualism, consensus building rather than dissension, humility and helpfulness over criticism and the spirit of "ubuntu" (humanity, peaceful co-existence and brotherliness), amongst others. King II points out that this is an attempt to recognise the diversity that exists in South Africa in relation to culture, religion and ethnicity. Companies and boards operating in South Africa need to take into account when defining their internal and external corporate ethos and conduct.

3.3.3.2 ***Corporate Governance Structures Imposed on Companies by King II***

This subsection describes the internal corporate governance structures imposed by the 2002 King Report (*King II*). Specifically, the structures are divided into six main parts. They include board and directors, risk management, internal audit and control, accounting and auditing, integrated sustainability reporting, and compliance and enforcement. Also, only improvements on King I will be described. The challenges facing King II will be finally discussed in subsection 3.3.3.3.

i) *Board and Directors*

King II proposes several changes with regards to board composition. Firstly, instead of two non-executive directors, King II recommends that the board should preferably consist of a majority of non-executive directors. A majority of the non-executive directors should also be independent of management so that shareholders interests (including minority interests) can be better protected (see Table 2; King Report 2002, para. 2.2). The board must be of sufficient size and diversity in terms of skills (profession, occupation, and experience), as well as demographics (age, race, ethnicity, and gender) to improve its effectiveness. Secondly, to ensure balance of power and authority in company decision-making, the chairman of the board should be an independent non-executive director (see Table 2; King Report, 2002, para. 2.3).

Thirdly, a nomination committee, in addition to remuneration and audit committees, must be formed. A related departure from King I is that all three sub-board committees must be chaired by independent non-executive directors. Unlike King I, King II recommends that the remuneration committee must consist entirely of independent non-executive directors. The nomination committee must also consist of a majority of independent non-executive directors.

Similar to King I, the board must meet regularly, at least once a quarter. Also, individual director's membership and attendance of all board and subcommittees meetings must be fully disclosed in the annual report (King Report, 2002, para. 2.1 and 2.2).

Fourthly, the chairman, the chief executive officer, the subcommittee chairpersons, as well as the individual directors' performance must be independently assessed on an annual basis. Unlike King I, King II offers a clear classification of directors into executive, non-executive and independent non-executive directors with a strict definition[6] of director independence (King Report, 2002, para. 2.4).

Fifthly, the remuneration, interests and share options of every director, as well as the formal rationale and philosophical basis for director and executive remuneration must be fully disclosed. The general principle is that remuneration levels should be sufficient to attract, retain and motivate directors and executives of the quality required by the board. Specifically, firms are encouraged to ensure that the performance-related elements of directors' remuneration constitute a substantial part of their remuneration package. This will help in aligning their interests with shareholders.

Any award of share options to directors, however, must be subject to the approval of shareholders at an annual general meeting. Finally, King II recommends that every listed company should have a practice of prohibiting dealings in its securities by directors, officers and other selected employees. This should be for a designated period preceding the announcement of its financial results or any other price sensitive information (see Table 2; King Report, 2002, para. 2.9).

ii) *Risk Management, Internal Audit and Control*

The introduction of risk management represents the main improvement of King II over King I under this section. King II offers clear-cut guidelines which place the responsibility for the total process of risk management under the remit of the board of directors (see Table 2; King Report, 2002, para. 3.1). The guidelines also charge the board to develop their risk

[6]Briefly, an executive director is an individual who is involved in the day-to-day management and/or is in full-time salaried employment of the company or its subsidiaries. A non-executive director is an individual not involved in the day-to-day management and not full-time salaried employee of the company or its subsidiaries. Independent director is a non-executive director who: (1) is not a representative of a shareholder; (2) has not been employed in any executive capacity for the preceding three financial years; (3) is not a member of the immediate family of an individual who is, or has not been employed by the company in an executive position in the past three financial years; (4) is not a professional advisor to the company; (5) is not a significant supplier to or customer of the company; (6) has no significant contractual relationship with the company, as well as (7) is free from any business or other relationship which could be seen to materially interfere with the individual's capacity to act in an independent manner (King Report, 2002, para. 2.4).

strategies and policies in conjunction with executive directors and senior management. In contrast, management is responsible for implementing and monitoring the process of risk management and integrating it into the day-to-day activities of the company.

The board must set out the company's risk tolerance level, and assesses its current and future risks profile on the basis of various categories. These include physical, technology, credit, market, operational, human, resources, regulatory and legal risks. A major departure from King I is that a risk management committee consisting of executive and non-executive directors, and chaired by a non-executive director should be appointed. The committee should help the board in reviewing the risk management process and the significant risks facing the company. Further, in addition to the company's other compliance and enforcement activities, the board should establish a confidential reporting process (whistle-blowing) covering fraud and other risks. Finally, it requires firms to provide a comprehensive disclosure regarding the assessment of current and future risks in their annual reports.

iii) *Accounting and Auditing*

With regard to accounting and auditing, King II recommended three main improvements in King I. Firstly, it raised or elevated the profile and the powers of the audit committee chairman. The chairman of the audit committee should be an independent non-executive director. The independent chairman of the audit committee must also not be the chairman of the main board. The audit committee must consist of a majority of independent non-executive directors. The majority of the members of the audit committee should also be financially literate. Like the chairpersons of the nomination and remuneration committees, the audit committee chairman must attend the company's annual general meeting to answer questions from shareholders (King Report, 2002, para. 2.7).

Secondly, it calls for companies to disclose any non-audit or consulting services rendered by its external audit firm, so that it can be examined for any potential conflict of interests (King Report, 2002, para. 6.1). Finally, and with regards to financial reporting, King II suggests that South African firms should prepare towards adopting the International Financial Reporting Standards (IFRS) as may be recommended by the JSE's Listings Rules. South Africa and the JSE formally adopted the IFRS framework in 2005 (Armstrong *et al*., 2006, p.219). However, listed firms have up to the end of 2007 financial year to fully adopt the IFRS framework (JSE Listings Rules, 2007, subsections 8.3, 8.62, 8.7, 8.10).

iv) *Integrated Sustainability Reporting*

Similar to King I, the requirement for firms to report on an integrated sustainability basis has been acknowledged as what truly distinguishes King II from similar Anglo-American corporate governance codes (e.g., Armstrong, 2006; Vaughn and Ryan, 2006; Andreasson, 2009; West, 2006, 2009)[7]. King II suggests several important improvements on King I in terms integrated sustainability reporting (see Table 2; King Report, 2002, para. 5). Firstly, in addition to health and safety, the environment and ethics, King II recommends that every firm must report on the nature and extent of progress made on employment equity, HIV/AIDS, social investment and transformation (black economic empowerment) (King Report, 2002, para. 5).

Secondly, and unlike King I which did not specify any time-frame for reporting, King II suggests that reporting must be done at least once a year. In this respect, King II sets three levels of reporting in the annual report by directors. First, directors must disclose the policies and practices they have in place. Second, they must disclose how they are implementing the disclosed policies and practices. Finally, the disclosure must demonstrate the resultant changes and benefits to their stakeholders.

Thirdly, apart from setting out the general framework for reporting on each stakeholder issue, King II requires companies to refer to the relevant stakeholder and affirmative action legislation for detailed guidelines. With respect to employment equity, King II mandates every firm to invest in human capital. This must be targeted at achieving equity and diversity in terms of staff numbers, training, age, ethnicity and gender (King Report, 2002, para. 5.1.4). In particular, every company should address issues that create conditions and opportunities for previously disadvantaged individuals (especially women) an equal opportunity to reach executive levels in the company.

In this case, every firm is required to comply with provisions of the Employment Equity Act 1998. Generally, the Act aims to identify and eliminate all employment barriers, including unfair discrimination, which adversely affect people from designated groups[8]. Specifically, the Act prohibits direct or indirect unfair discrimination on any grounds,

[7] Despite the evidence that reporting on corporate social responsibilities in Anglo-American countries has experienced a substantial increase over the past decade (West, 2009, p.15), the London Stock Exchange, for example, has strongly opposed requiring UK listed firms to formally report on corporate social responsibility (LSE, 2007, pp.98-99). The LSE has argued that making corporate social responsibility reporting mandatory will be an excessive cost burden for listed firms.

[8] The Act defines designated groups as black people, women and people with disabilities. 'Black people' is a generic term which means Africans, Coloureds and Indians. A designated employer is a person or an organisation that employs 50 or more employees (see section 1, Employment Equity Act, 1998).

including race, sex, HIV status, religion, disability, pregnancy and language, amongst many others.

The Act also allows firms to distinguish, exclude or prefer any person on the basis of an inherent requirement of a job. For example, under section 15, every designated employer must work towards achieving a balance between their non-white and white workforce across all levels of the organisational hierarchy. Crucially, the Act requires designated employers to submit progress reports annually to the Department of Labour. A firm can be subjected to criminal prosecution if it breaches the Act.

In connection with transformation, the Broad-Based Black Economic Empowerment Act 2003 proposes seven ways by which economic transformation can be achieved. These include equity ownership, management control, employment equity, skills development, preferential procurement, enterprise development and social investment. Firstly, the Act requires firms to encourage blacks or designated blacks to directly or indirectly acquire equity ownership. A general target for firms is that 25% of their equity should be held by designated black groups. However, targets differ on industrial basis. Currently, mining, media, forestry and construction have developed their own empowerment charters and scorecards (JSE Listings Rules, 2007, subsection 8.63, 12). Secondly, to address the low participation of blacks in executive management, the Act encourages firms to appoint qualified blacks into positions of influence.

Thirdly, the Act empowers firms to engage in preferential procurement of raw materials and inputs from black enterprises[9]. They are allowed to acquire raw material from black enterprises even at higher costs than they may be acquired from white run enterprises. Finally, the Act encourages companies to directly invest in black enterprises and communities. They should also invest in skills development of their black employees by creating special training and mentoring opportunities. Similarly, every firm is required to submit an annual progress report to the Department of Trade and Industry. Unlike the Employment Equity Act, a firm cannot be prosecuted if it breaches the Act. This makes the provisions of the Act aspirational or voluntary rather than mandatory for companies to comply with.

With regard to HIV/AIDS, there is no formal legislation. However, King II recommends that every firm should adopt plans and policies to explicitly address the potential impact of HIV/AIDS on its activities (King Report, 2002, para. 5.1.4). This may take the form

[9]The Act defines black enterprise as an enterprise that is at least 50.1% beneficially owned by Black People and which Black People have substantial management control. Such beneficial ownership may be held directly or indirectly through other black enterprises (see section 1, Black Economic Empowerment Act, 2003).

of encouraging voluntary staff testing to ascertain the prevalence rate among their workforce. It can also take the form of on-site health clinics to offer medical and psychological support, as well as educational campaigns to improve awareness.

With respect to the environment and health and safety, King I mandates firms to comply with provisions of the National Environmental Management Act 1998 and Occupational Health and Safety Act 1993, respectively. The Occupational Health and Safety Act requires firms to reduce workplace accidents and fatalities. They must set safety targets and work consistently towards reducing health and safety incidents. The National Environmental Management Act 1998 sets out good environmental standards and practices that firms are encouraged to comply with. In particular, the Act requires firms to conduct environmental impact assessment where potential negative consequences can be identified and addressed. Finally, and with regards to organisational ethics, King II did not make any visible changes over King I.

Unlike King I, and as has been pointed out above, King II urges companies to report along the lines of the Global Reporting Initiative's (GRI) triple-bottom reporting as a practical guide as to how the '*inclusive*' stakeholder corporate governance can be implemented.

v) *Compliance and Enforcement*

Consistent with King I, King II also shares the Cadbury Report's principle-based and qualitative approach to achieving compliance and enforcement of its corporate governance provisions (King Report, 2002, para. 2.2).

In this regard, King II expands the compliance and enforcement stakeholders from the board of directors, auditors and shareholders to include the financial media, peer pressure and the existing legal system (King Report, 2002, para. 6). It calls on the investigative media, and in particular the financial press, to actively encourage compliance through constant monitoring of corporate conduct. This can be done through the revelation of corporate fraud, corruption and cronyism. They can also help in "naming and shaming" consistent violators of the Code. Companies are expected to contribute to the development of financial journalism, such as supporting training workshops and conferences for financial journalists. The Standard Bank of South Africa Ltd, for example, has been lauded by King II for running courses aimed at educating journalists in financial matters.

Peer pressure can also be exerted from organised business in conjunction with the financial press against delinquent directors and managers as way a of promoting high

corporate governance standards. In fact, King II is meant to supplement rather than substitute the existing legal framework. In this regard, King II expects the existing legal and regulatory system to encourage compliance with the code. It calls on the conventional courts to enforce existing remedies for breaches of statutory laws, such as the Companies Act by delinquent directors and officers. Consistent with King I, King II was appended as part of the JSE's Listings Rules for which all listed firms are expected to voluntarily comply or explain, in case of non-compliance (JSE Listings Rules, 2007, subsections, 3.84, 7.F.5-6; 8.63).

3.3.3.3 ***Evaluation: Challenges of King II and the Shareholder Value Debate***

Despite gaining global recognition and receiving several endorsements from leading academics and policy-makers as an example of good corporate governance model in the world (e.g., Malherbe and Segal, 2003; Armstrong *et al*., 2006; Mallin, 2007; Andreasson, 2009), King II has been criticised. Most prominently, critics of King II argue that its insistence on South African companies to adopt the Anglo-American model, but equally tasking boards with meeting demanding stakeholder requirements, raises serious challenges (Kakabadse and Korac-Kakabadse, 2002, p.312; Spisto, 2005; West, 2006, 2009). At the centre of this local policy debate is whether this so-called *hybrid*[10] corporate governance model is sufficiently robust to effectively pursue the contrasting agenda of maximising shareholder value and providing a meaningful protection of the interests of a larger stakeholder group (Kakabadse and Korac-Kakabadse, 2002, p.313; Spisto, 2005; Andreasson, 2009).

For example, it has been suggested that the stakeholders' requirements that King II imposes on firms, such as the promotion of black empowerment and employment equity can be more easily accommodated by a continental European-Asian model of corporate governance (Kakabadse and Korac-Kakabadse, 2002, p.312). As has been discussed in chapter two, in a typical continental Europian-Asian corporate governance model, business and organisational issues are the remit of the executive board, while the broader stakeholder interests fall under the umbrella of the supervisory board. Spisto (2005) has also offered similar criticisms of King II. These criticisms may, however, be legitimate. This is because with increasing voluntary corporate social responsibilities reporting in Anglo-American

[10]It is described as a '*hybrid*' corporate governance model because while it remains predominantly Anglo-American, King II imposes substantial social, environmental, and ethical demands, compelling firms to depict some of the features of both the '*stakeholding' and 'shareholding'* corporate governance models (e.g., Kakabadse and Korac-Kakabadse, 2002; Spisto, 2005; Andreasson, 2009; West, 2006, 2009).

countries, South Africa is likely to loose its uniqueness unless it adopts stakeholder corporate board structures (West, 2009, p.15).

There are also serious concerns as to whether corporate and ownership structures are diffused enough to permit effective and efficient operation of factor markets in order to achieve voluntary compliance or self-regulation. Okeahalam (2004, p.7) points out, for example, that as a result of rigorous listings requirements[11], ownership is now more dispersed. However, control of companies still remains fairly concentrated in the hands of the traditional founding families of Oppenheimer, Rupert Gordon, and Mennel and Hersov of large companies.

In addition to challenges regarding its effectiveness given the South African corporate context, King II has also received further criticisms. It has been criticised for inconsistencies and ambiguities in some aspects of its corporate governance proposals (e.g., Sarra, 2004; West, 2006). Given its core objective of promoting the highest international corporate governance standards in South Africa (King Report, 2002, p.5), it is still unclear why King II calls for the exposition of African values and personality[12], most of which are neither compatible with international corporate governance standards nor with the Anglo-American model (King Report, 2002, para. 18; Sarra, 2004; West, 2006). West (2006, p.441) argues, for example, that the African value of collectiveness and communal rights conflicts with the individual right to private property that is fundamental in a typical Anglo-American model. Similarly, the value of consensus building in decision-making also conflicts with corporate structures where directors are appointed by only one party (shareholders) and whose interests are typically elevated above those of other stakeholders (West, 2006, p.441).

Recent empirical and anecdotal evidence suggests that concerns raised by critics of King II, especially regarding its effectiveness in achieving some of the stakeholder objectives it sets out, may be right. In the case of black economic empowerment, for example, an emerging consensus is that it is not working as originally expected (e.g., Murray, 2000; Sarra, 2004; Russell, 2007). Anecdotal evidence (e.g., Sarra, 2004; Russel, 2007) suggests that while

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[11] As has been noted above, more rigorous listings requirements (there has been revisions in 1995, 2000, 2003, 2005, and 2007) and corporate governance rules have caused a marked shrinkage in the number of companies listed on the JSE, falling from 668 companies in 1998, for example, to 426 in January 2004 (Armstrong *et al*., 2006, p.221).

[12] As has been explained above, these African values include: spiritual collectiveness over individualism; consensus building rather than dissension; humility and helpfulness over criticisms; the spirit of 'ubuntu' (humanity, peaceful co-existence, and brotherliness); hierarchical political structure based on an inclusive system of consultation and respect for authority at various levels; and perpetual optimism due to the strong belief in a superior being in the form of the creator of mankind, and inherent trust and belief in fairness over discrimination and prejudice; amongst others (King Report, 2002, para. 38.1).

black empowerment has helped in creating a coterie of “rich black elite” usually with good connections to the ruling African National Congress, it has not addressed in any meaningful way the welfare of the vast majority of black people in South Africa. Similarly, in a study of three large black economic empowerment companies and five top South African companies, Murray (2000) reports that top business remains predominantly white, with few signs of black integration into top management or ownerships.

Overall, the major challenge or weakness of King II is its proposition of a corporate governance model, in which companies need to satisfy shareholders’ demands by their ability to harness market forces, while by social and political dictates, require them to satisfy the interests of a wider stakeholder group (Kakabadse and Korac-Kakabadse, 2002, p.312; Spisto, 2005; West, 2006). While critics have called for a fundamental change, King II insists good corporate governance embraces both performance and conformance. It suggests that the challenge for South African companies is to seek the appropriate balance between the results of good entrepreneurship and enterprise (performance – corporate profitability) and constraints on corporate activity (conformance – corporate governance rules), which takes into account the expectations of shareholders and legitimate stakeholders alike (King Report, 2002, para. 7.2).

However, notwithstanding the South African context and given that King II is predominantly Anglo-American with emphasis on shareholder primacy, *the a priori* theoretical expectation will be that ‘*better-governed*’ firms should be associated with higher financial value than their ‘*poorly-governed*’ counterparts (e.g., Jensen and Meckling, 1976; Black *et al*., 2006a). This is the central thesis underlying this study. It seeks to empirically ascertain whether South African listed firms that comply better with King II tend to be associated with higher financial performance than those that do not.

3.4 **CHAPTER SUMMARY**

This chapter has focused on corporate governance in South Africa. The central objective has been to provide a comprehensive description of the South African corporate governance framework. Following existing literature, it classified the South African corporate governance landscape into two: external and internal. The external corporate governance is made up of major financial regulatory and enforcement bodies which are generally charged with the formulation, implementation and enforcement of statutory and voluntary corporate

laws. These include the Ministry of Finance, the Department of Trade and Industry, the Registrar of Companies, the Financial Services Board, the JSE Ltd, and the South African Reserve Bank.

By contrast, the internal corporate governance environment consists of statutory corporate laws and voluntary corporate Codes of conduct that govern firms from within. These include the South African Companies Act 1973, the Insider Trading Act 1998, the JSE's Listings Rules 2007 and the 1994 and 2002 King Reports on Corporate Governance for South Africa. For each of these internal corporate governance legislation or Code, and where applicable, its origins, provisions, strengths, challenges and weaknesses were comprehensively discussed.

The overall picture that emerged is that corporate governance is fluidly developing within the South African context. In this regard, the King Reports have played a significant role in formally institutionalising corporate governance in South Africa. They have helped in raising the awareness of what constitutes good corporate practice both among listed and non-listed firms. More importantly, they have helped in promoting a unique corporate governance model, which takes into account the interests of a wider stakeholder group, but equally recognises that it is important for firms to be economically profitable.

However, it also raises serious problems. This is because, while South Africa appears to have a well-established financial regulatory structure, it faces significant operational, enforcement and financial challenges. Crucially, the South African corporate governance model is predominantly Anglo-American. Critics suggest, however, that super-imposing social and environmental demands onto a corporate governance model that is predominantly Anglo-American, raises substantial room for conflicts.

It is suggested, however, that ignoring the South African context and given that King II is predominantly Anglo-American with emphasis on shareholder primacy, *the a priori* theoretical expectation will be that '*better-governed*' firms tend to be associated with higher financial value than their '*poorly-governed*' counterparts. This is the central thesis underlying this study. It seeks to empirically ascertain whether South African listed firms that comply better with King II tend to be associated with higher financial performance than those that do not.

Therefore, in the next chapter, the theoretical and empirical literature that attempts to link internal corporate governance structures with firm financial performance will be discussed.

CHAPTER FOUR

THEORETICAL AND EMPIRICAL LITERATURE REVIEW

4. INTRODUCTION

This chapter discusses the extant theoretical and empirical literature on internal corporate governance. Specifically, it seeks to achieve two main overarching goals. Firstly, it attempts to offer a review of the existing theoretical literature that tries to link internal corporate governance structures to firm financial performance. The central aim is to describe the theoretical blocks on which the study is based. The second objective of this chapter is to carry out a comprehensive review of the empirical literature on internal corporate governance structures and firm financial performance. Specifically, it traces the extant internal corporate governance-financial performance relationship literature to develop hypotheses among the variables examined in this study. The rest of this chapter is divided into three sections. Section 4.1 reviews the theoretical literature on internal corporate governance structures and firm financial performance. Section 4.2 looks at the empirical literature on internal corporate governance structures and firm financial performance, while section 4.3 summarises the chapter.

4.1 A REVIEW OF THE THEORTICAL LITERATURE ON INTERNAL CORPORATE GOVERNANCE AND FIRM FINANCIAL PERFORMANCE

This section discusses the relevant extant theories that attempt to link internal corporate governance structures and firm financial performance. As has been explained in chapter two, theories underlying corporate governance have been drawn from a variety of disciplines, such as accounting, economics, finance, and law, amongst others (e.g., Rwegasira 2000; Mallin, 2007; Solomon, 2007; Durisin and Puzone, 2009). As a result, past studies have adopted several theoretical perspectives. Common among them include agency, resource dependence, managerial signalling, legitimacy, organisational, political costs, stakeholder, stewardship and transaction cost economies theories. Clarke (2004) offers a detailed overview of most of these corporate governance theories.

In this study, and as in many others that will be reviewed in section 4.2, corporate governance is approached from a finance perspective, using a quantitative research

methodology. Central to corporate governance reforms pursued in South Africa and discussed in chapter three 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 has been carried out based on agency theory (Filatotchev and Boyd, 2009, pp.258, 260). *Agency* theory is, therefore, adopted as the principal underlying theory. However, given the complex nature of corporate governance, and in line with both prior studies (e.g., Nicholson and Kiel, 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, pp.307-310; Filatotchev and Boyd, 2009, p.259), where applicable, agency theory is complemented with *information asymmetry and managerial signalling*, *organisational*, *political costs*, *stewardship*, and *resource dependence* theories. This gives the study a multiple-theoretical orientation.

In the next subsection, agency theory will be discussed in detail. Specifically, the general principal-agent construct will be first presented in subsection 4.1.1.1. Subsection 4.1.1.2 will describe 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 will be briefly described in subsection 4.1.2.

4.1.1 **Agency Theory**

4.1.1.1 ***The General Principal-Agent Construct***

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, p.308). This relationship is shown to be bedeviled with two major interdependent problems: (1) information asymmetry between the principal and the agent, which will be dealt with in subsection 4.1.2.1; and (2) the possibility of conflicts or divergence of interests between the principal and the agent (Hill and Jones, 1992, p.132).

The latter agency problem arises out of three major assumptions. Firstly, it is assumed that the principal and the agent may have different attitudes toward risk-bearing (Eisenhardt, 1989, p.58). Secondly, the principal and the agent may intrinsically have different goals and interests (Eisenhardt, 1989, p.58). Finally, both parties to the relationship are assumed to be utility maximisers (opportunistic) to the extent that even if their goals or risk preferences were not to inherently differ, *ceteris paribus*, there would be a compelling reason to believe that a

rational agent would not always act in the best interests of the principal (Jensen and Meckling, 1976, p.308).

Agency theory is generally concerned with aligning the conflicting interests of principals and agents (e.g., Jensen and Meckling, 1976; Fama, 1980). Specifically, it suggests that the principal can limit divergences from his/her interests by establishing appropriate incentives or control mechanisms to limit the incidence of opportunistic action by the agent (Jensen and Meckling, 1976, p.308). Jensen and Meckling (1976) suggest that establishing these control mechanisms unavoidably generates three major costs. Firstly, the principal can expend resources to design a monitoring system (monitoring costs) aimed at reducing the aberrant activities of the agent. This may include efforts on the part of the principal to control the behaviour of the agent through contractual agreements regarding budget restrictions, compensation policies, and operating rules, amongst others.

Secondly, the principal may require the agent to spend resources (bonding costs) to guarantee that he/she will not take certain actions that would 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, p.132). 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 maximise the welfare of the principal, defined as *residual loss*. In short, the sum of the principal's monitoring expenditures, the agent's bonding expenditures, and any remaining residual loss is known as *agency costs* (Jensen and Meckling, 1976, p.308).

The next subsection will examine how this general principal-agent construct directly applies to the shareholder-manager relationship within modern corporations.

4.1.1.2 ***The Shareholder-Manager Relationship in Modern Corporations***

The recognition of the shareowner-managerial conflicts arising from the internal organisation of modern corporations in which ownership and control is separate, by economists, dates as far back as the eighteen century (see Smith, 1776). Smith (1776, p.700) notes, for example, that "*the directors of such [joint-stock] companies, however, being the managers rather of other people's money than of their own, it cannot well be expected, that they should watch over it with the same anxious vigilance with which the partners in a private copartnery frequently watch over their own. …Negligence and profusion, therefore, must*

always prevail, more or less, in the management of the affairs of such a company", cited in Jensen and Meckling (1976, p.305).

In response, Jensen and Meckling (1976) 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 by which utility or self-interests maximising managers can incur costs that may minimise the wealth of shareholders. Firstly, managers may expropriate corporate resources by awarding themselves overgenerous remuneration (pecuniary) packages (Jensen and Meckling, 1976, p.312). Secondly, they may expropriate corporate wealth by electing to consume more perquisites (non-pecuniary), which maximise their own utility (Jensen and Meckling, 1976, pp.312, 314).

Thirdly, managers may choose to invest excess cash flows (the free cash flow problem) over paying dividends even in the absence of profitable investment opportunities (Jensen, 1986, p.323). Finally, managers may either choose to devote less time, effort, personal skill and/or ingenuity to value-maximising activities, such as looking for new profitable investment opportunities (Jensen and Meckling, 1976, p.313).

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, p.1034). *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 will be discussed further below, these internal corporate governance structures may either be behaviour-oriented (i.e., board and auditing structures) or outcome-oriented (i.e., salaries, stock options, and shareholding) (Eisenhardt, 1989, p.58).

Firstly, shareholders can institute a set of hierarchical board structure variables to monitor the behaviour of managers (Fama, 1980, p.293). Secondly, shareholders can impose formal internal control systems, like auditing and budget restrictions to control managerial misbehaviour (Jensen and Meckling, 1976, p.308). Thirdly, shareholders can also design incentive remuneration systems which serve to more closely align managers' interests with theirs, including rewarding managers on the basis of their performance (Jensen and Meckling, 1976, p.308).

Finally, by incurring *bonding costs*, managers can be urged to sign contractual guarantees that insure shareholders against malfeasance on their part (Jensen and Meckling, 1976, p.308). 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, pp.323, 325). For greater effectiveness, shareholders must achieve an optimal balance between instituting behaviour-oriented internal structures (i.e., board and auditing structures) and outcome-oriented contracts (i.e., salaries, stock options, and shareholding) (Eisenhardt, 1989, p.58).

Internally, agency theory focuses on writing efficient contracts and implementing effective monitoring and bonding to secure shareholders' interests (Eisenhardt, 1989, p.58). *Externally*, it relies on efficient factor markets (i.e., corporate control and managerial labour) to govern or discipline internal managerial misbehaviour (Fama, 1980, p.294). Firstly, there exists efficient internal and external managerial labour markets, which exert pressures on firms to rank and remunerate managers according to their performance (Fama, 1980, p.294). Fama (1980, p.293) contends that internally there is usually 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.

Externally, each manager's current and future outside opportunity wage is determined by the current and future successes or failures of the managerial team (Fama, 1980, p.292). This means that each manager has an interest in the performance of the manager above and below him/her. As a consequence, each manager undertakes some amount of monitoring in both directions. This serves as a restraint on managers who may have incentive to expropriate shareholders wealth (Fama, 1980, p.293). Secondly, and as has been explained in chapter two, there exists efficient market for trading capital and corporate control. This means poorly performing firms may be easily acquired by their better-governed counterparts. Crucially, it offers owners of capital (shareholders) the opportunity to hedge against the failings of any particular firm by diversifying their holdings across different firms. This makes the separation of ownership and control in modern corporations an efficient form of economic organisation[13] (Fama, 1980, p.291).

[13]Denis and McConnell (2003, p.1) argue that there are benefits to separating ownership and control; otherwise such economic structure is highly unlikely to have persisted as it has. This is 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 (i.e., monitoring, bonding, and residual loss) arising from the institution of these internal corporate governance structures should help increase firm value and/or improve financial performance (Shabbir and Padget, 2005, p.3). This is the overriding theory underlying the recommendations of a raft of corporate governance reports in many countries (e.g., 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 with firm financial performance either through the use of empirical econometric models based on some *equilibrium* assumptions (e.g., Agrawal and Knoeber, 1996; Yermack, 1996; Weir *et al*., 2002; Haniffa and Hudaib, 2006; and Guest, 2009, amongst others) or recently through the construction of *composite corporate governance indices* (e.g., Gompers *et al*., 2003; Beiner *et al*., 2006; Black *et al*., 2006a; Henry, 2008; and Chen *et al*., 2009, amongst others).

In the next subsection, and given the complex nature of corporate governance, *information asymmetry and managerial signaling, stewardship, and resource dependence* theories will be briefly discussed as supporting theories to agency theory. Firstly, these theories are selected because they are closely related to agency theory. This means that they may help in shedding more theoretical insights into the agency relationship between shareholders and managers of firms. Secondly, and as will be discussed below, past studies (e.g., Donaldson and Davis, 1991, 1994; Kiel and Nicholson, 2003; Haniffa and Hudaib, 2006) that have positively approached the subject of corporate governance from a finance perspective have also relied on these theories[14] as complementary to agency theory.

4.1.2 **Internal corporate governance and financial performance: Supporting Theories**

4.1.2.1 ***Information Asymmetry and Managerial Signalling Theory***

Prior studies have relied on information asymmetry and managerial signalling as a supporting theory to explain the link between shareholders (principals) and managers (agents) in modern corporation (e.g., Shabbir and Padget, 2005; Black *et al*., 2006a). It suggests that managers as insiders typically have much more information, including private information,

[14]The discussions on the three supporting theories below will be relatively brief. At this stage, they are meant to give brief insights on their core arguments with regards to the shareholder-managerial relationship within modern firms. In reviewing the empirical literature in section 4.2, these supporting theories will further be fully integrated into the central arguments. Also, political costs and organisational theories will be explained and incorporated into the discussion in section 4.2.

about their companies than shareholders or prospective shareholders (e.g., Healy and Palepu, 2001; Kapopoulos and Lazaretou, 2007).

In this regard, and in making portfolio decisions, prospective shareholders in particular face two problems. Firstly, potential investors face the problem of selecting firms with the most capable management (*adverse selection*) (Rhee and Lee, 2008). Secondly, and just as it is with agency theory, they are confronted with the problem of ensuring that managers do not use their superior information to extract excessive perquisites or invest in unprofitable projects (*moral hazard*) (Kapopoulos and Lazaretou, 2007). Jensen and Meckling (1976) and Mishkin (1997) suggest that faced with asymmetric information and market uncertainty, rational prospective shareholders have two possible options. Firstly, they may either choose to take into consideration the potential costs of adverse selection and moral hazard in pricing a security of a firm. Secondly, they may also choose not to make the investment altogether.

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 (i.e., firms with the least adverse selection and moral hazard problems) will have to find ways by which they can credibly *signal* their quality to prospective shareholders[15]. A major way by which firms can creditably 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 practices, a firm will essentially be *signalling* to investors that it is better-governed. This suggests insiders will behave well with their investment, and by implication work in the interest of 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 being expropriated by managers (e.g., La Porta *et al*., 2002; Beiner *et al*., 2006). As equity values appreciate, the cost of outside equity capital can be expected to fall (e.g., Shabbir and Padget, 2005; Black *et al*., 2006a; Chen *et al*., 2009).

For example, by appointing independent non-executive directors to the board, a firm signals to potential investors of its intentions of treating them fairly, and for that matter the safety of their investment. In this regard, by signalling (disclosing) its better governance qualities to investors, a firm reduces information asymmetry. This is likely to lead to an

[15]To be able to signal their quality, better-governed firms will have to incur signaling costs (i.e., agency costs) (e.g., Spence, 1973; Core, 2001). These include information production and dissemination costs of hiring professional accountants, auditors, and lawyers (Hassan and Marston, 2008, p.5). They also include potential exposure to litigation and competition, incentive for private information, and proprietary costs that are typically associated with increased disclosure (Lang and Lundholm, 1993, p.247; Core, 2001, p.443).

increase in share price and firm value for existing shareholders due to the potential increase in the demand for its shares (e.g., Deutsche Bank, 2002, p.5; Black *et al*., 2006a and b). Equivalently, an increase in a firm's share price should, *ceteris paribus*, results in a reduction in the cost of outside equity capital (e.g., Botosan, 1997; CLSA, 2000, p.1).

4.1.2.2 ***Stewardship theory***

Contrary to agency, information asymmetry and signaling theories that place emphasis on managerial opportunism and monitoring, stewardship theory posits that executive managers are intrinsically trustworthy individuals (Nicholson and Kiel, 2003, p.588). As such, managers should be fully empowered to run firms because they are good stewards of the resources entrusted to them (Letza *et al*., 2004, p.244). Further, stewardship theory makes several assumptions about the behaviour of senior managers. Firstly, it assumes that since top managers usually spend their entire working lives in the company they govern, they are more likely to understand the businesses better than outside directors and so can make superior decisions (Donaldson and Davis, 1991, p.52). Secondly, executive managers possess superior formal and informal information and knowledge about the firm they manage, which can aid better decision-making (Donaldson and Davis, 1994). Finally, competitive internal and external market discipline and the fear of damaging their future managerial capital ensure that agency costs are minimised (e.g., Fama, 1980; Fama and Jensen, 1983a). As a result, proponents of stewardship theory contend that better financial performance are likely to be associated with internal corporate governance practices that grant managers greater powers, such as combining the positions of company chairman and CEO (Donaldson and Davis, 1991, 1994).

4.1.2.3 ***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 board of directors is not only necessary for ensuring that managers are effectively monitored, but also they serve as an essential link between the firm and the critical resources that it needs to maximise financial performance (Pfeffer, 1973, p.350). Firstly, the board and non-executive directors in particular can offer essential resources, such as expert advice, experience, independence, and knowledge (Haniffa and Cooke, 2002, p.319). Secondly, they can bring to the firm reputation and critical business contacts (Haniffa and

Hudaib, 2006, p.1039). Thirdly, the board can facilitate access to business/political elite, information and capital (Nicholson and Kiel, 2003, p.589). Finally, the board provides a critical link to a firm's external environment and significant stakeholders, such as creditors, suppliers, customers, and competitors. As a result, it has been argued that greater level of links to the external environment is associated with better access to resources (Nicholson and Kiel, 2003, p.589). This can impact positively on firm financial performance.

To summarise, this section has attempted to describe the theoretical motivations of the study. Following prior 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 signaling, stewardship, and resource dependence. Positively approaching the subject of corporate governance from a finance viewpoint, these theories are relevant and closely related. As will be discussed in section 4.2, together, they will help in explaining the often complex agency relationship between owners and managers in modern firms.

Briefly, agency theory suggests that due to the separation of ownership and control in modern firms, rational managers are less likely to always work in the interests of owners. To limit divergence of managerial interests, shareholders will have to institute internal corporate governance mechanisms to monitor managers. This will result in agency costs being incurred, including monitoring, bonding and residual loss. All else equal, the institution of effective corporate governance structures will reduce agency costs. This is likely to increase firm value and/or financial performance. Information asymmetry and managerial signaling theory takes similar view to agency theory. It suggests that by incurring signaling costs, better-governed firms can increase their value by signaling their better quality to prospective investors. By contrast, stewardship theory suggests that due to their information and knowledge advantages, better financial performance is likely to be associated with greater managerial trust and powers. Finally, resource dependence theory indicates that internal corporate governance structures like the board of directors help to link the firm to critical business inputs needed for higher financial performance.

The next section of this chapter will review the empirical literature on internal corporate governance and firm financial performance. In reviewing the empirical literature, and as has already been pointed out, the theories discussed above will be fully integrated into the central arguments.

4.2 A REVIEW OF THE PRIOR EMPIRICAL LITERATURE ON INTERNAL CORPORATE GOVERNANCE AND HYPOTHESES DEVELOPMENT

Following the implications of agency theory, prior literature has attempted to establish an empirical association between internal corporate governance structures and firm financial performance. This has been done mainly through two major competing models: an *equilibrium-variable* model and a *compliance-index* model. The next subsection will briefly set out the central theoretical arguments underlying both models. At this stage, the rationale will be to help guide the review of the empirical literature and hypotheses development. In subsection 5.2 of chapter five, the underlying theories and potential weaknesses of the two models will be described in detail.

4.2.1 The Equilibrium-Variable Model versus the Compliance-Index Model

The *equilibrium-variable* model assumes that there is an endogenous relationship between the institution of internal corporate governance structures and firm financial performance (e.g., Agrawal and Knoeber, 1996; John and Senbet, 1998). That is, it assumes that every firm has its own optimal governance structure, and as such each firm should have the freedom to make its own governance choices without any external interference (i.e., a firm's governance structure is internally determined) (Danielson and Karpoff, 1998, p.348). As a result, a firm will continue to establish governance structures to the point where the cost of instituting an additional governance structure is at least equal to the marginal increase in its financial performance or to the point where the firm is in equilibrium[16] with respect to its governance choices (e.g., Agrawal and Knoeber, 1996; Himmelberg *et al*., 1999).

In this regard, while the presence of a nomination committee, for example, may be effective in helping one firm to reduce agency costs and increase its value, it may not necessarily be effective for another firm due to differences in ownership, size, and industry, amongst other firm-level characteristics. It is the oldest approach within the literature (e.g., Baysinger and Butler, 1985; Demsetz and Lehn, 1985), and was popularised before the worldwide proliferation of good corporate governance codes in the 1990s (e.g., Danielson and Karpoff, 1998; Black *et al*., 2006a; Aguilera and Cuervo-Cazurra, 2009).

[16]As will be clarified further in subsection 5.2 of chapter five, while it may be theoretically possible for a firm to be in equilibrium with respect to its governance choices, it is extremely difficult to achieve that in practice. Arguably, this makes the equilibrium assumption unrealistic.

By contrast, the *compliance-index* approach explicitly appeared in the corporate governance literature after the diffusion of corporate governance codes around the world in the early 2000s (e.g., Black, 2001; Gompers *et al*., 2003; Morey *at al*., 2009). This approach assumes that a company's governance mechanisms are externally imposed, and as such firms tend to choose governance structures as a set (e.g., Danielson and Karpoff, 1998; Shabbir and Padget, 2005). Specifically, it posits that a company's financial performance is likely to be influenced by a number of agency mechanisms with potential interactive effects in an integrated framework rather than as independent structures. As a consequence, instead of looking at one single corporate governance mechanism in isolation, this model recommends the construction of a compliance or composite governance index, encapsulating a comprehensive set of corporate governance provisions to examine the corporate governance-performance link (e.g., Beiner *et al*., 2006; Bebchuk *et al*., 2009).

As will be discussed in detail in subsection 5.2 of chapter five, prior studies have mostly used one model or discounted the other purely on the basis of perceived theoretical strengths or weaknesses (e.g., Agrawal and Knoeber, 1996; Beiner *at al*., 2006). However, it is contended that such a crucial methodological choice ought to be based on their respective theoretical and empirical validity rather than on their theoretical appropriateness alone. Therefore, using the same dataset and research context, both models will be estimated in this study. The empirical rationale is to ascertain whether different research conclusions may be reached depending on the model used. This may inform methodological choices of future researchers.

In the following two subsections, the extant literature regarding these two competing models will be reviewed. Specifically, the first subsection will draw on the extant literature to develop hypotheses of the relationship between firm financial performance and specific internal corporate governance structures as found both in the prior literature and King II.

The second subsection will review prior studies that focus on the construction of a compliance or composite corporate governance index and firm financial performance. Also, due to the fact that the African corporate governance and performance literature is still in its infancy (Okeahalam and Akinboade, 2003, p.2; Okeahalam, 2004, p.360; Mangena and Chamisa, 2008, p.28), a separate subsection will not be devoted to prior South African or African studies. Instead, where applicable, the limited available South African or African corporate governance studies will be reviewed as part of the mainstream international corporate governance literature.

4.2.2 **Internal Corporate Governance Structures and Firm Financial Performance: The Equilibrium-Variable Model**

4.2.2.1 ***Board Structure Variables***

As has been discussed above, a theoretical consensus is that good internal corporate governance structures, such as board of directors and internal controls help in aligning managerial interests with those of shareholders by reducing agency costs (e.g., Jensen and Meckling, 1976; Fama, 1980; Netter *et al*., 2009). Of these, corporate board of directors is seen as a central part or the 'apex' of any internal corporate governance structure (e.g., Lipton and Lorsch, 1992; John and Senbet, 1998; Fillatotchev and Boyd, 2009). The board's main role is to ensure conformance and performance of the firm's management. This normally implies five functions: direction (advice), executive action (strategy), service and resource support (resource dependence), supervision (monitoring), and accountability (Rossouw *et al*., 2002, p.289; Brennan, 2006, p.580).

However, it has been suggested that to be able to protect shareholders' interests, corporate boards must be effective and efficient in performing their functions (e.g., Jensen, 1993; Brennan, 2006). Past evidence suggests that effective and efficient board performance is influenced by several factors, such as board diversity, composition, and size, amongst others (e.g., Yermack, 1996; Baranchuk and Dybvig, 2009).

Therefore, following prior literature and the provisions of King II, the next subsections will review studies on a set of 11 internal corporate board structure variables that have been found to influence financial performance of firms. These include board diversity, corporate board size, role or CEO duality, the percentage of non-executive directors, the frequency of board meetings, the presence of key internal board committees (namely, audit, nomination, and remuneration committees), director shareownership, director shareownership squared, and director shareownership cubed[17].

For each of the 11[18] board structure variables, the review will be divided into four parts. First, the prior theoretical links between a particular board structure variable and firm financial

[17]Subsection 5.2 of chapter five and Appendix 4 will set out in detail the way each of these board structure variables will be operationalised in this study. Also, Tobin's Q (Q-ratio) and return on assets (ROA) will be used as proxies for firm financial performance in this study. Similarly, subsection 5.2 discusses the rationale for their selection and how they will be measured in this study.

[18]The prior literature relating to the presence of the three key board committees (audit, nomination, and remuneration committees), and director shareownership variables (director shareownership, director shareownership squared, and director shareownership squared) will be reviewed together, respectively. This will mean that seven main hypotheses will be developed and tested for the equilibrium-variable model.

performance will be presented. Second, the corresponding prior empirical evidence regarding the variable will be reviewed. Third, the provisions of King II and other relevant South African corporate governance rules relating to the variable will be described. Finally, and on the basis of the review, research hypotheses will be then developed for the variable.

4.2.2.2 ***Board Diversity***

i) *The Theoretical Link between Board 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 has broadly been defined as the various attributes that may be represented among directors in the boardroom in relation to board process and decision-making, including age, gender, ethnicity, culture, religion, constituency representation, independence, knowledge, educational and professional background, technical skills and expertise, commercial and industry experience, career and life experience (Van der Walt and Ingley, 2003, p.219). There are mixed theoretical propositions as to the impact of board diversity on shareholder value: those who argue for more diversity in boardrooms and those who are in favour of corporate monoculture and boardroom uniformity.

Proponents of diversity in corporate boardrooms usually base their arguments on agency, resource dependence, signalling, and stakeholding theories (e.g., Goodstein *et al*., 1994; Carter *et al*., 2003). Firstly, agency theory suggests that boards of diverse backgrounds rather than homogenous elite groups with similar socio-economic backgrounds, increases board independence and improves executive monitoring (Van der Walt and Ingley, 2003, p.219). Secondly, it brings diversity in ideas, perspectives, experience, and business knowledge to the decision-making process in boardrooms (Baranchuk and Dybvig, 2009, p.715). This can aid better appreciation of the complexities of the corporate external environment and marketplace. It can also increase creativity and innovation in boardrooms due to diversity in cognitive abilities, which can also facilitate effective decision-making (Carter *et al*., 2003, p.36)

Thirdly, resource dependence theory indicates that board diversity helps to link a firm to its external environment and secure critical resources, including skills, business contacts, prestige and legitimacy (Goodstein *et al*., 1994, p.241). Fourthly, Rose (2007, p.405) argues that a higher degree of board diversity may serve as a positive signal to potential job applicants. This will help to attract well qualified persons outside the circles where board

candidates are usually recruited from. This can also generate healthy competition within the firm's internal labour market. This is because women and ethnic minorities, for example, will realise that they are not excluded from the highest positions within the firm.

Finally, corporate boards of qualified individuals of diverse backgrounds and constituencies can help provide a better link with a firm's stakeholders, such as consumers and the local community. This can improve a firm's reputation and commercial opportunities (Shrader *et al*., 1997, p.355). Carter *et al*. (2003, p.36) suggest, for example, that by matching the diversity of a company's board to the diversity of its customers and suppliers, it can significantly increase its ability to penetrate competitive markets.

However, relying on agency and organisation theories, opponents contend that board diversity can impact negatively on firm performance. Firstly, it has been suggested that a more diverse board may not necessarily result in more effective monitoring and decision-making. This is because diverse board members may be appointed as a sign of tokenism, and as such their contributions may be marginalised (Rose, 2007, p.406). 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, p.243).

Thirdly, diverse board members may bring their individual and constituencies' interests and commitments to the board (Baysinger and Butler, 1985, p.110). The greater the diversity of these interests, the greater the potential for conflicts and factions to emerge (Baranchuk and Dybvig, 2009, p.725). This can inhibit boardroom cohesion and performance (Goodstein, *et al*., 1994, p.243). Finally, Rose (2007, p.405) argues that the suggestion that company boards should be constituted to necessarily reflect all their important stakeholders and society as a whole is incompatible with the notion of business. This is because if board members are not appointed on the basis of merit or their ability to contribute meaningfully to the decision-making process in the boardroom, *ceteris paribus*, will result in the creation of diverse but comparatively ineffective larger boards. This can impact negatively on firm financial performance.

ii) *The Empirical Literature on Board Diversity and Financial Performance*

Board diversity is one of the under researched board structure variables (Carter *et al*., 2003). Also, the limited extant literature mainly focuses on American firms with conflicting results (e.g., Carter *et al*., 2003; Shrader *et al*., 1997; Francoeur *et al*., 2008). This makes it a

fertile area for further research, especially in South Africa where there is a dearth of board diversity studies.

Using a small sample of 25 American *Fortune* 500 firms, Adler (2001) finds a positive correlation between firms that employ higher percentage of women in top management and a raft of accounting measures of performance, including ROA, ROE, ROI and ROS. Adler's study has received criticisms for its small sample, focusing mainly on large firms, as well as for using only accounting measures of performance (see Francoeur *et al*., 2008). Carter *et al*. (2003) also report a positive relationship between board diversity (measured by gender and ethnicity) and market measure of performance (proxied by Tobin's Q) using a larger sample of 638 American *Fortune* 1000 firms in 1997. This suggests that US firms with higher proportion of women and ethic minorities on their boards generate higher financial performance. They demonstrate further, through the use of two stage least squares, that the positive association persists after controlling for endogenity and firm specific characteristics.

Consistent with prior evidence, Francoeur *et al*. (2008) examine whether the participation of women in a firm's board and senior management enhances financial performance in a sample of 230 of the 500 largest Canadian listed firms from 2001 to 2004. Applying Fama and French three factor model, they report that firms operating in complex environments do generate positive and significant abnormal returns when they have a higher proportion of women officers.

Of direct relevance to this study, and using a cross-sectional sample of 117 South African listed firms in 2003, Swartz and Firer (2005) report a statistically significant and positive association between the percentage of ethnic members (non-whites) on corporate boards' and intellectual capital performance. In this study, board diversity is defined in broader terms to cover gender and ethnicity with different performance proxies: Tobin's Q and ROA. It is argued that if diverse boards perform better than their non-diverse counterparts, it should ultimately reflect in their financial bottom line. To capture the impact of possible changes in board diversity over time, the sample period used in this study is also longer: 2002-2006. The analysis in this study may provide new valuable insights into the board diversity and financial performance relationship literature.

In contrast, but consistent with the conflicting nature of prior board diversity theory, the findings of other researchers report that board diversity rather impacts negatively on financial performance. Goodstein *et al*. (1994) investigate the impact of board diversity on a firm's ability to initiate strategic changes in a total of 335 American firms from 1980 to 1985.

They find that firms with diverse boards are less likely to initiate strategic changes than those with homogenous boards. This suggests that board diversity generates conflicts, which limit the board's ability to initiate timely strategic changes.

Shrader *et al*. (1997) examine the association between the percentage of female board members and two accounting measures of financial performance (ROA and ROE) for a sample of 200 American *Fortune* 500 firms in 1992. Their results suggest a statistically significant and negative relationship between the percentage of women on the board and firm performance. They explain the negative relationship by the theory of social margianalisation and exclusion. Specifically, Shrader *et al.* (1997) argue that while the views of women on the board may be marginalised, their presence may also have financial costs implications to the firm. This means that while they will presumably not be making any meaning contributions to corporate board decisions, they will still be paid their financial emoluments. This may impact negatively on firm financial performance, and thus helps in explaining the negativer female board members-financial performance link.

In a departure, using a sample of 95 American listed firms, Zahra and Stanton (1988) find no significant relationship between the percentage of ethnic minority directors and several accounting measures of performance, including ROE and EPS. Similarly, Rose (2007) investigates whether female board representation influence firm performance using a sample of Danish listed firms over the period 1998-2001. Consistent with the evidence of Zahra and Stanton (1988), he finds no significant link between firm performance as measured by Tobin's Q and female board representation.

To sum up, and consistent with the mixed nature of the extant board diversity theoretical literature, the prior empirical evidence is equally conflicting. Specifically, and as has been discussed above, there are three strands of empirical evidence. These studies include those that report: (1) significant positive; (2) significant negative; and (3) no significant relationships between board diversity and firm performance. The conflicting international evidence may partly be explained by the fact that prior studies use different board diversity and performance proxies, sample periods and estimation techniques. However, it may also be explained by country and contextual differences.

In this regard, South Africa offers an interesting research context to explore the impact of board diversity on firm performance. It has ethnically diverse populace (i.e., made up of people from almost every part of the world, including European Whites or Caucasians, Chinese, Indians, Mixed Race and Black Africans). As has been discussed in chapter three,

affirmative action laws meant to address the negative social and economic legacies of Apartheid have been introduced since 1994. Central to the affirmative action legislation is ensuring that non-whites, especially black men and women, are appointed to positions of significance in South African companies. Examining board diversity under this context can arguably bring new insights that may enrich the board diversity-performance literature.

iii) *Recommendations of King II, Employment Equity Act and the JSE's Listings Rules*

With respect to this study, board diversity is defined on the basis of gender and ethnicity. Specifically, and as will be discussed in chapter five, board diversity is measured by a dichotomous variable that takes the value of one if a board consists of a white, a black, a male and a female, zero otherwise[19]. As has been discussed in chapter three, the South African Employment Equity Act 1998 stipulates that every firm with more than 100 employees should ensure that its labour force, including top management is constituted by a balance between non-whites and whites. Among the non-whites, black men and women are expected to be given special preference.

By contrast, King II and the JSE's Listings Rules do not set any specific targets 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). This is expected to ensure that the composition of South African corporate boards reflect the diverse South African context, as well as make them effective. They also encourage firms to comply with the provisions of the Employment Equity Act. This indicates that King II expects board diversity to have positive impact on the financial performance of firms.

Swartz and Firer (2005) report that South African listed firms significantly enhance their intellectual capital performance by having ethnically diverse board of directors. If diverse boards perform better than homogenous boards, then they are likely to generate significantly higher financial performance. However, given the mixed prior international evidence, both the null and alternate hypotheses are tested. Thus, the respective first null (1) and alternate hypotheses to be tested in this study are that:

[19]As will be explained further in chapter eight, defining board diversity separately on the basis of gender or ethnicity does not lead to any significant difference in the research results. Board diversity could also have been measured in percentages rather as dummy variable. However, and as will be discussed further in subsection 6.6 of chapter six (see Tables 4 and 11), board members from diverse backgrounds (gender and ethnicity) is very small and unevenly distributed among the sampled firms. To avoid having a lot zero observations or small percentages, board diversity will be measured as a dummy variable rather than as a continuous variable. This will be acknowledged as a weakness of this study in section 10.4 of chapter ten, and will also be identified as an avenue for improvement for future research in chapter ten.

H_0 : There is a statistically significant positive relationship between board diversity and firm financial performance, as measured by both ROA and the Q-ratio.

H_1 : There is no statistically significant positive relationship between board diversity and firm financial performance, as proxied by both ROA and the Q-ratio.

4.2.2.3 ***Corporate Board Size***

i) *The 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 extant literature has sought to provide a theoretical and empirical nexus between corporate board size and firm financial performance with mixed results (e.g., Lipton and Lorsch, 1992; Yermack, 1996).

One theoretical (agency theory) proposition is that larger boards are bad, while smaller boards are good and effective at improving financial performance (e.g., Lipton and Lorch, 1992; Sonnenfeld 2002, p.108). Firstly, this is because while they plan, organise, direct and control the business of the organisation, the size of the board has also got financial costs implications. That is, '*ceteris paribus*' larger boards consume more pecuniary and non-pecuniary company resources in the form of remuneration and perquisites than smaller boards. Secondly, Jensen (1993, p.865) argues that when a board gets too big, it does not only become difficult to co-ordinate, but also comparatively easier to control by a dominant CEO due to associated director shirking and free-riding.

More specifically, Lipton and Lorsch (1992, p.67) suggest that corporate board size must preferably fall between eight and nine directors. They argue that as corporate board size goes beyond a maximum number of ten directors, additional costs of having larger boards typically associated with slow decision-making are higher than any marginal gains from intense monitoring of management's activities. Thirdly, it is contended that smaller boards are more likely to be cohesive, and to have more effective discussions. This is because all directors are able to candidly contribute and express their ideas and opinions within the limited time available (Lipton and Lorsch, 1992, p.68)[20]. Finally, Yawson (2006, p.77) argues that

[20]It is worth reminding that the proponents of smaller corporate boards (e.g., Lipton and Lorsch, 1992; Jensen, 1993; Yermack, 1996), mainly draw their inspiration from organisational theory, which posits that as groups increase in size they become less effective because the associated coordination problems tend to outweigh the benefits gained from having a larger pool of talented individuals to draw from (e.g., Steiner, 1972; Pfeffer, 1973; Hackman, 1990).

larger boards suffer from higher agency problems and are far less effective than smaller boards. Thus, limiting corporate board size may improve efficiency.

A contrary theoretical view (agency and resource dependence) is that larger boards may possibly be better for corporate financial performance (e.g., John and Senbet, 1998; Yawson, 2006). Firstly, larger boards are associated with diversity in skills, business contacts, and experience that smaller boards may not have, which offers greater opportunity to secure critical resources (Haniffa and Hudaib, 2006, p.1038). Similarly, larger boards offer greater access to their firm's external environment, which reduces uncertainties and also facilitates securing critical resources, such as finance, raw materials, and contracts (e.g., Pearce and Zahra, 1992; Goodstein *et al*., 1994). Secondly, larger boards enhance the knowledge base on which business advice can be sought, which increases managerial ability to make important and better business decisions (Yawson, 2006, p.76). Finally, a corporate board's monitoring capacity is demonstrated to be positively related with board size (John and Senbet, 1998, p.385). This is because a larger number of people with varied expertise will be better placed to subject managerial decisions to greater scrutiny and monitoring (Kiel and Nicholson, 2003, p.194). This will help balance the power of otherwise a dominant CEO.

ii) *The Empirical Evidence on Board Size and Financial Performance*

Empirically, the evidence regarding the association between board size and firm financial performance is conflicting (e.g., Yermack, 1996; Adams and Mehran, 2005; Beiner *et al*., 2006; Henry, 2008; Guest, 2009). Yermack (1996) is one of the first to investigate the relationship between board size and financial performance in a sample of 452 large US industrial corporations between 1984 and 1991. Generally, he reports an inverse relationship between corporate board size and performance (Tobin's Q). He demonstrates that his evidence is robust to firm specific characteristics like size, growth potential, board composition (% of outside directors), director ownership and industry. Specifically, Yermack's results show that investors valuation of companies' declines steadily over a range of board sizes between 4 and 10. Beyond a board size of 10, he finds no relationship between board size and market valuation. Yermack's results support prior theoretical suggestions (e.g., Lipton and Lorsch, 1992; Jensen, 1993).

Recent US evidence (e.g., Vefeas, 1999a and b; Cheng, 2008; Cheng *et al*., 2008; Coles *et al*., 2008) and non-US evidence (e.g., Eisenberg *et al*., 1998; Bozec, 2005; Guest, 2009) are largely consistent with those of Yermack that, on average, smaller boards tend to

perform better than larger ones. Eisenberg *et al*. (1998, p.35) criticise Yermack (1996) for focusing purely on large firms, and as such his results cannot be extended to smaller firms, as well as firms operating in different legal and cultural environments. On this basis, Eisenberg *et al*. (1998) examine the association between board size and performance in a sample of 879 small and medium size Finnish firms from 1992 to 1994. Consistent with Yermack (1996), they report a negative correlation between firms' profitability, measured by industry-adjusted return on assets (ROA) and board size.

Also, Dahya *et al*. (2002) find a negative relationship between performance-related top-management turnover and board size in a sample of 460 UK listed firms from 1988 to 1996. Similarly, using a large sample of 2,746 UK listed firms from 1981 to 2002, Guest (2009) report a statistically significant and negative relationship between board size and performance, as proxied by Tobin's Q, ROA, and share returns. The findings of these studies generally offer empirical support to the theory that smaller boards are more likely to permit: candid evaluation of managerial performance; effective managerial monitoring; and faster decision-making (e.g., Lipton and Lorch, 1992; Jensen, 1993). Finally, Haniffa and Hudaib (2006) report a negative relationship between board size and financial performance, as measured by Tobin's Q, in a sample of 347 Malaysian listed firms. This also offers empirical support to the conclusions of prior studies that larger boards are not only perceived by investors as ineffective at monitoring managers, but also consume more managerial perquisites than smaller ones (e.g., Yermack 1996; Eisenberg *et al*., 1998).

By contrast, using a sample of 35 US listed Banking firms from 1959 to 1995, Adams and Mehran (2005) report a statistically significant and positive relationship between board size and Tobin's Q. They demonstrate that the positive relationship remain unchanged after accounting for potential endogeneities between board size and the Q-ratio. Beiner *et al*. (2006) and Henry (2008) have independently reported similar statistically significant and positive relationship between board size and the Q-ratio for a sample of Swiss and Australian listed firms, respectively.

Also, Sanda *et al*. (2005) find a positive correlation between board size and profitability, as proxied by return on equity (ROE), in a sample of 93 Nigerian listed firms from 1996 to 1999. This is in line with the theory that larger boards offer greater access to their firm's external environment, which reduces uncertainties and also facilitates securing critical resources, such as finance, raw materials, and contracts (e.g., Pearce and Zahra, 1992; Goodstein *et al*., 1994). Similarly, Haniffa and Hudaib (2006), employing an accounting

measure of performance, as proxied by ROA, find a positive relationship between board size and performance. This was in contrast with the negative relationship that they found between board size and Tobin's Q. This suggests that differences exist between investors and companies in their perception of the relevance of larger boards.

Theoretically, the finding of Haniffa and Hudaib (2006) implies that larger boards enhance the knowledge base on which business advice can be sought, which increases managerial ability to make important and better business decisions (Yawson, 2006, p.76). Further, Kiel and Nicholson (2003), Beiner *et al*. (2006), and Coles *et al*. (2008) offer recent evidence for Australian, Swiss, and US listed firms, respectively, which is entirely in line with those of Haniffa and Hudaib (2006).

Using a sample of 72 Zimbabwean listed firms from 2002 to 2004, Mangena and Tauringana (2008) also report a positive nexus between board size and performance in an environment of severe political and economic uncertainty. Mangena and Tauringana (2008) demonstrate that the tenor of their results remain unchanged whether historical or inflation adjusted data is used. This implies that the market perceives larger boards as providing more effective monitoring and wider contacts in a period of severe political and economic uncertainty.

Of direct importance to this study, and using a sample of 84 South African listed firms in 1998, Ho and Williams (2003)[21] report no significant link between the efficiency of value added by a firm's physical and intellectual capital and board size. Similarly, Mangena and Chamisa (2008) examine the relationship between board size and the incidences of listing suspensions by the JSE Ltd. Using a sample of 81 South African listed firms from 1999 to 2005, they document no significant link between board size and incidences of listing suspension by the JSE.

[21]This study differs from prior South African studies of Ho and Williams (2003) and Mangena and Chamisa (2008) in several important respects. As has been explained above, Ho and Williams' (2003) study focuses on ascertaining the association between internal corporate governance structures, such as board size and a firm's physical and intellectual capital performance, using a cross-sectional sample of 84 South African firms in 1998. However, given that South African firms predominantly have shareholding-orientation (see section 2.1 of chapter two and subsection 3.3.3.3 of chapter three), it is persuasive to argue that they are likely to be more concerned with their overall long-term financial performance than physical and intellectual capital performance alone. Moreover, if better-governed South African firms tend to be associated higher intellectual capital performance, it can be expected to ultimately reflect in higher financial performance. Therefore, conventional financial performance proxies, namely, Tobin's Q and return on assets (ROA) are used in this study. Also, since the effects of better corporate governance practices can be expected to change over time, the sample period examined in this study is longer: 2002-2006. These improvements may uncover new insights that can potentially enrich the internal corporate governance-performance literature. With regard to Mangena and Chamisa (2008), the focus of their study is entirely different from this study. While they examine whether South African firms that are better-governed are less likely to be suspended from the JSE Ltd, this study sets out to ascertain whether better-governed South African firms are more likely to be associated with higher financial performance.

iii) *Recommendations of the Companies Act, the JSE's Listings Rules and King II*

According to the South African Companies Act 1973, all pubic companies must have a minimum of two 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 also does not specify the exact number of directors that should form a board. However, it sets out a general principle that every board must consider whether its size makes it effective. This suggests that even though King II admits that a company's board size may probably affect its performance, it leaves the option of determining the actual board size for the companies themselves to decide. A plausible 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, p.486).

As has been discussed above, the results of Ho and Williams (2003) find no significant relationship between a firm's physical and intellectual capital performance and board size in a sample of 84 South African listed firms. Similarly, and using a sample of 81 South African firms, Mangena and Chamisa (2008) report no significant link between the incidences of listing suspensions by the JSE and board size. Together, they suggest that board size may not be an important driver of financial performance in South African listed companies. However, given the mixed international evidence, both the null and alternate hypotheses are tested. Hence, the respective second (2) null and alternate hypotheses to be tested in this study are that:

H_0 : There is a statistically significant positive relationship between board size and firm financial performance, as proxied by both ROA and the Q-ratio.

H_1 : There is no statistically significant positive relationship between board size and firm financial performance, as measured by both ROA and the Q-ratio.

4.2.2.4 ***Role or CEO Duality***

i) *The Theoretical Link between Role or CEO Duality and Financial Performance*

Another board structure variable that has the potential of increasing or reducing the agency problem is role or CEO duality. It refers to a board leadership structure in which one person undertakes the combined roles of chief executive officer (CEO – management) and chairman (control) of the board. The chairman of the board is responsible for managing the

board. These may typically include nominating new board members, reviewing the performance of senior management, setting agenda for board meetings, and settling conflicts which may arise within the board (Laing and Weir, 1999, p.458). In contrast, the CEO is responsible for the day-to-day management of the company, including implementing board decisions.

There are three theoretical propositions regarding role or CEO duality: stewardship, resource dependence, and agency theories. Stewardship and resource dependence theories suggest that role duality can have a positive impact on firm financial performance. Firstly, Weir *et al*. (2002, p.585) contend that as an insider, the CEO tend to have greater knowledge, understanding and experience of the strategic challenges and opportunities, which the company faces, than a non-executive chairman.

Secondly, it has been argued that role duality grants a charismatic CEO the opportunity to have a sharper focus on firm objectives (Haniffa and Hudaib, 2006, p.1040). This implies a visionary CEO will have the chance to shape the long-term fortunes of a firm with minimum board interference (Haniffa and Cooke, 2002, p.321). This may lead to improved performance due to the rapid management decision-making that arises from the provision of clear and unambiguous corporate leadership (Haniffa and Hudaib, 2006, p.1040). Thirdly, Vafeas and Theodorou (1998, p.389) suggest that role duality avoids extra compensation to the chairman, which can results in a reduction in managerial remuneration. Finally, Bozec (2005, p.1927) argues that unified firm leadership associated with role duality improves managerial accountability as it makes it easier to charge the blame for poor performance.

Another stream of the theoretical (agency) literature suggests that role or CEO duality can impact negatively on firm performance (e.g., Lipton and Lorsch, 1992; Jensen, 1993). According to Jensen (1993, p.866) the function of the chairman is to run board meetings and oversee the process of hiring, firing, evaluating and remunerating the CEO. Due to this, Jensen (1993) contends that role or CEO duality increases agency problems by compromising the board's effectiveness in monitoring the CEO. As a corollary, agency theorists argue that separating the two roles will help increase board independence by providing effective checks and balances over managerial behaviour (Lipton and Lorsch, 1992, p.72; Haniffa and Cooke, 2002, p.321). It has been suggested, for example, that separating the two roles will make it easier for the board to remove a non-performing CEO (Jensen, 1993, p.866; Monks and Minow, 2001, p.208). This can help in preventing managers from pursuing goals that advance their self-interests to the disadvantage of shareholders.

ii) *The Empirical Evidence on the Role or CEO Duality and Firm Financial Performance*

Empirically, the evidence regarding the relationship between role or CEO duality and firm financial performance is mixed (e.g., Rechner and Dalton 1991; Brickley *et al*., 1997; Weir *et al*., 2002). Rechner and Dalton (1991) investigate the relationship between role or CEO duality and three accounting measures of financial performance (ROE, return on investment and profit margin) of 141 large American corporations (*Fortune* 500 firms) from 1978 to 1983. They report that companies with separate board chairpersons consistently outperformed those with role or CEO duality.

However, the results of Rechner and Dalton (1991) have been criticised on several grounds. Firstly, they focus purely on large American firms. Secondly, they rely purely on accounting-based performance measures. Thirdly, they fail to control for firm specific characteristics, such as firm size and industry (Donaldson and Davis, 1991, p.53). As result, using a sample of UK listed firms, Dahya *et al*. (1996) investigate whether the stock market prefers companies to combine or split the roles of company chairman and CEO. Consistent with the evidence of Rechner and Dalton (1991), their results suggest that the market responds favourably to the separation of the two roles and unfavourably to their fusion.

Of particular interest to this study, and using a sample of 84 South African listed firms, Ho and Williams (2003) report a statistically significant and negative link between a firm's physical and intellectual capital performance and role or CEO duality. This indicates that the role or CEO duality-financial performance nexus is also likely to be negative among South African listed firms. Similarly, in a sample of 347 Malaysian listed firms, Haniffa and Hudaib (2006) report that firms that separated the two roles performed financially (ROA) better than those that vested the two roles in one person. This indicates that monitoring by the board improves when the roles of CEO and chairman are split. Finally, Chahine and Tohmé (2009) investigate the relationship between role or CEO duality and initial underpricing using a sample of 127 initial price offerings (IPOs) firms' from 12 Middle East and North African countries[22]. They report that underpricing is significantly higher in firms that have role or CEO duality. This suggests the market perceives role or CEO duality as an undesirable development.

[22]These countries are: Bahrain, Egypt, Jordan, Kuwait, Lebanon, Morocco, Oman, Qatar, Saudi Arabia, Sudan, Tunisia, and the United Arab Emirates.

By contrast, a group of researchers report that role or CEO duality impacts positively on firm financial performance (e.g., Donaldson and Davis, 1991; Boyd, 1995; Kiel and Nicholson, 2003). Firstly, Donaldson and Davis (1991) examine the effects of role or CEO duality on shareholder returns in a sample of 321 US firms from 1985 to 1987. They report that companies with role or CEO duality have superior financial performance to those that separate the two roles. Unlike Rechner and Dalton (1991), they demonstrate that the tenor of their results remain unchanged after controlling for firm-specific features, such as firm size and industry.

Similarly, Boyd (1995) investigates the association between role or CEO duality and financial performance, as proxied by five year average returns on investment (ROI) in a sample of 192 American firms selected from 12 industries from 1980 to 1984. Consistent with the evidence of Donaldson and Davis (1991), he reports that firms with role or CEO duality consistently outperformed their counterparts with independent board leadership structure. This is consistent with the view that role or CEO duality enhances decision-making by permitting a sharper focus on company objectives. Finally, using a sample of 348 of Australia's largest publicly listed firms in 1996, Kiel and Nicholson (2003) investigate the role or CEO duality-performance relationship. They report that role or CEO duality impacts positively on the financial performance (Tobin's Q) of Australian listed firms.

A third stream of empirical papers suggests that role or CEO duality has no impact on financial performance. Using a small sample of 25 Canadian firms from 1976 to 2000, Bozec (2005) reports that role or CEO duality has no impact on return on sales, sales efficiency and assets turnover. Similarly, Haniffa and Hudaib (2006) report a statistically insignificant relationship between Tobin's Q and role duality in a sample of 347 Malaysian listed firms. This is consistent with the results of previous studies (e.g., Baliga *et al*., 1996; Brickley *et al*., 1997; Rhoades *et al*., 2001; Vafeas and Theodorou, 1998; Laing and Weir, 1999; Weir and Laing, 2000; Sanda *et al*., 2005), which suggest that role or CEO duality has no impact on financial performance. Of close relevance to this study, Mangena and Chamisa (2008) investigate the relationship between role or CEO duality and the suspension of listed firms by the JSE Ltd. Using a sample of 81 South African listed firms from 1999 to 2005, they find no significant link between role duality and incidences of listing suspension by the JSE.

iii) *Recommendations of King II and the JSE's Listings Rules*

King II and JSE Listings Rules state explicitly that the positions of the chairman and the CEO should not be held by the same individual. Also, it states that the chairman must be independent as defined in subsection 3.3.3.2 of chapter three by the Code, who bears the responsibility for the running of the board, while the CEO is responsible for the day-to-day running of the company's business. This suggests that King II recognises role or CEO duality as an undesirable development, while role separation is seen as good corporate governance practice.

However, the prior South African evidence is mixed. Ho and Williams (2003) report a statistically significant and negative role or CEO duality-performance link. In contrast, Mangena and Chamisa (2008) find no significant association between role or CEO duality and incidences of listings suspension by the JSE. Given the mixed evidence, both the null and alternate hypotheses are tested. Therefore, the respective third (3) null and alternate hypotheses to be tested in this study are that:

H_0 : There is a statistically significant negative relationship between role or CEO duality and firm financial performance, as proxied by both ROA and the Q-ratio.

H_1 : There is no statistically significant negative relationship between role or CEO duality and firm financial performance, as measured by both ROA and the Q-ratio.

4.2.2.5 ***Percentage of Non-Executive Directors (NEDs)***

i) *The Theoretical Link between the Percentage of NEDs and Financial Performance*

One of the internal corporate governance mechanisms that the theoretical literature suggests can be used in reducing agency and information asymmetry problems in modern corporations is the appointment of non-executive directors (NEDs) (e.g., Fama 1980; Lipton and Lorsch, 1992; Jensen, 1993). In this study, NEDs refer to the ratio of the number of non-executive directors to the total number of directors of a firm and expressed as a percentage. There are two theoretical views with regards to NEDs: those who are in favour of more NEDs on corporate boards and those who prefer more executive directors.

Those who support more NEDs on the board usually base their arguments on three theories: agency, resource independence, and information asymmetry & signalling.

Conventional agency theory suggests that boards dominated by executive directors (insiders) are less accountable (Fama, 1980, p.293; Sonnenfeld, 2002, p.108). In contrast, NEDs possess three main features. First, they bring independent judgment to board decisions (e.g., Cadbury Report, 1992; Chhaochharia and Grinstein, 2009). Second, they offer the firm resources in the form of experience, expertise, business contacts and reputation (Haniffa and Hudaib, 2006, p.1039; Baranchuk and Dybvig, 2009, p.715).

Third, the existence of competitive and efficient managerial labour markets both within and outside the firm ensures that NEDs perform their monitoring function effectively (Fama, 1980, pp.292-294; Fama and Jensen, 1983a, p.315). Fama (1980, p.293) and Fama and Jensen (1983a, p.313) argue that once top internal management gains control of the corporate board, they are more likely to connive and collude among themselves to expropriate shareholders' wealth. It also reduces healthy competition among managers for improved performance.

In line with the above view, Fama (1980, p.293) suggests that the possibility of such internal managerial connivance might be reduced, and the viability of the board as a market-induced mechanism for low-cost transfer of control might be enhanced, by the addition of NEDs. Jensen (1993, p.863) suggests that their independence help NEDs to avoid politeness and courtesy at the expense of truth, frankness, and constructive criticisms of executive management in the boardroom without fear of victimisation.

Finally, it has been argued that the appointment of independent NEDs helps in reducing information asymmetry by credibly signalling insiders' intent to treat outside or potential shareholders fairly, and by implication, the safety of their investment (Black *et al*., 2006a, p.184). It also signals to the market insiders' intent to rely on decision experts, as well as their appreciation of the importance of separating the decision-making and control functions (Fama and Jensen, 1983a, p.315). As a result, proponents of this view believe that a higher percentage of NEDs on corporate boards will improve financial performance.

However, relying on stewardship theory, opponents argue that corporate boards dominated by NEDs may impact negatively on performance (Baysinger and Hookisson, 1990, p.74; Weir and Laing, 2000, p.267; Bozec, 2005, p.1927). Weir and Laing (2000, p.267) contend that NEDs often command less knowledge about the business and find it too difficult to understand the complexities of the company. This problem is exacerbated by the fact that outside directors are usually part-timers who normally also sit on boards of other companies (Bozec, 2005, p.1927; Jiraporn *et al*., 2009, p.819). This leaves them with too little time to devote to their monitoring and advisory duties.

By contrast, high levels of executive directorships are associated with high access to information, which leads to high quality decision-making (Nicholson and Kiel, 2003, p.588). This can impact positively on financial performance. Crucially, outside directors would usually not have the same access to informal sources of information and knowledge within the firm. As a result, decisions made by a board dominated by NEDs would be of a lower quality, and this would in turn lead to low firm performance. Further, it has been 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, p.1039).

ii) *The Empirical Evidence on the Percentage of NEDs and Financial Performance*

Consistent with the conflicting nature of the theoretical literature on NEDs, prior empirical evidence regarding the relationship between the percentage of NEDs and firm financial performance is mixed. A strand of the empirical literature reports that boards dominated by NEDs deliver higher performance. Using a sample of 311 UK listed firms from 1994 to 1996, Weir *et al*. (2002) report a positive relationship between the percentage of NEDs and performance (Tobin's Q). Gupta and Fields (2009) examine a US sample of 744 independent NED resignations from 1990 to 2003 to ascertain the value that the market places on board independence. They report that, on average, the announcement of independent NED resignations result in 1.22% loss in a firm's market value. This suggests that investors value board independence as independent boards are associated with greater monitoring of managerial behaviour.

Of close importance to this study, Ho and Williams (2003) find a statistically significant and positive link between the percentage of outside directors and a firm's physical and intellectual capital performance in 84 South African listed firms in 1998. Consistent with the evidence of Ho and Williams (2003), Mangena and Chamisa (2008) report a negative association between the percentage of NEDs and the incidences of firm suspensions from the JSE in a sample of 81 firms from 1999 to 2005. This suggests that South African listed firms with a higher percentage of NEDs are less likely to be suspended from the stock exchange. Recently, El Mhendi (2007) and Mangena and Tauringana (2008) report evidence, which is entirely consistent with prior research that boards dominated by NEDs perform better for a sample of Tunisian and Zimbabwean listed firms, respectively.

By contrast, a group of researchers reports that the percentage of NEDs is negatively correlated with performance (e.g., Yermack, 1996; Agrawal and Knoeber, 1996; Laing and

Weir, 1999; Bozec, 2005). In a sample of 25 Canadian firms from 1976 to 2005, Bozec (2005) finds that the relationship between the percentage of NEDs and performance is negative. Similarly, Sanda *et al*. (2005) report that Nigerian firms with a low percentage of outside directors performed better than those with more NEDs. This suggests that whilst NEDs can bring independence, objectivity and experience to bear upon board decisions, the may also stifle managerial initiative through excessive monitoring.

A third stream of empirical papers (e.g., Vefeas and Theodorou 1998; Weir and Laing, 2000; Haniffa and Hudaib, 2006), indicates that the presence of NEDs has no impact on performance. For example, Hermalin and Weisbach (1991) report no link between board composition and performance for a sample of 142 US listed firms. UK studies by Vafeas and Theodorou (1998) and Weir and Laing (2000) find that the wealth effects of outside directors are statistically insignificant. Further, Haniffa and Hudaib (2006) report a statistically insignificant relationship between the percentage of NEDs and performance for a sample of 347 Malaysian listed firms.

iii) *Recommendations of South African Companies Act, King II and the JSE's Listings Rules*

Section 269A of the South African Companies Act 1973 requires every public company to appoint at least two independent NEDs. 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 requires that the majority of the NEDs be independent of management to ensure that minority interests are adequately protected. This suggests that King II expects firms with more NEDs on their boards to perform financially better than those with less NEDs.

As has been discussed above, the past South African evidence also indicates that a greater percentage of NEDs on corporate boards may be associated with higher financial performance. Ho and Williams (2003) find a statistically significant and positive association between the percentage of NEDs and intellectual capital performance. Mangena and Chamisa (2008) report that the incidence of listing suspensions from the JSE significantly reduces with an increase in the number of NEDs. However, given the mixed international evidence, both the null and alternate hypotheses are tested. Therefore, the fourth (4) respective null and alternate hypotheses to be tested in this study are that:

H_0 : There is a statistically significant positive relationship between the percentage of NEDs and firm financial performance, as measured by both ROA and the Q-ratio.

H_1 : There is no statistically significant positive relationship between the percentage of NEDs and firm financial performance, as proxied by both ROA and the Q-ratio.

4.2.2.6 ***Frequency of Board Meetings (FBMs)***

i) *The Theoretical Link between the Frequency of Board Meetings and Performance*

The association between the frequency of board meetings and firm financial performance is another internal corporate governance issue that gives rise to concern for 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 (e.g., Lipton and Lorsch, 1992; Jensen, 1993).

One theoretical proposition is that the frequency of board meetings measures the intensity of a board's activities, and the quality or effectiveness of its monitoring (Vefeas, 1999a, p.116; Conger *et al*., 1998, p.142). All else equal, a higher frequency of board meetings will result in a higher quality of managerial monitoring, which can impact positively on financial performance. It has been contended that regular meetings allow directors more time to confer, set strategy, and to appraise managerial performance (Vafeas 1999a, p.118). It can help directors to remain informed and knowledgeable about important developments within the firm. This will place the directors in a better position to timely address emerging critical problems (Mangena and Tauringana, 2006, p.12). In fact, Sonnenfeld (2002, p.107) suggests that regular meeting attendance is considered a hallmark of the conscientious director. Also, frequent meetings intermingled with informal sideline interactions can create and strengthen cohesive bonds among directors (Lipton and Lorsch, 1992, p.69).

An opposing theoretical view is that board meetings are not necessarily beneficial to shareholders. Firstly, Vefeas (1999a, p.114) argues that normally the limited time directors spend together is not used for the meaningful exchange of ideas among themselves. Instead, routine tasks, such as presentation of management reports and various formalities absorb much of the meetings. This reduces the amount of time that outside directors would have to effectively monitor management (Lipton and Lorsch, 1992, p.64). Secondly, board meetings are costly in the form of managerial time, travel expenses, refreshments and directors' meeting fees (Vafeas 1999a, p.118).

In fact, Jensen (1993, p.866) contends that boards in well-functioning companies should be relatively inactive and exhibit little conflicts. He suggests that rather than

necessarily organising frequent board meetings, it will be more profitable for corporate boards to establish a system that is responsive to their specific challenges. For example, directors can increase the frequency of meetings during crisis or when shareholders' interests are visibly in danger, such as when replacing the CEO or fighting hostile takeovers. Consistent with Jensen's (1993) suggestions, Vafeas (1999a, p.118) argues that companies that are efficient in setting the right frequency of board meetings, depending on its operating context, will enjoy economies of scale in agency costs.

ii) *The Empirical Evidence on the Frequency of Board Meetings and Performance*

Firstly, there is limited evidence on the relationship between the frequency of board meetings and firm financial performance. Secondly, the limited evidence is also conflicting, which makes the frequency of board meetings-financial performance assciation a ripe area for further research.

For 307 US listed firms over the 1990-1994 period, Vafeas (1999a) reports a statistically significant and negative association between the frequency of board meetings and financial performance, as proxied by Tobin's Q. By contrast, he finds that operating performance significantly improves following a year of abnormal board activity. This suggests that while directors who confer more regularly can make better decisions and engage in active monitoring, the potential benefits of such intense monitoring are expected to reflect in future years' performance. That is, board decisions may have gestation period within which their full benefits may be realised. This may also suggests the presence of endogeneity problems in the association between the frequency of board meetings and firm financial performance. For example, it is possible for firm financial performance to improve, following increased frequency of board meetings, but such increased board activity might have been triggered by poor firm financial performance. As will be indicated below, section 5.3 of chapter five and the whole of chapter nine will address potential endogeneity problems in this research.

Similarly, using a sample of 258 of the *Fortune* 1000 companies, Carcello *et al*. (2002) establish a positive relationship between the amount of audit fees paid and the frequency of audit committee meetings. This means that audit committees that meet more frequently pay higher audit fees, which reduces financial performance[23]. Recently, Fich and Shivdasani (2006)

[23]It is also possible for a firm to incur higher auditing costs as a result of increased monitoring of management by the audit committee. This can potentially introduce endogenity problems into the frequency of board meetings-performance nexus. As has been indicated above, subsection 5.3 of chapter five and chapter nine will discuss how issues of endogenity have been addressed in this study.

offer evidence, which is in line with the results of prior research that boards that meet more frequently are valued less by the market in a sample of 508 US listed firms from 1989 to 1995.

On the contrary, using a sample of 275 US listed firms from 1995 to 2000, Karamanou and Vafeas (2005) find a positive association between board meeting frequency and the accuracy of management earnings forecasts. Also, Mangena and Tauringana (2006) report a positive relationship between the frequency of board meetings and firm performance for a sample of 157 Zimbabwean listed firms over the period 2001-2003. Their results support the proposition that monitoring becomes more intense in periods of crisis, and companies whose board meet more frequently perform better. In contrast, El Mehdi (2007) finds that the frequency of board meetings has no association with economic performance in a small sample of 24 Tunisian listed firms from 2000 to 2005. He suggests that financial performance, which is tied most closely to the quality of the day-to-day management of the company, is likely to be less affected by the frequency of board meetings.

iii) *Recommendations of King II and the JSE's Listings Rules*

King II and the JSE's Listings Rules task South African listed firms to establish a policy for the frequency, purpose, conduct and duration of their boards of directors and board subcommittees' meetings. Specifically, King II recommends that all corporate boards should meet regularly, at least once a quarter, which must be disclosed in their annual reports. This implies that King II expects a higher frequency of board meetings to impact positively on firm financial performance. However, given the conflicting international empirical evidence, both the null and alternate hypotheses are tested. Hence, the respective fifth (5) null and alternate hypotheses to be tested in this study are that:

H_0: There is a statistically significant positive relationship between the frequency of board meetings and firm financial performance, as measured by both ROA and the Q-ratio.

H_1: There is no statistically significant positive relationship between the frequency of board meetings and firm financial performance, as proxied by both ROA and the Q-ratio.

4.2.2.7 ***Presence of Key Internal Board Committees***

i) *The Theoretical Link between Board Committees and Financial Performance*

Prior literature suggests that board committees help improve the effectiveness and efficiency of corporate boards (Jiraporn *et al*., 2009, p.820). According to Harrison (1987, p.109) there are two generic types of board committees: monitoring or oversight and management supporting or operating. *Operating* board committees advise management and the board on major business decision. Their *monitoring* counterparts are intended to protect shareholder interests by providing objective, independent review of corporate executives and affairs. Agency theory suggests that a central monitoring function of the board is to ensure that corporate activities are properly audited, (e.g., Jensen and Meckling, 1976; Fama and Jensen 1983a). It also includes ensuring that directors and senior management are adequately remunerated, and to nominate qualified individuals for appointment to fill director and top management positions (e.g., Chhaochharia and Grinstein, 2009; Jiraporn *et al*., 2009).

As a corollary, there has been a dramatic increase in the use of monitoring board committees over the last three decades (Harrison, 1987, p.109). 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 (see Cadbury Report, 1992; UK Combined Code, 1998, 2006; King Reports, 1994, 2002; and Sarbanes-Oxley Act, 2002, amongst others).

Despite their increasing popularity, however, there are still conflicting theoretical propositions as to the nexus between monitoring board committees and financial performance. One line of the theoretical literature suggests that the establishment of these committees can impact positively on performance (e.g., Harrison, 1987; Wild, 1994; Sun and Cahan, 2009). Firstly, unlike the main board or operating committees (e.g., finance/executive), monitoring board committees[24] are usually entirely composed of independent NEDs, making them better placed to protect shareholders' interests by effectively scrutinising managerial actions (e.g., Klein, 1998; Vefeas, 1999b).

Secondly, by their relative small size, board committees are able to meet more frequently. This provides sufficient time for meaningful dialogue and in reaching consensus

[24]As has been discussed in chapter three, King II recommends, for example, that the remuneration committee should be formed entirely by independent NEDs. Audit and nomination committees should be constituted by a majority of independent non-executive directors. All three board committees must also be chaired by independent NEDs.

decisions quicker (Karamanou and Vefeas, 2005, p.458). Thirdly, by their composition[25], board committees help in bringing individual director's specialist knowledge and expertise to bear on the board decision-making process (Harrison, 1987, p.111). This also allows the main board to devote attention to specific areas of strategic interests and responsibility.

Finally, board committees enhance corporate accountability, legitimacy and credibility by performing specialist functions (Weir *et al*., 2002, p.585). The principal function of the *audit committee*, for example, is to meet regularly with the firm's external and internal auditors to review the company's financial statements, audit process and internal accounting controls. This helps reduce agency costs and information asymmetry by facilitating timely release of unbiased accounting information by managers to shareholders (Klein, 1998, p.279). Also, effective monitoring by the audit committee may help minimise financial fraud and increase firm value.

The *remuneration committee* determines and reviews the nature and amount of all compensation for directors and senior officers of the firm. This also helps in reducing the agency problem by constructing and implementing remuneration schemes and incentives designed to better align the interests of managers and shareholders (Klein, 1998, p.279; Weir and Laing, 2000, p.268). The *nomination committee* is responsible for nominating candidates for appointment to the board. This minimises the agency conflict by improving board independence and the quality of appointed directors (Vefeas and Theodorou, 1998, p.390; Vefeas, 1999b, p.199).

By contrast, others suggest board committees can impact negatively on performance. Firstly, the establishment of board committees imposes extra costs in terms of managerial time, travel expenses and additional remuneration for the members of the committees (Vefeas, 1999a, p.118). Secondly, it can result in excessive managerial supervision, which can inhibit executive initiative and vision (e.g., Goodstein, *et al*., 1994; Conger *et al*., 1998; Vefeas, 1999a and b). Thirdly, it may also result in duplicating corporate board duties and responsibilities. This will have additional costs implications for firms. Finally, by creating generalists and specialists among board members, board committees have the potential of generating conflicts in ideas and impairing boardroom cohesion.

[25]Unlike the main board, directors with specialist knowledge and expertise normally constitute board committees. King II suggests, for example, that a majority of the audit committee members must be financially literate and preferably with practical financial management experience.

ii) *The Empirical Literature on Board Committees and Financial Performance*

The empirical literature regarding the association between the presence of board committees and financial performance is still at its embryonic stage (Dalton *et al.*, 1998; Laing and Weir, 1999, p.460). The little available evidence also largely focuses on developed markets, such as the UK and the US. This makes generalisation difficult. Further, the limited evidence also offers contradictory results. This makes board committee structures a fertile area for further research, especially within a developing country context. It may help shed additional insights on the board committees-performance relationship. The results can also be compared with previous international studies on board committees.

In line with the theoretical literature, a strand of the empirical literature suggests a positive board committees-performance relationship (e.g., Wild, 1994; Chhaochharia and Grinstein, 2009; Sun and Cahan, 2009). Wild (1994) examines market reaction before and after the establishment of audit committees by a sample of 260 US firms from 1966 to 1980. He reports a statistically significant improvement in share returns following the establishment of audit committees, which suggests that the presence of audit committees can enhance managerial accountability to shareholders. Recent evidence by Vefeas and Karamanous (2005) in 275 *Fortune* 500 firms is consistent with prior research that the presence of audit committees is positively associated with firm financial performance.

Using a sample of 606 large US listed firms, Vefeas (1999b) documents a positive relationship between the establishment of nomination committees and the quality of new director appointments[26]. This implies that nomination committees can improve board quality, which may ultimately improve the effectiveness with which the board carries out its monitoring and advisory roles. In separate studies, but using samples of US listed firms, Chhaochharia and Grinstein (2009) and Sun and Cahan (2009) report a significant decrease in CEO compensation for US firms with independent compensation committees compared with those without compensation committees. This suggests that the establishment of independent compensation committees is associated with better monitoring of managerial compensation.

Of special interest to this study, Mangena and Chamisa (2008) find in a sample of 81 South African listed firms that the presence of an audit committee significantly reduces the possibility of a firm being suspended from the stock exchange. This indicates that the presence

[26]According to Vefeas (1999a), the quality of a director is defined by his or her independence from the appointing body. In this case, an independent non-executive director as has been defined in chapter three by King II, for example, is considered to be of a higher quality in comparison to a non-executive director.

of audit committees improve internal monitoring, reduce internal fraud and enhance compliance with corporate regulations.

By contrast, others have offered evidence, which shows that the presence of board committees impact negatively on performance (e.g., Main and Johnston, 1993; Vefeas, 1999a). In a sample of 220 large British listed firms, Main and Johnston (1993) examine the role of remuneration committees in British boardrooms. They report that the presence of a remuneration committee is associated with higher executive pay, which reduces shareholder value. Similarly, using 307 US listed firms from 1990 to1994, Vefeas (1999a) reports a negative relationship between the establishment of board committees (namely, audit, remuneration, and nomination) and firm value.

A third stream of papers suggest no empirical relationship between board committees and performance (e.g., Klein, 1998; Vefeas and Theodorou, 1998; Laing and Weir, 1999). Using a sample of 486 US firms over the period 1992-1993, Klein (1998) examines the association between the presence of audit, compensation, and nomination committees and financial performance, but finds no statistically significant relationship. Further, she demonstrates that her result is robust irrespective of the changes in the composition of the committees' membership. Vafeas and Theodorou (1998) investigate the impact of audit, remuneration and nomination committees on the performance of 250 UK listed firms in 1994. They find no evidence in favour of the idea that the existence of the three board committees significantly affected firm financial performance. Recently, Weir and Laing (2000), Weir *et al*. (2002), Dulewicz and Herbert (2004), and Bozec (2005) provide evidence, which shows that the establishment of the three board committees has no significant impact on financial performance.

iii) *Recommendations of the Companies Act, King II and the JSE's Listings Requirements*

Section 269A of the South African Companies Act 1973 requires every public company to establish an audit committee, which must consist of at least two independent NEDs. 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 *independent* NED. They must also be composed either entirely of independent NEDs (in the case of the remuneration committee) or by a majority of independent NEDs (in the case of audit and nomination committees). Further, the audit committee members must be financially literate and should be chaired by a person other than

the chairman of the board. This suggests that King II expects that the establishment of board committees may directly or indirectly impact positively on firm financial performance.

As has been discussed above, Mangena and Chamisa (2008) report that South African listed firms with audit committees are less likely to be suspended from the JSE than those without audit committees. This suggests that the presence of audit committees can improve managerial monitoring. This can also impact positively on firm financial performance. However, given the mixed board committees-performance evidence, both the null and alternate hypotheses are tested. Therefore, the respective sixth (6) null and alternate hypotheses to be tested in this study are that:

H_0 : There is a statistically significant positive relationship between the presence of audit, remuneration and nomination committees and firm financial performance, as proxied by both ROA and the Q-ratio.

H_1 : There is no statistically significant positive relationship between the presence of audit, remuneration and nomination committees and firm financial performance, as measured by both ROA and the Q-ratio.

4.2.2.8 ***Director Shareownership***

iii) *The Theoretical Link between Director Shareownership and Financial Performance*

Director ownership of shares is another important internal corporate governance mechanism that has been proposed as a possible solution to the agency problem. There are two contrasting theoretical propositions: convergence-of-interests and entrenchment.

Agency theory suggests that director shareownership helps in reducing the conflicts of interest that exist between shareholders and managers (e.g., Jensen and Meckling, 1976; Fama, 1980; Jensen, 1993). This *convergence-of-interests* model maintains that as the proportion of equity owned by directors increases, their interests and those of shareholders become more aligned and the incentive to indulge in opportunistic behaviour diminishes. This is because the greater their financial stake in the form of shareownership, the greater the costs they will incur for not maximising shareholders wealth. Consequently, directors who own large blocks of shares have additional incentive to actively monitor managerial actions that can help reduce agency costs and increase firm financial performance.

However, another strand of the theoretical literature suggests director *entrenchment* as an alternative hypothesis to *convergence-of-interests* (e.g., Morck *et al*., 1988; McConnell and

Servaes, 1990; Short and Keasey, 1999). The entrenchment hypothesis proposes that at low levels of director shareownership, the competitive internal and external market forces (discipline) can help align the interests of directors with those of shareholders. However, it contends that at high levels of shareholding, directors may hold sufficient voting power to protect themselves against such disciplinary forces, and as such directors will prefer to pursue non-wealth maximising goals. This is because the private benefits in the form of perquisites consumption, such as guaranteed employment with an attractive salary that will accrue to directors are greater than the utility that they will obtain from pursuing optimal projects that will increase the wealth of all shareholders. This results in director entrenchment in which other shareholders are unable to remove or influence the actions of the managing directors, even in the face of serious under performance or misbehaviour. In this case, the director shareownership-performance relationship is expected to be negative.

Further, the theoretical literature suggests that combining the *convergence-of-interests* hypothesis with the *entrenchmen*t hypothesis gives rise to a non-linear director shareownership-performance relationship (e.g., Morck *et al*., 1988; McConnell and Servaes, 1990). This means that at low levels of director shareownership, interests' alignment may help increase firm financial performance. However, at high levels of director shareownership, director entrenchment impedes beneficial takeovers, and thus decreases firm value.

ii) *The Empirical Literature on Director Shareownership and Financial Performance*

Consistent with the conflicting nature of the theoretical literature, the empirical evidence on director shareownership-performance relationship is mixed. Specifically, a group of researchers reports positive relationship, another documents negative association, while a third group finds a non-linear relationship between director shareownership and financial performance.

Morck *et al*. (1988) investigate the relationship between director shareownership and firm value, as proxied by Tobin's Q using a cross-sectional sample of 371 *Fortune* 500 US firms in 1980. They report a non-monotonic relationship between director shareownership and firm value. This suggests market value of firms' first increases, then declines, and finally increases slightly, as ownership by directors increases. Specifically, Morck *et al*. (1988) document a statistically significant and positive director ownership-performance link at lower levels (0% to 5% - *interests convergence*), a statistically significant and negative relationship

at moderate levels (5% to 25% - *entrenchment*), and additionally a statistically significant and positive association at higher levels (above 25% - *interests convergence*) of director ownership.

Their evidence suggests that at low levels of director ownership, interests alignment help increase firm value, while at high levels, director entrenchment negatively affects financial performance. Recent US and UK studies by McConnell and Servaes (1990), Hermalin and Weisbach (1991), Short and Keasey (1999), Weir and Laing (2000), and Davies *et al*. (2005) have supported the non-monotonic director shareownership-performance relationship.

By contrast, using a sample of 49 listed Zimbabwean firms in 1994, Owusu-Ansah (1998) report that director shareownership impacts positively on mandatory disclosure. Consistent with the evidence of Owusu-Ansah (1998), Mangena and Tauringana (2008) document a positive association between director shareownership and financial performance, as measured by Tobin's Q and ROA in a sample of 72 Zimbabwean listed firms over the period 2002-2004. This suggests that the market perceives director shareownership serving as an extra incentive to enhance shareholder value. The results of recent studies by Krivogorsky (2006), and Kapopoulos and Lazaretou (2007) have supported the positive relationship for a sample of 87 European and 175 Greek listed firms, respectively.

In contrast, but of particular importance to this study, Ho and Williams (2003) find that director ownership is negatively related to a firm's physical and intellectual capital performance in a sample of 84 South African listed firms. This implies that the director shareownership-financial performance relationship can also be expected to be negative for South African listed firms. Sanda *et al*. (2005) report an inverse relationship between director shareownership and a raft of financial performance measures, including ROA, ROE, Tobin's Q and P/E ratio in a sample of 93 Nigerian listed firms from 1996 to 1999. The negative relationship between director shareownership and financial performance has also been supported by the findings of Haniffa and Hudaib (2006) in a sample of 347 Malaysian listed firms over the period 1996-2000.

A fourth stream of empirical papers documents no relationship between director shareownership and performance. For example, Demsetz and Lehn (1985) report no cross-sectional relationship between accounting rates of return and insider shareholding for 511 US listed firms from 1984 to 1989. Re-examining previous US evidence using a sample of 600 listed firms from 1984 to 1992, Himmelberg *et al*. (1999) report a spurious correlation between director shareownership and Tobin's Q. They find that a large fraction of the cross-

sectional variation in managerial ownership is explained by firm-level characteristics like size, cash flow, capital, and advertising intensity, amongst others. They suggest that director shareownership is rather endogenous in performance regressions, casting serious doubts on prior US evidence that indicates that managerial ownership is exogenously related to performance.

Similarly, and of close relevance to this study, Mangena and Chamisa (2008) report a positive, but statistically insignificant relationship between director shareownership and the incidences of listing suspension from the South African stock exchange in a sample of 81 South African listed firms. This suggests that director ownership has no impact on the likelihood that a firm will be suspended from the JSE. In separate studies, Vefeas and Theodorou (1998) and El Mehdi (2007) provide evidence which is consistent with the view that director shareownership has no impact on firm financial performance in samples of 250 UK and 24 Tunisian listed firms, respectively.

iii) *Recommendations of the Companies Act, King II and the JSE's Listings Rules*

The South African Companies Act 1973 requires every director to hold a symbolic *one* share of the company for which he or she is a director. King II and the JSE's Listings Rules do not set any ownership requirements for directors. However, King II suggests that the performance-related elements of directors' remuneration, such as stock options should constitute a substantial portion of their total remuneration package in order to align their interests with those of shareholders. It should also be designed to provide incentives to directors to perform at the highest operational levels. This indicates that King II expects director shareownership to have a positive impact on firm financial performance.

However, and as has been discussed above, prior South African studies report mixed results. Ho and Williams (2003) find a statistically significant and negative link between director ownership and a firm's physical and intellectual capital performance. By contrast, Mangena and Chamisa (2008) report a positive, but statistically insignificant relationship between director shareownership and the incidences of listing suspensions on the JSE. Given the mixed prior evidence, both the null and alternate hypotheses are tested. Hence, the respective seventh (7) null and alternate hypotheses[27] to be tested in this study are as follows:

[27]As will be discussed in chapters seven and eight, to replicate the results of Morck *et al*. (1988) and McConnell and Servaes (1990), director shareownership will be squared and cubed to test for the existence of non-linear director shareownership-performance relationships.

H_0 : There is a statistically significant positive relationship between director shareownership and firm financial performance, as proxied by both ROA and the Q-ratio.

H_1 : There is no statistically significant positive relationship between director shareownership and firm financial performance, as measured by both ROA and the Q-ratio.

4.2.3 **Internal Corporate Governance Structures and Firm Financial Performance: The Compliance-Index Model**

In a significant departure from the *equilibrium-variable* model that has been discussed above, a different line of corporate governance-financial performance research has recently emerged. This new line of corporate governance research contends that a company's financial performance is likely to be influenced by a number of agency mechanisms with potential interactive effects in an integrated framework rather than as independent structures (e.g., Shabbir and Padget, 2005; Beiner *at al*., 2006). As a consequence, instead of looking at one single corporate governance mechanism in isolation, this model recommends the construction of a *compliance or composite* corporate governance index, encapsulating a comprehensive set of corporate governance provisions to investigate the corporate governance-performance nexus.

This subsection will discuss the limited empirical evidence in this new line of corporate governance research that focuses on both developed and emerging markets. Also, while the limited African studies focus on corporate governance and disclosure, they will be briefly discussed for their contextual and methodological relevance.

4.2.3.1 ***Compliance Governance Indices, Financial Performance, and Developed Markets***

Gompers *et al*. (2003) are among the pioneers to investigate the corporate governance-financial performance link using a compliance or composite corporate governance index. Specifically, Gompers *et al*. examine how shareholder rights vary across firms and their impact on financial performance. Using the incidence of 24[28] corporate governance rules, they

[28]They divided the 24 corporate governance rules into four main subgroups: delay, protection, voting, and other. The *delay* subgroup is made up of blank check, classified board, special meeting, and written consent. The *protection* subgroup consists of compensation plans, contracts, golden parachutes, indemnification, liability, and severance. The *voting* subgroup comprises of bylaws, charter, cumulative voting, secret ballot, supermajority, and unequal voting. The *other* subgroup includes antigreenmail, directors' duties, fair price, pension parachutes, poison pill, and silver parachute. They constructed a non-compliance corporate governance index. That is, for

construct a non-compliance composite index to proxy for the level of shareholder rights for 1,500 large US listed firms over the period 1990-1998. They report that an investment strategy that buys firms in the lowest decile of the index (strongest rights) and sells firms in the highest decile of the index (weakest rights) can earn a statistically significant abnormal returns of 8.5 percent per year during the sample period. They also find that firms with stronger shareholder rights have higher firm value, as measured by Tobin's Q and higher accounting profits. Further, they report that firms with stronger shareholder rights also have higher sales growth, lower capital expenditures, and make fewer corporate acquisitions.

Using Gompers *et al*.'s non-compliance corporate governance index, Cremers and Nair (2005) provide evidence which is in line with the results of Gompers *et al*. that US firms with better corporate governance generate superior share returns and are valued higher by the market. Similarly, Bebchuk *et al*. (2009) investigate the relative importance of the 24 corporate governance provisions followed by Gompers *et al*. (2003) by extending the data from 1990 to 2003. They report that increases in their non-compliance corporate governance index level are associated with economically significant reductions in firm value, as measured by Tobin's Q, as well as large negative abnormal stock returns. Recent US and cross-country studies by Gillan *et al*. (2003), Larcker *et al*. (2005), Aggarwal *et al*. (2007), Bruno and Claessens (2007), and Chhaochharia and Grinstein (2007) have provided further empirical support for the results of Gompers *et al*. (2003) and Cremers and Nair (2005).

By contrast, Core *et al*. (2006), and Bhagat and Bolton (2008) have cast serious doubts on the validity of prior US evidence that establishes a positive link between better composite corporate governance indices and financial performance. Core *et al*. (2006) extends Gompers *et al*.'s (2003) corporate governance index to 1999 to re-examine the finding that firms with weak shareholder rights exhibit significant stock market underperformance. After controlling for takeover activity, their results reject the hypothesis that weak corporate governance causes poor stock returns. Consistent with Core *et al*. and after taking into account the potential endogenous link between corporate governance and performance, Bhagat and Bolton (2008) find no significant correlation between Gompers *et al*.'s (2003) composite corporate governance index and market performance.

In the UK and the larger continental Europe, due to limited availability of sufficient data, very little research has been done that examines the relationship between a compliance or

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every firm they award one point for the presence of any of these 24 corporate governance provisions that restricts shareholder rights, zero otherwise.

composite corporate governance index and financial performance. Baur *at al*. (2004), Drobetz *at al*. (2004), Shabbir and Padget (2005), Beiner *et al*. (2006), and Arcot and Bruno (2007) are rare exceptions. Shabbir and Padget (2005) use 12[29] corporate governance provisions from the 1998 UK Combined Code to develop a non-compliance corporate governance index for a sample of 122 FTSE 350 firms over the period 2000-2003 to investigate the corporate governance-performance relationship. Consistent with the US evidence, they report that their non-compliance corporate governance index is inversely related to total shareholder return, (TSR), return on assets (ROA), and return on equity (ROE). This implies that more compliant UK listed firms enjoy higher TSR, ROA and ROE over the sample period.

Beiner *et al*. (2006) construct a compliance composite corporate governance index based on 38 provisions from the Swiss Code of Best Practice in a 2002 cross-sectional sample of 109 Swiss listed firms to examine the corporate governance-performance link. They divided 38 corporate governance provisions into five main subgroups. These are: corporate governance commitment, shareholders' rights, transparency, board of directors and executive management, and reporting and auditing. In constructing their compliance composite corporate governance index, every firm is awarded a point for the presence of any of the 38 good corporate governance practices, zero otherwise. Consistent with Shabbir and Padget, they find a positive relationship between the quality of corporate governance and firm value, as measured by Tobin's Q.

Arcot and Bruno (2007) also use 8[30] corporate governance provisions from the 1998 UK Combined Code to construct a non-compliance composite corporate governance index for a larger sample of 245 UK listed firms from 1998 to 2003 to examine the link between corporate governance and financial performance. In contrast to Shabbir and Padget, they report that adherence to best practice does not always lead to superior financial performance, as measured by ROA.

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[29]The 12 corporate governance provisions include independent NED chairperson, a senior independent NED other than the chair, one third of the board members are NEDs, majority of the NEDs are independent, the board has audit, nomination, and remuneration committees, each board committee is chaired by an independent NED, the remuneration committee is composed entirely of independent NEDs, the audit committee is composed of NEDs only with a majority independent NEDs, and the nomination committee is chaired by an independent NED. Similar to Gompers *et al* (2003), they construct a non-compliance corporate governance index, in which the presence of any of the 12 provisions is awarded a value of one, zero otherwise.

[30] The 8 corporate governance provisions they examined include separation of chairperson and CEO, identification of a senior NED, the number of NEDs, the proportion of independent NEDs, director service contracts' notice period, audit, nomination, and remuneration committees. Each of the eight corporate governance provisions was binary scored. That is, the presence of any of the eight provisions was awarded a value of one, zero otherwise.

4.2.3.2 ***Compliance Governance Indices, Financial Performance, and Emerging Markets***

In contrast to the mixed findings observed in developed markets, there is more consistent evidence of a positive and statistically significant relationship between compliance or composite corporate governance indices and firm financial performance in emerging markets. Black (2001) is among the first to examine the correlation between the level of a compliance or composite governance index and financial performance in an emerging market context. Using a corporate governance ranking developed by a Russian Investment Bank for 21 Russian listed firms in 1999, he finds a strong and statistically significant positive correlation between good corporate governance and firm value.

Henry (2008) uses eight[31] corporate governance provisions from the 2003 Australian Stock Exchange corporate governance rules to construct a compliance composite corporate governance index for a sample of 116 Australian listed firms from 1992 to 2002 to examine the corporate governance-performance link. Consistent with the results of Black (2001), he reports a statistically significant and positive link between the constructed good composite corporate governance index and firm value, as measured by Tobin's Q. Recent studies by Baek *et al*. (2004), Black *et al*. (2006a and b), Cheung *et al*. (2007), Cui *et al*. (2008), and Garay and González (2008) for South Korea, Russia, Taiwan, Hong Kong, Australia and Venezuela, respectively, have corroborated the results of prior emerging markets research that better-governed firms tend to be associated with higher financial performance than their poorly-governed counterparts.

As has been explained in section 1.2 of chapter one, of close interest to this study, however, are four major cross-country studies conducted by Klapper and Love (2004), Durnev and Kim (2005), Chen *et al*. (2009) and Morey *et al*. (2009) in emerging markets. Klapper and Love (2004) use subjective analysts' corporate governance rankings constructed by Credit Lyonnais Securities Asia (CLSA)[32] for a cross-sectional sample of 374 companies in 14 emerging countries, including South Africa in 2000 to investigate the link between firm-level

[31]The 8 corporate governance provisions are: board dependence, CEO-chairperson duality, board size, board remuneration, options issued to executive directors, the existence of audit, nomination, and remuneration committees. Each of the eight corporate governance provisions was binary scored. That is, the presence of any of the eight provisions was awarded a value of one, zero otherwise.

[32]The CLSA corporate governance index that Klapper and Love used is based on a questionnaire of 57 qualitative corporate governance provisions or questions. The provisions are divided into seven broad subcategories. These are: *management discipline* with 9 provisions, *transparency* with 14 questions, *independence* with 12 provisions, *accountability* with 6 provisions, *responsibility* with 5 questions, *fairness* with 7 provisions, and *social awareness* with 4 questions. The questionnaire was completed by CLSA analysts in each of the 25 emerging countries for the 495 companies covered. CLSA asked its analysts to award a binary number of one for the presence of each of the 57 provisions, zero otherwise. Each firm's total score is then expressed as a percentage of the possible 57.

corporate governance and financial performance. They report that the sampled firms' quality of corporate governance is positively correlated with better operating performance, as proxied by ROA, and market valuation, as measured by Tobin's Q. Further, the positive relationship is stronger in countries with weaker legal environments. This suggests that corporate governance matters more in countries with poor legal regimes and weaker investor protection.

Similarly, using a combined corporate governance rankings developed by CLSA and S&P[33] for a larger cross-sectional sample of 1,067 firms from 27 countries, including South Africa, Durnev and Kim (2005) report that firms with better corporate governance structures receive higher market valuation, as measured by Tobin's Q. Similarly, they also report that the corporate governance-performance relationship is more pronounced in countries with poor legal standards. Chen *et al*. (2009) have also used the same CLSA 2000 subjective analysts' governance rankings used by Klapper and Love (2004) and Durnev and Kim (2005) to examine the nexus between corporate governance and the cost of equity capital. They report a statistically significant and negative relationship between the quality of a firm's corporate governance and its cost of equity capital.

Finally, Morey *et al*. (2009) investigate the corporate governance-performance link using the AllianceBerstein composite index[34] for 200 firms from 21 emerging markets, including South Africa from 2001 to 2006. Consistent with the results of Klapper and Love (2004) and Durnev and Kim (2005), they report that there is generally a positive and significant relationship between corporate governance and firm valuation, as measured by Tobin's Q and the price per share to book value per share ratio.

Arguably, and as has been discussed in section 1.2 of chapter one, all four prior studies seem to suffer from several limitations. Firstly, a major problem with all cross-country studies is that they appear to suffer from sample selection bias. This is because all four studies use sample firms rated by analysts. However, and as will be discussed in detail in chapter five, prior literature suggests that analysts corporate governance ratings tend to be biased towards

[33]The combined CLSA/S&P corporate governance rankings used by Durnev and Kim are based on the same 57 provisions and seven broad subcategories used by Klapper and Love (2004). The questions were also filled in by analysts by awarding a binary number of one if any of the 57 provisions is present, zero otherwise. The main difference between the two studies is that Durnev and Kim (2005) examine a larger number of countries (27) and companies (1,027).

[34]AllianceBernstein corporate governance index used by Morey *et al*. is based on a questionnaire of 60 corporate governance questions. The questions are divided into seven subcategories. These are: *information disclosure* with 8 questions, *management access and fair disclosure* with 5 questions, *representation of data* with 10, *value creation* with 9 questions, *board and shareholder structure* with 12 questions, *capital management* with 7 questions, and *social responsibility* with 9 questions. The questions were answered by analysts by awarding a value of 5 for the presence of any of the 60 corporate governance questions, zero otherwise.

larger firms (CLSA, 2000, p.1; Botosan, 1997; Hassan and Marston, 2008). The CLSA corporate governance index used by Klapper and Love (2004), Durnev and Kim (2005) and Chen *et al*. (2009) for example, includes only the largest[35] 9 South African listed firms[36]. This means that the sample firms used by previous studies are less representative of the population of South African listed firms than the sample used in this study. This raises questions with respect to the generalisation of the findings of prior research for South African listed firms.

Secondly, the extant literature suggests that corporate governance structures and systems vary across different countries (West, 2006, p.433, 2009, p.10; Aguilera and Cuervo-Cazurra, 2009, p.383; Filatotchev and Boyd, 2009, p.262). However, subjective analysts' corporate governance rankings are standardised such that they are unable to reflect institutional, cultural, and contextual differences in corporate governance structures across individual countries and systems. This implies that they are unable to assess how compliance with South African context specific affirmative action and stakeholder provisions impact on the financial performance of South African listed firms.

Thirdly, despite the increasing concerns that the presence of endogenous problems could confound research findings (e.g., Himmelberg *et al*. 1999; Chenhall and Moers, 2007a and b), with the exception of Durnev and Kim (2005)[37], none of them attempt to directly address problems that may be caused by the existence of an endogenous relationship between corporate governance and performance. This also raises questions with respect to the reliability of the results of prior studies. Finally, with the exception of Morey *et al*. (2009), all the prior studies use only cross-sectional data. This means they are unable to ascertain whether the observed cross-sectional corporate governance-performance relationship holds over time.

The current study on South Africa overcomes these limitations in prior studies in several ways. Firstly, and as will be discussed in detail in chapter five, to reduce potential sample selection bias and achieve sufficient cross-sectional variation in the sample firms, the

[35]Specifically, the average firm in the CLSA 2000 sample was 9.4 billion US dollars (CLSA, 2000, p.9).

[36]These firms are: Anglo American, De Beers, Dimension Data, First Rand, M-Cell, NEDCOR, Old Mutual, South African Brewery, and Standard Bank Investment (CLSA, 2000, p.63). Further, four out of these 9 firms included in the CLSA 2000 subjective analysts' governance rankings, namely Old Mutual, First Rand, NEDCOR and Standard Bank Investment are financial institutions (CLSA, 2000, p.13). As will be discussed further in chapter five, due to regulatory and capital structure reasons, and in line with much of the prior literature (e.g., Yermack, 1996; Haniffa and Hudaib, 2006; Chen *et al*., 2008; Guest, 2009), financial and utility firms will be excluded from the sample.

[37]Durnev and Kim (2005) explicitly attempt to address problems that may be caused by the existence of an endogenous nexus between corporate governance and performance. However, Black *et al*. (2006a, p.369) suggest that the industry instruments that they used in addressing potential endogeneity problems are somewhat suspect. This is because Durnev and Kim (2005, p.1484) assume that industry does not affect a firm's corporate governance choices. Separate research conducted by Gillan *et al*. (2003) and Black *et al*. (2006a), however, indicates that industry does influence a firm's corporate governance choices.

sample will be constructed in such a way that there will be a balance between large and small firms. Secondly, and unlike prior studies, the sample size used in this study will be reasonably large, consisting of 50 large and 50 small firms. This can arguably enhance generalisation of the results.

Thirdly, and as will be discussed in detail in chapters five and nine, problems that may be posed by the potential existence of endogeneities will be directly addressed in this study. Fourthly, the corporate governance index used in this study is a researcher-constructed instrument. Unlike subjective analysts' rankings, it has the advantage of ensuring that unique and pressing South African contextual corporate governance provisions, such as employment equity, black economic empowerment, and HIV/Aids are incorporated into the methodology. Finally, since the quality of a firm's corporate governance structures may arguably change over time, this study will examine the corporate governance-performance link using a five-year panel data with both cross-sectional and time series properties. This may ensure that the effects of both cross-sectional and time changes in corporate governance on financial performance may be appropriately captured in this study. Arguably, these improvements are likely to provide new insights, which may enrich the corporate governance-performance literature.

4.2.3.3 ***Compliance Governance Indices, Company Disclosure, and African Markets***

Apart from Klapper and Love (2004), Durnev and Kim (2005), Chen *et al*. (2009), and Morey *et al*. (2009) whose cross-country samples include South Africa, very little is known about the empirical relationship between a compliance or composite corporate governance index and financial performance among African listed firms. However, a limited number of papers, including Firer and Meth (1986), Wallace (1988), Owusu-Ansah (1998), April *et al*. (2003), Barako *et al*. (2006a and b), and Mangena and Tauringana (2007), have examined the nexus between a constructed corporate governance index and the degree of company disclosure.

Firer and Meth (1986) examine the information requirements of South African investment analysts and compare them with their UK counterparts. Using a disclosure index of 49 voluntary items for 36 listed South African firms from 1979 to 1983, they report low levels of voluntary disclosure among South African firms in comparison with their UK counterparts. Owusu-Ansah (1998) investigates the quality of corporate governance and mandatory disclosure for 49 Zimbabwean listed firms in 1994. Using a disclosure index of 214 mandatory

items, he reports that company size, ownership structure, and profitability have a statistically significant and positive effect on mandatory company disclosure.

Barako *et al*. (2006a and b) both examine factors influencing voluntary corporate disclosure by 43 Kenyan listed companies using 47 voluntary disclosure items over the period 1992-2001. Consistent with the results of Owusu-Ansah, they report that corporate governance attributes, such as ownership structure, the presence of audit committee and foreign ownership have a positive impact on voluntary disclosure. Finally, Mangena and Tauringana (2007) construct a voluntary disclosure index using 87 items for 67 Zimbabwean listed firms from 2003 to 2004 to investigate the relationship between voluntary disclosure and foreign shareownership. Consistent with prior African evidence, they report that the quality of voluntary disclosure, proportion of NEDs, institutional shareownership, and the independence of audit committees are all positively associated with foreign shareownership.

4.2.3.4 ***Recommendations of King II and the JSE's Listings Rules***

As has already been discussed in chapter three, King II and the JSE's Listings Rules set out six broad areas of good corporate governance practices, including the board and directors, accounting and auditing, internal audit, control and risk management, integrated sustainability reporting, and compliance and enforcement that South African listed firms are expected to comply with or identify and explain any areas of non-compliance. The constructed South African Corporate Governance Index (*SACGI)* contains 50 provisions, which cover all six aspects of King II.

Briefly, and as has been discussed in section 4.1, agency theory indicates that compliance with good corporate governance practices can reduce agency costs and increase shareholder returns. Information asymmetry and managerial signalling theory suggests that compliance with codes of good corporate governance standards is essentially a major way by which a firm can signal that it is better-governed. By revealing its better governance qualities, a firm may increase demand for its shares (increase firm value), but can reduce its cost of equity capital. Also, political costs theory indicates that the political system has the power (i.e., through taxation, regulations, nationalisation, expropriations, and break-ups) to redistribute wealth between various societal groups (Watts and Zimmerman, 1978, p.115; Andreasson, 2009, p.22). In this regard, companies, especially large corporations, are particularly suscetiple to wealth redistributions.

This implies that compliance with good corporate governance practices, especially the South African context specific affirmative action and stakeholder provisions may not only be a major way by which listed firms can decrease political costs, but also an opportunity for them to gain greater access to resources (resource dependence theory), such as tax holidays, subsidies, and government contracts. Therefore, in theory, South African listed firms that comply more with the provisions of King II can be expected to be associated with higher financial performance than those that do not, *ceteris paribus*.

Similarly, and as has been discussed above, prior cross-country studies whose sample include a number of South African listed firms by Klapper and Love (2004), Durnev and Kim (2005), and Morey *et al*. (2009) suggest a significant positive relationship between good corporate governance practices and firm financial performance. Further, opinion-based surveys conducted by CLSA (2000), McKinsey & Co. (2002), and Deutshe Bank (2002) among global institutional investors, including South African institutional investors, indicate that investors are willing to pay a higher premium for shares in firms with good corporate governance practices than their counterparts with poor corporate governance practices. This also suggests a positive relationship between good corporate governance and financial returns. Therefore, the respective final (8) null and alternate hypotheses to be tested in this study are that:

H_0 : There is a statistically significant positive relationship between the South African Corporate Governance Index (*SACGI)* and firm financial performance, as measured by both ROA and the Q-ratio.

H_1 : There is no statistically significant positive relationship between the South African Corporate Governance Index (*SACGI)* and firm financial performance, proxied by both ROA and the Q-ratio.

4.3 **CHAPTER SUMMARY**

This chapter has focused on the extant theoretical and empirical internal corporate governance-financial performance relationship literature. Its objective has been twofold. Firstly, it sought to review existing theories that attempt to link internal corporate governance structures with firm financial performance. Recognising the complex and multi-disciplinary nature of corporate governance, and also in line with the prior literature, multiple-theoretical

perspectives is adopted in constructing and explaining the complex relationship between internal corporate governance structures and firm financial performance.

In line with this view, the *agency problem* is identified as the main theoretical framework for the study, while *information asymmetry and managerial signalling, stewardship, resource dependence, political cost, and organisational* theories of corporate governance are relied on by this study as providing additional theoretical insights into developing the often complex nexus between certain specific internal corporate governance structures and firm financial performance. For each internal corporate governance mechanism examined in this study, and also in line with previous studies, the existing positive theoretical link(s) is(are) sharply juxtaposed with a competing theoretical view(s), further signifying and corroborating the conflicting, as well as the complex nature of the internal corporate governance structures-firm financial performance relationship.

With regard to the agency theory, it is argued that the agency problem is general and that agency costs unavoidably arise in any situation involving cooperative effort by two or more people in which the principal-agent relationship can be invoked even if not explicitly defined. Applying the classical principal-agent construct to the shareholder-manager relationship that arises as a result of the internal organisation of modern corporations in which ownership is separate from control, it is pointed out that the main concern has been about how shareholders (owners) of the firm could reduce agency costs and any additional potential divergences of managerial interests from theirs through the establishment of the appropriate monitoring and bonding framework (internal corporate governance structures) so as to improve firm financial performance.

Also, as a result of information asymmetry between shareholders and managers, the latter may need to signal their intentions in order to reduce the adverse selection and moral hazards problems that shareholders face by instituting certain internal corporate governance structures. Further, resource dependence theory contended that the institution of such corporate governance structures, as the board of directors is not only meant to monitor managers, but also help in securing critical resources for the firm. In contrast, stewardship theory assumed a different nature of managerial behaviour and argued that managers are trustworthy and so should be fully empowered to run the affairs of the firm with less external monitoring.

The second major objective of the chapter has been to review the extant empirical literature on the link between internal corporate governance structures and firm financial

performance. In this regard, two main empirical models were identified within the literature: the *equilibrium-variable* and the *compliance-index* approaches. As will be discussed in detail in chapter five, prior studies have so far only used one model or discounted the other purely on the basis of perceived theoretical strengths or weaknesses. However, it is contended that such a crucial methodological choice ought to be based on their respective theoretical and empirical validity rather than on their theoretical appropriateness alone. Therefore, focusing on both empirical models within the same study and context, offers a unique opportunity to provide first time comparative evidence as to their respective empirical strengths, which may inform methodological choices of future researchers.

In line with the theoretical literature, irrespective of the context or model reviewed, the empirical literature is generally mixed. However, the mixed evidence is more pronounced with regard to the *equilibrium-variabl*e model than the *compliance-index* approach. Also, even though the evidence regarding the *compliance-index* is conflicting within the context of developed markets, it is more conclusive with regard to emerging markets. Further, whilst the *compliance-index* model literature is quite advanced in the US, due to the lack of sufficient data, the non-US evidence is very limited. Finally, and as has been discussed in chapter three, while some African countries, such as South Africa offer an interesting research context for corporate governance, the dearth of empirical evidence on emerging African markets is evident throughout the review. Arguably, this offers an opportunity to make substantial contributions to the extant literature.

In the next chapter, the research design will be set out. Specifically, it will describe how the sample and data were collected, the research methodology used, and the extent to which the obtained empirical results are robust or sensitive to alternative estimations and explanations.

CHAPTER FIVE

RESEARCH DESIGN

5. INTRODUCTION

This chapter discusses the research design. It hopes to achieve four main interrelated objectives. Firstly, 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 clearly laid down procedure as to how the study is carried out (Hussey and Hussey, 1997). The second objective of the chapter is to clearly explain the rationale for the various data and methodological choices made at every stage of the study. The third aim of the chapter is to point out the strengths and weaknesses of the various data and methodological choices that have been made throughout the study. Finally, it aims to provide an explicit indication of how sensitive or robust the obtained empirical results from the various data and methodological choices that have been made are to alternative estimations and explanations. The remainder of this chapter is organised as follows. Section 5.1 describes the sample selection procedure and the data. Section 5.2 discusses the research methodology. Section 5.3 examines at a variety of robustness or sensitivity analyses, while section 5.4 summarises the chapter.

5.1 SAMPLE SELECTION AND DATA

This section describes the sample selection procedure, the types of data used, and the sources of the data used in carrying out this study. Specifically, the section is divided into four subsections. Subsection 5.1.1 will describe the sample selection procedure, subsection 5.1.2 will present the types and sources of data used. Subsection 5.1.3 will describe the criteria for selecting the final sample, whilst subsection 5.1.4 will discuss the reasons for selecting the final stratified sample of 100 companies.

5.1.1 Sample Selection

The sample firms used in examining the internal corporate governance-financial performance link were drawn from companies listed on the JSE Ltd, South Africa. As at 31 December 2006, a total of 402 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 was also cross-checked against the list provided on the JSE's official website, which is available at: http://www.jse.co.za, accessed in December 2006.

In total, there are ten major industries, including basic materials, consumer goods, consumer services, financials, health care, industrials, oil and gas, technology, telecommunications, and utilities. Table 3 presents a summary of the sample selection procedure. Panel *A* of Table 3 shows the industrial composition of all companies that were listed on the main board of the JSE as at 31 December 2006. Panels *B*, *C*, and *D* present the industrial composition of listed firms available to be sampled, sampled firms with full data, and the final 100 stratify sampled firms, respectively. Panel *A* indicates that the market is dominated by financials, industrials, basic materials, and consumer services industries. Together, the four industries account for approximately 79% of the entire JSE population of listed firms.

To begin with, the financials industry with 109 firms, and utilities industry with 2 firms, which together accounts for approximately 28% of the entire population were excluded from being sampled for three well-known reasons. Firstly, financial and utility firms are heavily regulated, which may impact differently on their governance structures and financial performance (Yermack, 1996, p.189; Cheng *et al*., 2008, p.126; Guest, 2009, p.390). For example, section 3 of the South African Companies Act 1973 states that the provisions of the Act do not apply to financial firms, such as banks, insurance companies, and pension funds, which are governed by special statutory legislations. Banks are, for instance, specially governed by the Banks Act (No. 94 of 1990) in addition to regulations from the South African Reserve Bank (SARB).

Table 3: Summary of the Sample Selection Procedure

Panel A: Industrial Composition of all Listed firms on the JSE as at 31/12/2006		*No. in each Industry*	*Percentage(%) of population*
Financials		109	27.1
Industrials		81	20.1
Basic Materials		67	16.7
Consumer Services		62	15.4
Consumer Goods		36	9.0
Technology		31	7.7
Health Care		7	1.7
Telecommunications		4	1.0
Oil and Gas		3	0.8
Utilities		2	0.5
Total population		*402*	*100.0*
Less: Financials, and	109		
Utilities	2	111	27.6
Total sampled firms		*291*	*72.4*

Panel B: Industrial composition of Firms available to be sampled		*No. in each Industry*	*Percentage of sample*
Industrials		81	27.8
Basic Materials		67	23.0
Consumer Services		62	21.3
Consumer Goods		36	12.4
Technology		31	10.7
Health Care		7	2.4
Telecommunications		4	1.4
Oil and Gas		3	1.0
Total Firms Available to be sampled		*291*	*100.0*
Less: Firms with no year's data available	28		
Firms with some years' data missing	94	122	41.9
Total sampled firms with full data		*169*	*58.1*

Panel C: Industrial composition of Sampled firms with full data	*No. in each Industry*	*Percentage of sample*
Industrials (2 email and 2 postal copies of annual reports)	51	30.2
Consumer Services	35	20.7
Basic Materials (2 website copies of annual reports)	33	19.5
Consumer Goods	24	14.2
Technology (2 website and 1 email copies of annual reports)	19	11.2
Health Care	3	1.8
Telecommunications (1 postal copy of annual report)	3	1.8
Oil and Gas	1	0.6
Total Sampled Firms with full data	*169*	*100.0*

Continuation: Table 3

Panel D: The final 100 Stratified Sampled firms	*No. in each Industry*	*Final no. of Stratified Sample*	*Percentage of the final Industrial sample(169)*	*Percent. of Industrial Sample(291)*
Industrials	51	20	39.2	24.7
Consumer Serv./Health Care	38	20	52.6	29.0
Basic Materials/Oil and Gas	34	20	58.8	28.6
Consumer Goods	24	20	83.3	55.6
Technology/Telecoms.	22	20	90.9	57.1
Total sample	*169*	*100*	*59.2*	*34.4*

Sources: The JSE Ltd – Panel *A*; Author's Compilation – Panels *B, C* and *D*. In total, full five years (2002 - 2006) annual reports totalling 845 were collected for the final 169 firms in Panel *C*. 835 (98.8%) of the annual reports were collected from *Perfect information.* As Panel *C* indicates, the remaining 10 (1.2%) annual reports were collected as follows: 3 postal copies, 3 email copies, and four company website copies.

Secondly, financial firms have unique capital structure (i.e., highly geared), which can impact on financial performance differently (Lim *et al*., 2007, p.562)[38]. Finally, excluding financial and utility companies can help facilitate comparisons with prior studies (e.g., Ho and Williams, 2003; Haniffa and Hudaib, 2006; Mangena and Chamisa, 2008), who also exclude such firms. All the remaining 291 firms constituting 72.4% of the entire JSE population were then sampled for possible inclusion. *Panel B* of Table 3 presents the industrial composition of the remaining 8 industries that were sampled as at 31 December 2006.

The remainder of this section is divided into three. The next subsection will describe the types and sources of data used in this study, while subsections 5.1.3, and 5.1.4 will present the criteria, and reasons for selecting the final 100 stratify sampled firms used in this study, respectively.

5.1.2 **Data and Sources**

Two main types of data are used in examining the relationship between internal corporate governance structures and financial performance of South African listed firms. The first category consists of internal corporate governance variables. All the internal corporate governance variables were manually extracted from the annual reports of the sampled companies. The annual reports were mainly obtained from the *Rest of the World Filings* of the *Perfect Information Database* in electronic format. Considerable amount of efforts were put in

[38]The recent globall financial crisis in which banks and other financial institutions (BOFIs) have particularly been affected negatively worldwide offers anecdotal support to this argument (see Turner Review, 2009; Walker Review, 2009).

to maximise the sample size, as much as possible. As a result, for companies with a particular year's annual report missing or not available in *Perfect Information*, they were either directly contacted via telephone or e-mail or their websites were scanned if they had websites for hard or electronic copies.

As Panel *C* of Table 3 indicates, and as will be further explained below, in total, ten company annual reports that were not found in *Perfect Information* forming approximately 1.2% of the total 845 annual reports obtained (i.e., 169 firms over five firm years each) were received as follows: three postal copies, three e-mail electronic versions, and four reports were obtained from company websites. The remaining 835 (i.e., 98.8%) company annual reports were all obtained from *Perfect Information*. Company annual stock market and financial accounting performance variables constitute the second type of data used in this study. These were all collected from *DataStream*.

5.1.3 **The Criteria for Selecting the Final Sample**

To be included in the final sample, a firm has to meet the following two criteria: (1) a company's full five-year annual reports from 2002 to 2006 inclusive must be available either in *Perfect Information* or via other media used, such as e-mail, company official website and postal delivery, as described above; and (2) its corresponding five-year stock market and financial accounting information must also be available in *DataStream*. These criteria were imposed for several reasons.

Firstly, the criteria helped in meeting the requirements for a balanced panel data analysis, which favours, including only firms with several consecutive years of data (Yermack, 1996, p.189; Cheng *et al*., 2008, p.126). There are advantages for using panel data. By combining time series of cross-sectional observations, balanced panel data provides: (i) more degrees of freedom; (ii) less collinearity among variables; (iii) more cross-sectional and time series variability; (iv) more asymptotic efficiency; (v) more informative data; and (vi) account more for observable and unobservable firm-level heterogeneity in individual-specific variables (Gujarati, 2003, p.637).

It is also a timely response to recent calls for the use of panel data in corporate governance research as a way of minimising inherent statistical problems, such as endogeneity (Börsch-Supan and Köke, 2002, p.301; Larcker and Rusticus, 2007, p.208). A potential weakness is that it introduces survivorship bias into the sample selection process. However, and as will be discussed further below, the criteria generated comparatively larger sample size

in relation to those of prior South African studies to the extent that the generalisability of the research results may not be substantially impaired. Secondly, it is in line with previous corporate governance researchers who have used panel data (e.g., Yermack, 1996; Gompers *et al*., 2003; Bhagat and Bolton, 2008), and specifically five-year balanced panel (e.g., Boyd, 1995; Gani and Jermias, 2006; Haniffa and Hudaib, 2006). Thirdly, using a five-year data is also generally in line with conventional capital markets-based research (Fama, 1965; Strong, 1992, p.538; Kothari, 2001, p.186).

Fourthly, contrary to much of the existing literature that uses one year cross-sectional data, analysis of five-year data with both cross-sectional and time series properties may help in ascertaining whether the observed cross-sectional internal corporate governance structures-performance link also holds over time. Fifthly, and as will be discussed further in subsection 5.3, the five-year panel ensured that sufficient series are obtained to permit carrying out proposed statistical and robustness analyses, such as endogeneity test. Sixthly, the sample begins from the 2002 financial year because it is the year King II came into force in which JSE listed firms were required to comply with its provisions or explain in the case of non-compliance (King Report, 2002, pp.20-21, 41). Finally, the sample ends in 2006 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 *B* of Table 3 shows, the full data required is obtained for a total of 169 (58.1%) out of the 291 firms constituting the remaining eight industries. For 94 of the remaining 122 firms, two or more years of financial performance data and/or annual reports could not be found in *DataStream* and *Perfect information*, respectively or via other media, such as company websites, and direct e-mail or telephone contacts. For the remaining 28 firms, neither financial performance data nor full annual reports are available in *DataStream* and *Perfect Information*, respectively or the other media used.

The sample of 169 firms is still large when compared with previous South African studies (e.g., Firer and Meth, 1986; April *et al*., 2003; Ho and Williams, 2003; Mangena and Chamisa, 2008). For example, in investigating corporate governance and incidences of listing suspension by the JSE, Mangena and Chamisa (2008) obtained full annual reports data on 81 out of a possible 538 suspended firms identified over the period 1999-2005. Similarly, using various techniques – direct contact, database, and websites searches, Ho and Williams (2003) were able to obtain a useable cross-sectional sample of 84 annual reports for South African listed firms for the 1998 financial year to examine the association between board structure and the efficiency of value added by a firm's physical and intellectual capital resources. Firer and

Meth (1986) obtained only 36 annual reports for studying information requirements of investment analysts in South Africa, while April *et al*. (2003) received only 20 annual reports for examining intellectual capital disclosures among South African mining firms.

Panel *C* of Table 3 contains the industrial composition of the 169 firms for which a full five-year data is available. The industrials/manufacturing sector remains the largest with 51 firms out of the total 169 firms, accounting for 30.2%. By contrast, health care, oil and gas, and telecommunications industries together accounts for a meagre 4.1% of the total 169 sampled firms. This is consistent with the composition of the natural population. Due to the small number of observations in three industries, namely; health care, oil and gas, and telecommunications with three, one, and three listed firms, respectively, were merged with the closest remaining five major industries. As a result (see Panel *D* of Table 3), the *three health care* companies were included in the *consumer services* industry; the *one oil and gas* firm was added to the *basic materials* industry, while the *three telecommunications* companies were also shared out to the *technology* industry.

Finally, and the rationale for which will be explained in subsection 5.1.4, a stratified sample of 100 firms out of the total 169 companies, consisting of 20 firms each from the five main remaining industries were taken. This is achieved by first ranking all the firms in each industry by their five-year average (i.e., from 2002 to 2006 inclusive) market capitalization, as a proxy for size[39]. Using the five-year average market value in ranking the firms is in line with prior research (Demsetz and Lehn, 1985, p.1164). Crucially, it is found to be more powerful in capturing the actual size of the firms over the five-year period than using the market value of a single financial year for example. In each industry, the largest[40] 10 ranked companies and smallest 10 ranked firms are then selected to form a group of 20 firms in each industry.

Panel *D* of Table 3 contains the breakdown of the remaining five industries, as well as the final 100 stratified sample firms. As can be observed from Panel *A* of Table 3, a notable limitation of selecting equal number of firms from each industry is that the composition of the final sample will not be representative of the natural JSE population of 402 or the possible JSE

[39]With the recent significant increase in the value of corporate intangibles, especially among telecommunications and technology firms (Brand Finance, 2006, pp.6-8; Holland, 2006, pp.281-282; Ghosh and Wu, 2007, pp.216-218), market value is considered to be a more germane and objective size measure. Also, experiments with other potential size measures, such as total assets and sales yielded similar results. For example, the correlation between market value and total assets is 0.948, while the correlation between market value and total sales is 0.896.

[40]For five companies, one from the basic materials, three from the industrials, and one from the consumer services, they were large instead of the largest ranked companies. These five firms were used in conducting the initial pilot test for the study and have been retained in the final sample.

sample of 291. However, as Panel *D* shows, with the exception of the industrials sector, the final stratified sample of 20 firms in each industry forms more than 50% of the final useable industrial sample. Also, the total selected 100 firms from the five industries accounts for close to 60% of the useable sample of 169 (i.e., firms with full data available). Similarly, apart from the industrials, the final stratified sample of 20 companies in each industry constitutes more than 25% of the original industrial population. In total, the final 100 stratified sample for the five industries also forms close to 25% of the entire JSE population of 402 listed firms. Appendix 1 contains a list of the names and industries of the sample of 100 firms used in this study.

5.1.4 **Reasons for Selecting the Final 100 Stratified Sample**

Several theoretical, empirical, and practical reasons motivated the selection of the 100 firms on the basis of size and industry. Firstly, a considerable and well-established theoretical and empirical accounting disclosure literature exists, which suggests that company size and industry matter (e.g., Cerf, 1961; Verrecchia, 2001; Beattie *et al*., 2004; and Hassan and Marston, 2008, amongst others). Specifically, Lang and Lundholm (1993, p.246) provide US evidence, which suggests that accounting disclosure is positively correlated with firm size.

The positive relationship between size and disclosure can be explained by several factors. Firstly, accounting compliance and disclosure have cost implications that smaller firms may struggle to afford in comparison with their larger counterparts (Lang and Lundholm, 1993, p.252). Secondly, larger firms are exposed to greater public scrutiny, analysts and financial press following, which compels them to disclose more (Lang and Lundholm, 1993, pp.249-251). Thirdly, larger firms are more complex with respect to the scope of their business operations, segments, products, markets and geographical locations (Marston and Shrives, 1991, p.205), and therefore have more to disclose. For example, it can be argued that a multinational multi-product company would have more to disclose than a small locally listed company.

Fourthly, larger firms are more likely to be cross-listed[41] (Marston and Shrives, 1991, p.206; Melvin and Valero, 2009, p.66) and be subject to additional corporate governance disclosure requirements (CLSA, 2000, p.1; Deutsche Bank, 2002, pp.9-10, 30). Fifthly, prior literature suggests that the political costs of stringent regulations, nationalisation, taxation, and break-ups, amongst others, are positively associated with firm size (Watts and Zimmerman,

[41]As will be discussed in subsection 5.2, cross-listing will be used as one of the control variables in this study.

1978, p.115; Andreasson, 2009, p.22). As a result, larger firms have additional incentives of reducing political costs of strict central regulation or even nationalisation through increased disclosure, especially with respect to affirmative action and social disclosures (Watts and Zimmerman, 1978, p.115; Marston and Shrives, 1991, p.205). Finally, prior literature suggests that larger firms have greater agency problems and a higher need to attract new external capital (Jensen, 1986, p.323; Core, 2001, p.443; Beiner *et al*., 2006, pp.250, 253). This means that larger firms may have to disclose more in order to reduce the twin information asymmetric problems of adverse selection and moral hazard.

Recent studies by Botosan (1997), Clarkson and Satterly (1997), Haniffa and Cooke (2002), Jiang and Kim (2004), and Mangena and Tauringana (2007), amongst others, offer evidence, which shows that, on average, larger firms tend to disclose more than smaller firms. As a corollary, the top and the bottom ten firms in each industry ranked by their five-year average market capitalisations are sampled. The rationale is to achieve a fair balance between larger and smaller firms. As has been discussed in chapter four, unlike previous studies, this will help to achieve sufficient cross-sectional variation in corporate governance disclosure levels, and improve generalisation of the research results.

Secondly, the same accounting disclosure literature indicates that different industries depict different patterns of corporate governance disclosure (Botosan, 1997, p.327; Deutsche Bank, 2002, p.6; Gillan *et al*., 2003, pp.1-2). Lang and Lundholm (1993, p.251) suggest, for example, that biotechnology firms appear to disclose more voluntary information because of the severe information asymmetry between managers and investors. In contrast, Botosan (1997, p.327) reports that pharmaceutical firms tend to disclose more about their research and development activities than do firms in other industries.

Of particular interest to this study, opinion-based surveys conducted by CLSA (2000) and Deutsche Bank (2002) in emerging markets, including South Africa indicate that corporate governance standards vary across different industries. The results of the Deutsche Bank (2002, p.6) survey, for example, suggests that corporate governance standards were highest among energy or consumer services firms, whilst good corporate governance practices were weakest among technology firms. As a result, to prevent one industry from dominating the sample, and crucially, to maximise the generalisability of the results, equal number of 20 firms from each of the five major remaining industries is sampled.

Thirdly, the final 100 stratified sampled firms, which generated a total of 500 firm-year observations, form a significant percentage of the total possible sample, as well as the JSE

population. It constitutes approximately 60% and 34% of the useable final sample of 169 and the possible JSE sample of 291 firms, respectively, which statistical sampling (central limit theorem) theory suggests is a sufficiently large sample (Whatsham, and Parramore, 1997, pp.136-140; Anderson *et al*., 2007, pp.239-241). Finally, for practical considerations, the sample was restricted to 100 companies. In particular, the corporate governance variables were manually extracted, which is a highly labour-intensive activity (Hussainey *et al*., 2003, p.276; Beattie *et al*., 2004, pp.232-233). As a result, practical limitations of time, effort and finance meant that the sample had to be reduced to a number that is statistically large enough to make a significant contribution, while at the same time ensuring that the study is completed within the scheduled time-frame of a PhD.

5.2 **RESEARCH METHODOLOGY**

This section considers the research methodology. Specifically, subsection 5.2.1 will attempt to explain the theoretical underpinnings, potential weaknesses and the rationale for examining the two major competing positive corporate governance models within the extant literature in the current study. Subsection 5.2.2 will discuss the *compliance-index* model. The issues that will be covered include how the South African corporate governance index (the *SACGI*) (i.e., the main independent variable with regard to the *compliance-index* model) is constructed, and proxies that will be used as control, and financial performance (dependent) variables. Finally, subsection 5.2.3 will discuss the *equilibrium-variable* model. The issues that will be covered include proxies that will be used as independent, control and dependent variables.

5.2.1 **The Equilibrium-Variable and the Compliance-Index Models and their Theoretical Underpinnings**

As has briefly been explained in chapter four, there are two major competing positive theoretical and empirical internal corporate governance models (positive methodologies[42]) within the extant corporate governance literature: the *equilibrium-variable* and the *compliance-index*. While some researchers have examined the internal corporate governance-

[42]A third strain of the positive corporate governance literature adopts conventional event study methodology to estimate the stock market reaction to the adoption of certain corporate governance structures by publicly traded firms (e.g., DeAngelo and Rice, 1983; Lambert and Larcker, 1985; Rosenstein and Wyatt, 1990; Wild, 1994; Fox and Opong, 1999; Black *et al*., 2007; and Huang *et al*., 2008, amongst others). The event study methodology is not adopted or considered in this study because firm-level data of corporate governance adoption dates are not available.

performance link by following the *equilibrium-variable* model (e.g., Demtz and Lehn, 1985; Agrawal and Knoeber, 1996; and Haniffa and Hudaib, 2006; amongst others), others have done so using the *compliance-index* approach (e.g., Gompers *et al*., 2003; Shabbir and Padget, 2005; and Cheung *et al*., 2007, amongst others).

An important methodological issue, however, is that the two models are based on contrasting theoretical assumptions (e.g., Demtz and Lehn, 1985; Agrawal and Knoeber, 1996, Beiner *et al*., 2006; Black *et al*., 2006c). The *equilibrium-variable* model, for example, is based on distinct assumptions. Firstly, it assumes that the extent to which individual internal corporate governance mechanisms, such as director shareownership and the proportion of non-executive board members are used, is mainly determined within the firm (Agrawal and Knoeber, 1996, p.378). Secondly, it assumes that some corporate governance mechanisms are more important than others (e.g., Barako *et al*., 2006a and b; Hassan and Marston, 2008).

Thirdly, there are no mandatory or statutory corporate governance provisions[43] for firms to comply with (Danielson and Karpoff, 1998, pp.348, 355-356), which was largely the case before the worldwide proliferation of corporate governance codes in the late 1980s (Black *et al*., 2006a, p.367). As a result, a firm's internal governance choices are assumed to be an endogenous response to: (1) specific firm needs or business purposes, including preventing hostile takeovers, the desire to attract qualified independent directors, and shareholder pressure; (2) important court rulings or decisions; (3) professional business and legal advice; (4) peer behaviour in which a firm copies provisions used by competitors or common provisions within the industry; and (5) its investment opportunities, information, and regulatory environment (Danielson and Karpoff, 1998, pp.355-356; Gillan *et al*., 2003, p.1-2).

Fourthly, it assumes that agency problems vary across firms due to differences in ownership, size, complexity of operations, and industry, amongst other firm-level features (Marston and Shrives, 1991, pp.196-197; Gillan *et al*., 2003, pp.1-2). Fifthly, firms' external corporate governance mechanisms, such as the market for corporate control, investor monitoring, legal, and regulatory rules are exogenously determined, in which variations across firms' external environments may either help maximise or destroy firm value (Agrawal and Knoeber, 1996, p.379; Gillan *et al*., 2003, p.1).

[43]This is still partially true for South Africa and all countries that follow UK's principle of encouraging listed firms to qualitatively comply with corporate governance codes by 'complying' or 'explaining' themselves in case of non-compliance with the provisions. This is because while compliance with corporate governance codes in such countries is voluntary, they are usually appended to Stock Exchange listings rules for which consistent non-compliant listed firms may face serious sanctions, such as suspension or de-listing (e.g., Malherbe and Segal. 2003; Armstrong *et al*., 2006; Mangena and Chamisa, 2008).

Finally, it assumes that the use of individual internal corporate governance structures are not necessarily complementary such that where one corporate governance mechanism is used more, others may be used less, leading to equally good performance (Agrawal and Knoeber, 1996, p.378; Danielson and Karpoff, 1998, pp.347, 368). This suggests that there is an optimal relationship between the use of corporate governance mechanisms and financial performance in which a firm will continue to institute governance structures until marginal costs are equal to marginal gains (Demsetz and Lehn, 1985, p.1155; Core, 2001, p.442-444).

As a result, an *equilibrium-variable* model researcher will typically search in a cross-sectional sample of listed firms for links between performance and greater use of one or several corporate governance mechanisms on the basis of some endogenous assumptions (Agrawal and Knoeber, 1996, p.378; Shabbir and Padget, 2005, p.6)[44]. A major theoretical implication is that if all firms are in *equilibrium* with respect to their governance choices, then a carefully specified cross-sectional regression should find no link between performance and the use of those internal corporate governance mechanisms (Agrawal and Knoeber, 1996, pp.381-382; Shabbir and Padget, 2005, pp.5-6). If this equilibrium assumption were to be realistic, then that in itself could technically introduce the problem of endogeneity[45] into the specified structural equations (Black *et al*., 2006a, p.367; Chenhall and Moers, 2007a, p.183).

By contrast, the *compliance-index* model assumes that internal corporate governance mechanisms are externally imposed, and so firms tend to choose governance structures as a set (Danielson and Karpoff, 1998, p.367-368; Shabbir and Padget, 2005, p.7). This is particularly true for listed firms in the US where compliance with corporate governance rules, such as those of the Sarbanes-Oxley Act 2002, are backed by statutory legislation. Specifically, it assumes that a firm's financial performance is likely to be influenced by a number of agency mechanisms with possible interactive effects in an integrated framework (Gillan *et al*., 2003, p.1; Beiner *et al*., 2006, p.249).

Also, due to the existence of alternative corporate governance mechanisms, there may be possibilities of interdependence among the variables (Agrawal and Knoeber, 1996, p.378). As a result, instead of looking at single corporate governance mechanisms in isolation, this model calls for the construction of a *compliance-index*, containing a comprehensive set of

[44]As will be pointed out below, the equilibrium assumption is highly unrealistic. For example, one possible way of achieving equilibrium is if every firm in a sample were to make use of the same corporate governance mechanisms. Arguably, this is highly unlikely in practice.

[45]Potential econometric problems of endogeneity in this study will be addressed in subsection 5.3.1.

corporate governance provisions for the empirical investigation of the internal corporate governance-performance link (Gillan *et al*., 2003, p.4; Shabbir and Padget, 2005, p.7).

5.2.1.1 ***The Potential Weaknesses of the Two Competing Methodologies***

To date, no researcher has used both competing corporate governance models within the same study and context. However, from a methodological perspective, serious empirical questions remain unanswered in relation to the two models. With regard to the *equilibrium-variable* model, a theoretical argument is that the existence of alternative corporate governance mechanisms and their possible interdependence renders *OLS* regressions that attempt to link the use of any single mechanism to firm performance difficult to interpret (Agrawal and Knoeber 1996, p.378; Beiner *et al*., 2006, p.252). That is, the results from such regressions may be spurious because they ignore possible interactions among the corporate governance mechanisms

Also, the potential presence of omitted variable bias suggests that cross-sectional *OLS* regressions of firm performance on single corporate governance structures may result in misleading regression coefficients (Agrawal and Knoeber, 1996, p.377; Black *et al*., 2006a, p.367). Additionally, it has been contended that while it is theoretically possible for a firm to determine its optimal governance structure[46], in practice, it is extremely difficult to unravel (Karpoff, 1998, p.352). In fact, and as has been reviewed in subsection 4.2 of chapter four, a considerable number of studies document significant impact of internal corporate governance structures on performance using cross-sectional samples. This demonstrates that, in practice, sufficient variations in wealth effects of corporate governance structures may exist across firms[47].

In the case of the *compliance-index*, Gillan *et al*. (2003, p.3) suggest that it is possible for a constructed *compliance-index* to loose some of its explanatory power through the aggregation process. By contrast, Core (2001, p.452) suggests that aggregating the corporate governance proxies into a single measure may enhance explanatory power. Also, if this model's contention that firms' internal governance structures are largely a function of external forces, such as the regulatory environment, is allowed to hold, then it will fail to provide

[46]It should also be noted that while a firm can theoretically determine its optimal internal governance structure, it has no control over its external governance mechanisms whose effects may maximise or destroy firm value (Agrawal and Knoeber, 1996, p.379). Arguably, this can potentially still push a firm which is presumably in equilibrium with respect to its internal governance structure into disequilibrium. This makes the equilibrium assumption very unrealistic in practice (Chenhall and Moers, 2007a, p.184).

[47]At least, if potential data and methodological weaknesses within prior studies are assumed away.

compelling explanations for the cross-sectional differences in the use of corporate governance mechanisms among firms' that are observed in practice (Core, 2001, p.444). Crucially, and as has been discussed in subsection 5.1.4, *compliance-index* construction[48] has been widely acknowledged to be costly in terms of time and labour involved (Beattie *et al*. 2007, p.140; Core, 2001, p.452). This places limitations on the sample size used by prior studies and the generalisability of their research results.

As a consequence, a critical methodological question is that – does the use of the *equilibrium-variable* model or the *compliance-index* model have the potential to influence the interpretation of the resulting empirical analyses? Another methodological issue of concern, for example, is that if applying the *equilibrium-variable* model leads to essentially similar results as the *compliance-index* model, then is it valuable to construct a *compliance-index* given that it has been shown to be expensive and labour-intensive to the extent that it is only feasible in relatively small samples? Crucially, and as has been discussed in chapter four, much of the existing literature has produced conflicting results regarding the impact of internal corporate governance mechanisms on financial performance. To what extent can this be explained by the methodological choices of researchers?

While these are largely empirical issues, however, prior research has not examined their comparative empirical validity and explanatory powers. Danielson and Karpoff (1998, p.368) discuss most of the theoretical and methodological issues raised above, but fail to offer empirical support. Similarly, Agrawal and Knoeber (1996, p.377) provide empirical evidence of interdependence among alternative corporate governance mechanisms, but they do not construct a compliance or composite index to examine their respective empirical robustness. This has left previous researchers to either arbitrarily choose one methodology (e.g., Yermack, 1996; Gompers *et al*., 2003; Haniffa and Hudaib, 2006) or select the other based on some of the theoretical and methodological arguments that have been pointed out above alone (Gillan *et al*., 2003; Black *et al*., 2006a; Beiner *et al*., 2006).

However, it is contended that such a crucial methodological choice ought to be based on both their respective theoretical and empirical validity if the resulting empirical evidence is to be robust. Hence, consistent with prior research, the *equilibrium-variable* and the *compliance-index* models are independently estimated. In this case, the relationship between a

[48]This is particularly crucial for non-US studies where researchers usually have to resort to manual collection of corporate governance data because firm-level corporate governance data is not readily available from independent professional corporate governance research and ratings organisations, such as Insititutional Shareholder Services and Standards & Poors.

constructed comprehensive corporate governance index for South African listed firms *(*the *SACGI)* and financial performance is first examined, while the second model investigates the same relationship by using single corporate governance provisions in isolation. Distinct from previous studies, however, their comparative empirical validity and powers are further investigated within the same study and context. As has already been pointed out in subsection 4.2.1 of chapter four, the central rationale is to ascertain whether different research results will be obtained depending on the model used. This may help inform methodological choices of future researchers.

The next subsection will describe the independent, control and dependent variables, and how they are measured in each model. Specifically, subsection 5.2.2 will provide a comprehensive description of the *compliance-index* model – how the *SACGI* was constructed, the control, as well as the dependent variables. This will be followed by a similar description of the independent, control and dependent variables for the *equilibrium-variable* model at subsection 5.2.3. Also, the rationale, the limitations, the strengths and where applicable, the theoretical links relating to the selected proxies for independent, control and dependent variables of each model will be discussed. Finally, methodological issues of replicability, reliability and validity will also be addressed.

5.2.2 **The Compliance-Index Model**

5.2.2.1 ***The Main Independent Variable: The South African Corporate Governance Index (*the *SACGI)***

With regards to the *compliance-index* model, the constructed *South African Corporate Governance Index* (hereafter, the "*SACGI*") is the main independent variable used in examining the relationship between internal corporate governance structures and financial performance. The *SACGI* is an aggregation of 50 comprehensive set of corporate governance provisions contained in the 2002 *King Report on Corporate Governance for South Africa* (henceforth, "*King II*"). As has been discussed in chapter three, the *SACGI* is constructed based on the six broad sections of *King II* covering: (1) boards and directors; (2) risk management; (3) internal audit; (4) integrated sustainability reporting (non-financial information); (5) accounting and auditing; and (6) compliance and enforcement. As has been explained in chapter three, South African companies listed on the JSE are required to comply with these corporate governance provisons or give reasons in the case of non-compliance.

This is generally in line with prior studies that have relied on either national (e.g., Cadbury Report, 1992; Combined Code 1998; Swiss Code of Best Practice, 2002) or international codes of corporate governance (e.g., OECD Principles, 1999; Commonwealth Principles, 1999; Global Reporting Initiative, 2000), in constructing their composite corporate governance indices (e.g., Shabbir and Padget, 2005; Beiner *et al*., 2006; Cheung *et al*., 2007). Appendix 2 contains the six broad sections and the various variables that make-up the *SACGI*. It also provides explicit definitions of the coding instruments and how the variables have been measured.

The *SACGI* is distinct from those of prior research in three main aspects. Firstly, unlike previous studies that focus on specific aspects of corporate governance in isolation, for instance, shareholder rights (Gompers *et al*., 2003; Cremers and Nair, 2005), board size (Yermack, 1996), blockholding (Demsetz and Lehn, 1985), role duality (Baliga *et al*., 1996), director ownership (Morck *et al*., 1988), and frequency of board meetings (Vefeas, 1999a), amongst others, it covers all aspects of internal corporate governance. This allows for the existence of potential interactions and interdependences among alternative corporate governance mechanisms. Secondly, in line with prior studies (e.g., Beiner *et al*., 2006; Black *et al*., 2006a and b; Cheung *et al*., 2007), the *SACGI* covers conventional internal corporate governance issues, such as the board and directors, and internal audit (see sections 1 to 4 of Appendix 2). By contrast, it is distinct in its coverage of South African context specific affirmative action and stakeholder corporate governance provisions under the integrated sustainability reporting (see section 5 of Appendix 2).

These affirmative action and stakeholder corporate governance issues, include employment equity, HIV/Aids, occupational health and safety, ethics, board diversity, black economic empowerment, social, and environmental reporting. Section 5 of Appendix 2 shows how these unique contextual corporate governance issues are measured and incorporated into the methodology. As has been discussed in chapter three, these affirmative action and stakeholder issues are extremely crucial within the South African corporate context for two reasons.

Firstly, and as has been discussed in subsection 3.3.3.3 of chapter three, there is an on-going local policy debate as to whether the current ‘hybrid’ or Anglo-American corporate governance model is appropriate for South Africa given its unique political, social, and economic challenges (e.g., Kakabadse and Korac-Kakabadse, 2002; Spisto, 2005; West, 2006, 2009). Secondly, South African listed firms are required to comply with stakeholder issues,

such as black economic empowerment. Prior literature suggests that compliance with stakeholder issues has additional financial costs implications for listed firms (e.g., Kakabadse and Korac-Kakabadse, 2002; LSE, 2007). However, it is still empirically unknown how compliance with these South African context specific affirmative action and stakeholder issues will impact on the economic fortunes of listed firms. Therefore, by incorporating these South African context specific affirmative action and stakeholder issues in the *SACGI*, the economic consequences of complying with these stakeholder issues for South African listed firms can be empirically quantified.

As will be discussed further in chapters six and seven, the *SACGI* containing 50 corporate governance provisons will be split into two: Social-*SACGI* and Economic-*SACGI*. The *Social-SACGI* will contain 9 South African context specific affirmative action and stakeholder provisions, such as employment equity and black economic empowerment (see section 5 of Appendix 2). The relationship between the Social-*SACGI* and firm financial performance, as proxied by return on assets (an accounting based performance measure) and Tobin's Q (a market based performance measure) will be examined. As has been explained above, the rationale is to ascertain the economic impact of complying with these affirmative action and stakeholder issues on South African listed firms. The Economic-*SACGI* will contain 41 conventional corporate governance provisions, such as role or CEO duality (see section 1 to 4 of Appendix 2). The association between the Economic-*SACGI* and the two financial performance proxies will also be examined. Therefore, the analysis of the relationship between the Economic-*SACGI* and the two performance measures can be considered to be more comparable with prior studies.

A potential line of criticism is that by covering distinctively South African context specific affirmative action and stakeholder corporate governance issues in the *SACGI*, the ability to make direct comparisons with prior studies may be impeded. However, and as can be observed from Appendix 2, distinctively South African contextual issues account for less than 20% (9 out of 50) of the *SACGI*. In this case, and in line with prior studies, the *SACGI* is dominated by conventional internal corporate governance issues. Distinct from prior studies, however, it attempts to incorporate South African context specific affirmative action and stakeholder corporate governance issues. Arguably, this has the potential of uncovering new valuable insights that may enrich the internal corporate governance-performance relationship literature.

The next six subsections will discuss how the *SACGI* is constructed. Specifically, subsection (i) will explain the rationale and source of the corporate governance information. Subsection (ii) will discuss the rationale for using a researcher-constructed index. Subsection (iii) will describe how the internal corporate governance provisions were scored. Subsection (iv) will examine the rationale for the coding scheme used in this study. Subsection (v) will address the reliability and validity of the *SACGI*, whilst subsection (vi) will discuss the general sampling and index construction limitations.

i) *The Source of the Corporate Governance Information: Company Annual Reports*

Despite the existence of other means[49] by which companies can disclose timely corporate governance information (Hassan and Marston, 2008, p.5), the *SACGI* is solely based on corporate governance information that firms provide in their annual reports for several reasons. Firstly, and as has been discussed in subsection 3.3.1 of chapter three, 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 (e.g., Lang and Lundholm, 1993; Botosan, 1997). This is because a firm can be sued for providing misleading information. Secondly, prior evidence suggests that annual report disclosure levels are positively correlated with the amount of disclosure provided via other media (Lang and Lundholm, 1993, p.258; Botosan, 1997, p.329)[50].

Thirdly, the weights applied to annual report disclosures by the major independent professional corporate governance research and ratings organisations, such as AIMR/AFAF,

[49]Accounting disclosure media have been classified into three major categories: annual published and other required information; quarterly or interim and other published information not required; and other aspects or investor relations (Lang and Lundholm, 1993, pp.253-254; Botosan and Plumlee, 2002. pp.29-30). *Interim reports* cover quarterly reports to shareholders, proxy statements, annual meeting reports, management forecasts, fact books, press releases, and newsletters. *Other aspects* cover senior management presentations to analysts and investors, press conferences, company-sponsored field trips, interviews, and company websites (Botosan and Plumlee, 2002, p.30). While the corporate governance information provided in company annual reports can be expected to be adequate, these other information media are being explicitly acknowledged as potential sources of corporate governance information.

[50]Lang and Lundholm (1993, p.258) find that the correlation between annual report disclosures and quarterly or other report disclosures is .62, while the correlation between annual report disclosures and other aspects or investor relations is .41. Similarly, Botosan and Plumlee (2002, p.33) report that: the correlation between annual report disclosures and interim or other report disclosures is .634; the correlation between annual report disclosures and other aspects or investor relations' disclosures is .499; and the correlation between annual report disclosures and total disclosures (i.e., including annual reports, interim or other reports, and other aspects or investor relations) is .824.

CLSA, GMI, HCGR, ISS, SEC and S&P[51] range between 40-50% of the overall disclosure scores (Botosan and Plumlee, 2002, p.30; Hassan and Marston, 2008, p.6). By contrast, quarterly and other published information carries a weight that ranges between 30-40%, while other aspects or investor relations carry a weight that ranges between 20-30% (Botosan and Plumlee, 2002, p.30). Botosan and Plumlee (2002, p.30) argue that the weight attached to annual reports suggests that annual reports are viewed as one of the most important sources of corporate information

Fourthly, Botosan (1997, p.331) suggests that the annual report is a major corporate reporting document, and every other financial report is in some respect subsidiary or supplementary to it. Fifthly, practically only company annual reports were consistently available in *Perfect Information* where the annual reports were mainly collected from. Finally, using company annual reports is also in line with prior studies, which can facilitate direct comparison with their results (e.g., Yermack, 1996; Shabbir and Padget, 2005; Cheung *et al*., 2007).

ii) *Subjective Analysts' Rankings versus Researcher-Constructed Indices: Their Strengths and Weaknesses*

To date, the extant literature has employed two major ways of measuring internal corporate governance disclosures (Beattie *et al*., 2004, pp.207-211). The first approach involves the use of *subjective analysts' corporate governance quality disclosure rankings* based on analysts' perception (survey) of corporate governance disclosure quality of firms usually conducted by independent professional corporate governance research and ratings organisations, such as those of AIMR/AFAF, and S&P. The second approach, which is more popular, has been the use of *researcher-constructed quality indices* in which the amount of disclosure is directly measured via a disclosure vehicle, such as annual reports, and used as a proxy for disclosure quality (Beattie *et al*., 2004, p.207). Both approaches have some advantages and disadvantages.

Researcher-constructed quality indices have been criticised on several grounds. Firstly, unlike subjective analysts' rankings, which cover all types of disclosure media by firms,

[51]For brevity, these abbreviations will be referred to in this subsection. They stand for: The Association of Investment Management and Research (AIMR) (formerly the Financial Analysts Federation (AFAF)) headquartered in the US; Credit Lyonnais Securities Asia (CLSA) headquartered in Hong Kong; GovernanceMetric International (GMI) headquartered in the US; Horwath Corporate Governance Report (HCGR) headquartered in Australia; Institutional Shareholder Services (ISS) headquartered in the US; Securities and Exchange Commission (SEC) headquartered in the US; and Standard & Poor's (S&P) headquartered in the US.

including annual reports, interim reports, and investor relations, they are less comprehensive with regard to the number of disclosure media and items included in the index (Lang and Lundholm, 1993, p.247). Secondly, Hassan and Marston (2008, p.10) suggest that corporate governance ratings provided by leading financial analysts could be more reliable than those constructed by researchers because of their professional experience and superior specialist knowledge. Thirdly, researcher-constructed indices are vulnerable to researcher judgemental errors and bias (Core, 2001, p.452).

Fourthly, and as has been discussed in subsection 5.1.4, they are more labour intensive, and as such tend to be available for a smaller sample of firms, and of lower frequency than subjective analysts' indices (Hassan and Marston, 2008, pp.10, 16). Finally, Marston and Shrives (1991, p.198) suggest that using an existing index is advantageous in that direct comparisons with previous studies can easily be drawn.

Despite these limitations, this study adopts a researcher-constructed quality index for the following reasons. Firstly, analysts' corporate governance ratings are normally country specific (the majority of them rate only US firms), and as such the criteria used in rating firms may not be easily applicable to all countries due to differences in corporate governance systems and practices, as has been discussed in chapter two[52]. The CLSA (2000) subjective analysts' corporate governance rankings that have been used widely by prior studies, for example, are standardised for firms from all countries included. This implies that the rankings are unable to reflect institutional, cultural and contextual differences in corporate governance practices across different countries.

Secondly, most of the subjective analysts' corporate governance rankings have been either out of date or discontinued[53] (Hassan and Marston, 2008, p.10). In this case, there are no comparable corporate governance rankings or proxies for South African listed firms[54].

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[52]For example, AIMR/AFAF/ISS/SEC and HCGR provide corporate governance rankings only for US and Australian firms, respectively.

[53]AIMR/AFAF rankings were discontinued in 1997, while CLSA has not updated its emerging markets survey since 2001. According to Durnev and Kim (2005, p.1469), available anecdotal evidence suggests that CLSA stopped compiling the corporate governance scores because it lost a considerable number of corporate finance business it had with companies that were awarded the worst corporate governance scores.

[54]A considerable amount of effort was made to obtain subjective analysts' corporate governance rankings for South African listed firms from independent professional corporate governance research and rankings firms. Most of them do not rate South African firms. GMI was the only one that confirmed to ranking some of the largest South African firms, but could not release the scores because of '*confidential and commercial*' reasons. S&P and Moody's were also contacted for credit ratings for South African firms to be used as a proxy for corporate governance quality. S&P confirmed that they rate only the largest South African commercial banks, while Moody's does not rate South African firms, although both expressed willingness to rate South African listed firms of choice at commercial rates.

Thirdly, Botosan (1997, p.326-327) suggests that analysts' ratings tend to be limited to the largest firms that are heavily followed in an industry, and as such are unlikely to show sufficient cross-sectional variation in corporate governance disclosure levels. As such, using a researcher-constructed index ensured that sufficient cross-sectional variation was achieved in the sample, and thus avoided the possibility of sample bias that is normally associated with subjective analysts' corporate governance rankings. Fourthly, unlike subjective analysts' rankings, it has the advantage of ensuring that unique and pressing South African contextual corporate governance issues of relevance, such as employment equity and black economic empowerment, are incorporated into the methodology.

Fifthly, despite manually constructing the index, and unlike much of the existing corporate governance literature, the *SACGI* is relatively comprehensive with regard to the scope of coverage of internal corporate governance disclosure items (50 provisions), sample size (100 firms) and frequency (over five firm years). Sixthly, unlike subjective analysts' rankings that are based on mere analysts' perceptions of corporate governance disclosure quality, the *SACGI* is a direct measure of actual corporate governance disclosures in the sampled firms' annual reports, making it much more reliable and accurate (Lang and Lundholm, 1993, p.247).

Finally, subjective analysts' rankings has also been criticised for the potential biases that analysts bring to the corporate governance ratings (Beattie *et al*., 2004, p.210; Chen *et al*., 2009, p.286). Specifically, it has been suggested that as an opinion-based research, subjective analysts' rankings rely on circumstantial and subjective data (Hermes, 2005, p.1). Arguably, any research findings based on subjective rankings can be considered to be of little evidential value.

iii) The *SACGI: How the Internal Corporate Governance Provisions were Scored*

Following a well-established line of scoring corporate governance disclosures in annual reports (e.g., Gompers *et al*., 2003; Shabbir and Padget, 2005; Black *et al*., 2006a; Arcot and Bruno, 2007; Henry, 2008; and Morey *et al*., 2009; amongst others), a binary coding scheme is adopted. This method of scoring involves awarding a value of "1" if a particular internal corporate governance provision is disclosed in the annual report or "0" otherwise. All the corporate governance provisions included in the *SACGI* (*compliance-index*) are based on the corporate governance provisions of *King II*. It covers all six broad areas of

best corporate governance practices that listed firms are required to 'comply' or 'explain' in the case of non-compliance.

To capture the intensity of internal corporate governance practices, the six broad sections are further disaggregated into 50 provisions. Specifically, the scoring process involved manually reading each firm's annual report and awarding one point if a particular corporate governance provision is disclosed or zero if not. For each of the five firm years, the individual corporate governance provision by corporate governance provision scores for each of the 100 firms were then aggregated and expressed as a percentage of the total possible score of 50 to constitute an overall *compliance-index*, the *SACGI*. With this scoring scheme, a company's total score in a particular firm year can vary between zero (0%) to fifty (100%), with 0% indicating perfect non-compliance and 100% indicating complete compliance.

Appendix 2 shows the six broad sections and the various subsections that constitute the *SACGI*. The six subsections include: (1) boards and directors; (2) risk management; (3) internal audit; (4) integrated sustainability reporting (non-financial information); (5) accounting and auditing; and (6) compliance and enforcement. Appendix 2 further provides explicit definitions of the coding instruments and how the variables are measured.

The components of the *SACGI* are more comprehensive in relation to much of the prior literature, helping to tease out actual inherent differences in internal corporate governance quality among the sampled firms. For example, and as has been discussed in subsection 4.2 of chapter four, Shabbir and Padget (2005, pp.9-10) construct a binary *compliance-index* based on only 12 provisions from the '*board and directors'* section of the 1998 *UK Combined Code*, completely ignoring other sections, such as *accounting and auditing, internal audit, and risk management*. Similarly, Henry (2008, pp.918-921, 931) constructs a binary *composite-index* based on only 8 provisions from the 2003 *Australian Stock Exchange's Principles of Good Corporate Governance and Best Practice Recommendations*, arguing that the other sections may not be value relevant.

A limitation that can be observed from Appendix 2, though, is that the *SACGI* is not equally distributed across the six sections, with the '*board and directors'* section accounting for approximately 54% of the total 50 best corporate governance practices. However, it suggests that *King II* recognises corporate '*board and directors*' as an important part of the internal corporate governance structure, a view that is consistent with theory (Lipton and Lorsch, 1992; John and Senbet, 1998). Practically, the distribution of the variables across the six sections reflects the original composition of *King II* as a document.

iv) *Coding and Weighting Schemes: Their Strengths and Weaknesses*

There are two important methodological issues that need to be addressed when it comes to scoring corporate governance disclosures in corporate annual reports: *coding* and *weighting* schemes to be used.

With regard to the *coding* scheme, there are two main options that are open to researchers. The first option is to use a simple *binary* coding scheme, which measures the absence or presence of an item (0 or 1). The second choice is to use a complex *ordinal* coding scheme, which attempts to capture the degree of detail and specificity of the disclosed information by using a graduated scale ("*not limited to but frequently three levels – 0, 1 and 2"*) (Beattie *et al*., 2004, p.210). For example, if no information is disclosed on an item, a sample firm receives "0" point, if only qualitative information is disclosed, the firm gets "1" point, while if the disclosed information is quantified, the firm receives the maximum value of "2".

To begin with, both binary and ordinal coding schemes have their strengths and shortcomings. A major criticism of binary coding scheme is that it fails to allow the quality of specific corporate governance disclosures to be measured (Beattie *et al*., 2004, p.210). It also fails to reflect the relative impacts of different corporate governance provisions (Gompers *et al*., 2003, p.114). Despite these weaknesses, a binary rather than ordinal coding scheme is adopted for four main reasons.

Firstly, ordinal coding is appropriate when measuring voluntary disclosures in which reasonable differences in the degree of disclosures can be expected (e.g., Botosan, 1997; Hassan and Marston, 2008). As can be seen from Appendix 2, with the exceptions of the South African context specific issues of employment equity (*PEQ*), black economic empowerment (*BEE*), HIV/Aids (*HIV*), health and occupational safety (*PHS*), code of ethics (*DCE*), environmental practices (*PEP*), and corporate social investment (*CSI*) where some level of judgement is involved, the remaining provisions involve a straightforward present or absent disclosures.

For example, the board chairperson (*BCP*) is either independent ("1") or not ("0"), a firm has split the positions of chairperson and CEO (*DUAL1*) ("1") or not ("0"), and so on. This leaves no avenues to qualitatively discriminate among disclosure levels, such as meaningfully differentiating between firms that provide a quantification of the information disclosed or not, and thus using ordinal coding will be inappropriate. Appendix 3*a* contains a

spreadsheet of the first eleven coded corporate governance variables for the first six sampled firms [55] in alphabetical order. This is a sample that shows how carefully the corporate governance information collected from company annual reports were coded. Similar coding was undertaken for all the 500 firm-year observations.

Secondly, distinct from much of the existing literature, the coding instrument has been designed in such a way that it is inherently self-discriminating in order to tease out qualitative differences in corporate governance disclosures across firms. In this case, the existence of a nomination committee (*NCOM1*), for example, attracts only a point, and if it is well-composed (*COM2*), receives a point. Further, if the chairman of the nomination comittee is independent (*NCCP*), attracts another point, while if membership of the nomination committee (*DM1*) and individual members meeting attendance (*INCMMA*) are disclosed, attract a point each. This compels firms to comply with both the '*letter and spirit*' of the code rather than engage in mere box-ticking.

Thirdly, unlike ordinal coding, it requires no or very limited researcher judgement about the degree of specificity of internal corporate governance provisions disclosure levels (Gompers *et al*., 2003, p.144). This makes it relatively objective, simple and easy to replicate. It also has the advantage of minimising researcher bias, which enhances transparency and reliability of the constructed index (Milne and Adler, 1999, p.242). Finally, it has been demonstrated that 'quantity and quality' are positively correlated (Botosan, 1997, p.329; Beattie *et al*., 2004, p.210). This suggests that, on average, firms that disclose more tend to show higher quality attributes.

The second critical issue is whether to construct a *weighted* or an *unweighted* index (Barako *et al*., 2006b, p.8; Hassan and Marston, 2008, p.23). Similarly, weighted or unweighted indices have their own limitations and strengths. The use of an unweighted index has been criticised for its fundamental assumption that every internal corporate governance provision in the index is of equal importance, a view which is inconsistent with theory and practice (Barako *et al*., 2006a, p.115). However, in this study, an equally weighted index (the *SACGI*) is constructed due to the following reasons.

Firstly, there is a general lack of a rigorously developed theoretical basis on which weights could be accurately assigned to the various corporate governance provisions (Black *et al*., 2006a, p.375). In this case, the use of an unweighted index avoids the necessity of making

[55]The six firms are Amalgamated Appliance Holdings Ltd (AAH), Anglogold Ashanti Ltd (AAS), AECI Ltd (ACI), Advtech Ltd (ADV), Allied Electronics Corporation Ltd (AEC), and Afrgri Ltd (AFI).

subjective value judgements as to the relative importance or efficacy of each corporate governance provision (Owusu-Ansah, 1998, p.609). Secondly, an associated advantage of an unweighted index is that it does not involve arbitrarily or subjectively assigning weights. This obviates creating a situation whereby the constructed index is unnecessarily dominated by or biased towards a particular set of corporate governance provisions.

Thirdly, rigorously established empirical evidence from the accounting disclosure literature suggests that the use of weighted and unweighted indices tend to give the same results, especially where the number of corporate governance provisions is relatively large (e.g., Robbins and Austin, 1986; Chow and Wong-Boren, 1987; Beattie *et al*., 2004; and Barako *et al*., 2006a and b, amongst others). Finally, in line with much of the prior corporate governance-performance relationship literature (Gompers *et al*., 2003; Black *et al*., 2006a; Henry, 2008; and Morey *et al*., 2009, amongst others), an unweighted index is constructed, which will make it easier for direct comparisons to be drawn with their results.

v) *Addressing the Reliability and Validity of the Constructed Index, the 'SACGI'*

There are two additional set of critical methodological issues that need to be addressed when it comes to using researcher-constructed quality composite indices (Marston and Shrives, 1991, pp.197-199). These are the *reliability* and *validity* of the constructed *compliance-index*, the *SACGI*.

Generally, reliability refers to "*the extent to which a measuring procedure yields the same results on repeated trials*" *(*Hassan and Marston, 2008, p.27). When it comes to *compliance-index* construction, there are two reliability issues that must be addressed: stability and reproducibility. The constructed index is reliable if it can be easily replicated by the same researcher over time (*stability*), as well as by another researcher (*reproducibility*), when coding the same content with higher levels of accuracy (Beattie *et al*., 2004, p.214; Beattie and Thompson, 2007, p.139).

With regard to *stability*, each annual report was coded twice over a 14-month period – with the first round of coding taking 8 months (from February 2007 to September 2007), and the second round lasting a period of 6 months (from October 2007 to March 2008). The second round of coding, which was meant to cross-check the accuracy of the first round coding, involved weekly meetings with supervisors where the coded materials, the coding instrument, and categories were critically discussed. Informed by these critical comments, and as suggested by Milne and Adler (1999, p.239) and Beattie and Thompson (2007, p.139), the

coding rules and categories were made much more explicit, refined, and in some cases, such as board diversity on the basis of ethnicity and gender (*BDIVE1, BDIVG1*), the coding instrument was expanded. Also, mistakes or inconsistencies identified in the first round of coding were corrected during the second round of coding[56].

In connection with *reproducibility*, Beattie and Thompson (2007, p.140) suggest that prior studies are generally "s*ilent or vague*" as to the specific parts of the annual report that were examined. This issue is addressed in two ways in this study. Firstly, even though the study focuses exclusively on internal corporate governance, all parts of the annual report, including the integrated sustainability report were analysed. For eight[57] companies which had separate annual and integrated sustainability reports, all parts of the two documents were separately analysed. With the exception of disclosure of company risks (*DCR*), which was normally found in the chairman and/or the CEO statement of the annual reports, most of the corporate governance disclosures (approximately 90 to 96%) appeared in the corporate governance reports. However, most of the corporate governance disclosures were frequently repeated[58] throughout the annual reports.

Also, for each company, the whole of its five-year period annual reports were consecutively coded. This was found to be a very useful approach because: (a) on average, the structure of presenting data in the annual reports did not differ substantially across firms from one year to another; and (b) it ensured that experience and learning gained from reading previous year's annual report were easily transferred to the coding of subsequent year's annual report. Secondly, for each corporate governance provision and annual report, a detailed spreadsheet containing the page number(s) of what was coded, where it was coded from, and where applicable, why it was coded in that way, was developed to accompany the coding scheme. This makes the constructed index easy and simple to replicate. Appendix 3*b* contains the spreadsheet of five coded corporate governance variables with data sources and page

[56]The mistakes or inconsistencies identified between the first and second rounds of coding were not many. The levels of stability between the two rounds of coding were generally high, both with respect to the individual corporate governance variables and the overall *SACGI* scores. For example, the stability between the first round *SACGI* and the second round *SACGI* is .8948. For the individual corporate governance provisions, the stability between the first and second round of coding ranges between .7614 in the case of board composition (COM1) to .9056 with respect to the disclosure of individual directors' attendance of board meetings (IDMA). Beattie and Thompson (2007, p.220) suggest that the cut-off level for acceptability ranges from .70 to .80. Thus, the levels of stability achieved were generally highly satisfactory.

[57]These companies are African and Overseas Enterprises Ltd (AOE), Anglo Platinum Ltd (APL), Bidvest Group Ltd (BGR), Gijima AST Group Ltd (GAG), Gold Fields Ltd (GFI), Harmony Gold Mining Company Ltd (HGM), Sabmiller Plc (SAB), and Sasol Ltd (SAS).

[58]Beattie and Thompson (2007, p.141) suggest that repetition is a communication strategy that management may adopt to achieve emphasis and reinforcement. It may also signal the importance that a firm's management attaches to particular messages.

numbers for the first six sampled firms in alphabetical order. This is a sample that shows how carefully the corporate governance data were collected from the company annual reports. Similar detailed spreadsheet was prepared for all the 500 firm-year observations.

The second critical issue that is addressed is the *validity* of the constructed index. Hassan and Marston (2008, p.30) define validity as "*the extent to which any measuring instrument measures what it is intended to measure*". This includes investigating how well the coding instrument performs against others (*criterion validity*), seeking subjective judgements from experts and non-experts as to how well the instrument measures what it is intended to measure (*content validity*), as well as the generalisability of the results (*external and construct validity*).

Firstly, constructive criticisms and suggestions by supervisors, leading academics and experienced researchers at numerous *Doctoral Colloquia*[59] helped in significantly improving criterion and content validity of the coding instrument. Secondly, with the exception of the South African context specific issues, and as suggested by Beattie *et al*. (2004, p.220), construct and external validity is achieved through the use of conventional internal corporate governance provisions covered in *King II* that are rigorously grounded in empirical research[60]. These conventional corporate governance issues have become widely accepted and have extensively been used in previous corporate governance studies that construct composite indices (Shabbir and Padget, 2005; Beiner *et al*., 2006; Cheung *et al*., 2007; Henry, 2008; and Morey *et al*., 2009, amongst others). Finally, the sample construction process was structured in such a way that sufficient variations between large and small firms, as well as the various industries were achieved in the sample. This may also help in improving the generalisation of the results.

vi) *General Sampling and Index Construction Limitations*

All research methods often suffer from some limitations, and with regard to the sample and index construction, five potential limitations can be identified. Firstly, even though a sample of 100 firms is relatively large, the generalisation of the results would have been much improved if all 169 companies with full data could have been used. However, and as has been

[59]This work was presented at the Institute of Chartered Accountants Scotland (ICAS) conference for young researchers in 2007, the Scottish Doctoral Colloquium 2007, 2008 and 2009, as well as the British Accounting Association's Doctoral colloquium 2007 and 2008 at different stages of its development, where useful comments were received from leading academics and experienced researchers.

[60]In preparing King II, the King Committee referred to 120 legal documents, international corporate governance codes, theoretical, and empirical papers in addition to 49 useful websites on corporate governance.

pointed out, due the expensive and labour-intensive nature of manual coding, this could not be done.

Secondly, other sources of corporate information media, such as websites, interim reports, and company management (via a survey or meetings) could have been additionally consulted to at least cross-check the collected data rather than relying solely on annual reports. It is admitted that it is possible for a firm to have a particular corporate governance structure, which it might not have disclosed in its annual report that other methods, like face-to-face interviews would have revealed. Similarly, time and financial constraints did not permit this to be done.

Thirdly, the reliability and validity of the results could have been improved if their robustness to a weighted index has been examined by either subjectively applying weights or contacting independent professional expert(s) to apply weights to the various corporate governance provisions. Similarly, and as suggested by Milne and Adler (1999) and Beattie *et al*. (2004), the reliability and validity of the constructed index *(SACGI)* could have been improved if the data had been coded by different individuals so that inter-coder consistency, accuracy and reliability could have been measured.

Fourthly, the index may not be able to capture informal or personal interactions (interpersonal relationships) among board members, and between the board and management, employees, analysts or investors, for example, that may also affect corporate governance standards and financial performance. Finally, despite the rigorous reliability and validity processes that were meticulously followed, every coding scheme involves some amount of inherent subjectivity (Beattie *et al*., 2004, p.233). This is due to differences in cognitive abilities, experience, and conception of reality, which need to be acknowledged and taken into account when interpreting the results.

The next subsection will describe the control variables used in the study. It will also develop their theoretical associations with internal corporate governance structures and firm financial performance.

5.2.2.2 ***The Control/Omitted Variables***

Any study that omits relevant economic variable(s) that predict(s) financial performance and corporate governance could result in wrong conclusions (Black *et al*., 2006a, p.367; Chenhall and Moers, 2007a, p.180). Also, in theory and as discussed in *subsection* 5.2.1, the use of a comprehensive set of control variables has the potential of: (a) preventing firms

from theoretically reaching "*equilibrium" or "optimal differences endogeneity*"[61], which is a situation whereby different firms optimally choose different corporate governance structures (Black *et al*., 2006a, pp.379, 384); and (b) preventing omitted variable(s) endogeneity (Larker and Rusticus, 2008, pp.3, 26). As a result, to reduce potential omitted variable bias and endogeneity, a number of control variables, including growth prospects *(SGRWOTH),* innovative potential *(CAPEX),* capital structure *(GEAR),* firm size *(LNTA),* foreign/dual-listing *(DUALIST),* audit firm size (BIG4), industry *(INDUST),* and year dummies *(YD)* are included in the regression in addition to the *SACGI*, the main variable of focus in this model.

Section 6 of Appendix 4 contains all the control variables used in this study and how they were operationalised. The rationale for selecting these variables is also explained below. Further, it should be noted that while these control variables have been chosen on the basis of theory and prior evidence, like every other positive accounting research, they are inevitably limited to the extent that they may not be exhaustive (e.g., Chenhall and Moers, 2007a and b; van Lent, 2007; Larker and Rusticus, 2008). 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, p.187)[62].

i) *Growth Prospects (SGROWTH) and Innovative Potential (CAPEX)*

Firstly, firms with higher investment opportunities tend to grow relatively faster (Durnev and Kim, 2005, p.1473). Theoretically, faster growing firms may receive higher valuation, as they are expected to have better future performance (Klapper and Love, 2004, p.712). Also, firms with greater growth opportunities will need to raise external capital, and may need to adopt better corporate governance to attract capital and reduce its cost (Beiner *et al*., 2006, p.254). Following prior literature (e.g., Gompers *et al*., 2003; Drobetz *et al*., 2004;

[61] According to Black *et al.* (2006a) if sample firms were to be in equilibrium with respect to their corporate governance choices or variables as discussed in subsection 5.2.1, then the introduction of control or omitted variables that are statistically significant could potentially prevent the structural equation from reaching equilibrium. This also implies that the introduction of control variables could potentially result in model misspecifications.

[62] For example, and as will be discussed further in subsection 5.3.1, managers may adopt good corporate governance rules just to signal their quality to investors (Black *et al*., 2006a, p.384). However, it is the signal that is sent to investors rather than the good corporate governance practices that affect firm value. For instance, firms may appoint independent non-executive directors to signal 'managers' intent' of treating shareholders fairly, even though in practice independent non-executive directors may not substantially affect the behaviour of managers. In this case, corporate governance may be highly correlated with firm value, but with no actual causal association. Instead, corporate governance will proxy for an omitted variable 'managers' intent', but 'managers' intent' cannot be included in the structural model because it is difficult to measure.

Cui *et al*., 2008; Henry, 2008), a positive relationship between financial performance and growth opportunities, as proxied by year-on-year sales growth (*SGROWTH*) is hypothesised.

Secondly, firms with higher investment in innovation and technology should in theory gain competitive advantage through launching new processes, products, and services (Jermias, 2007, p.828; Brown *et al*., 2009, p.151). This allows them to receive premium prices and generate higher long-term performance by creating quasi-monopolies and barriers to entry for rivals (Jermias, 2007, p.829). By contrast, innovation is capital intensive, with potential future returns (Weir *et al*., 2002, p.589), and as such may impact negatively on current performance. Also, firms with greater investment in technology and innovation (intangibles) will need to adopt a stronger governance regime (stricter monitoring) as it is easier to steal intangibles ("*soft*") assets than fixed ("*hard*") assets (Durnev and Kim, 2005, p.1474). Following prior research (e.g., Durnev and Kim, 2005; Black *et al*., 2006b; Brown *et al*., 2009), investment opportunities and innovative potential of firms, as proxied by the ratio of capital expenditure to total assets (*CAPEX*) is expected to be negatively correlated with performance.

ii) *Capital Structure (GEAR)*

By relaxing Modigliani and Miller's (1958) irrelevance of capital structure assumptions, an extensive theoretical and empirical literature has emerged, which strongly suggests that in the real world, a firm's capital structure can have an impact on its value or profitability (e.g., Modigliani and Miller, 1963; Myers, 1977, 1984; and Rajan and Zingales, 1995, amongst others). Specifically, and consistent with Rajan and Zingales (1995), Bevan and Danbolt (2002, 2004) report a significant negative relationship between gearing and profitability using a sample of UK firms. This can be explained from two major theoretical perspectives: tax and agency[63].

[63]It is acknowledged that capital structure can also be explained by the perking order theory developed by Myers and Majluf (1984). The theory suggests that companies tend to prioritise their sources of financing, normally starting with *internal* to *external* sources. In this case, firms will usually consider internal sources of financing, such as retained earnings as their first option. One reason for this preference is that it costs (e.g., issue cost) less to raise internal funding. This means that all internal sources of financing will be used up before external funding will be sought. When it comes to external financing, companies will normally issue the safest security first. In this regard, the issue of debt will be preferred to equity. According to Myers and Majluf (1984), this is because: (1) it costs less to issue debt than equity; and (2) debt issue sends a positive signal to the stock market, whilst equity issue sends a negative signal to the stock market. Equity will then be issued as a last resort or when it does no longer make economic sense to issue additional debt. Perking order theory can, therefore, also explain why there may still be a negative relationship between profitability and gearing, even if earnings before interest, tax, depreciation and amortization (EBITDA) is used as a proxy for accounting profitability to be able to take advantage of potential tax savings.

From a capital structure perspective, interest payments are tax deductible (Modigliani and Miller, 1963, p.438), and as such, all else equal, highly geared firms should be able to generate higher financial performance. By contrast, the costs of financial distress, such as bankruptcy and credit risks that are usually associated with higher levels of gearing, may inhibit a firm's ability to pursue profitable investment opportunities (Myers, 1977, p.148). In fact, recent evidence by Brav (2009) suggests that the use of private debt (private equity) by private firms to finance growth in the UK is more costly when compared with public firms that rely on public equity.

From an agency perspective, Jensen (1986, p.323) suggests that higher levels of gearing can increase performance by reducing agency conflicts associated with having 'free cash flows' by opportunistic managers. Also, the use of debt financing can improve performance by inducing extra monitoring by lenders (Agrawal and Knoeber, 1996, p.377). In line with prior corporate governance studies (e.g., Demsetz and Villalonga, 2001; Weir *et al*., 2002; Klapper and Love, 2004; Bhagat and Bolton, 2008), capital structure is controlled for. Given the mixed theoretical and empirical evidence, however, it is hypothesised that gearing (*GEAR*), as proxied by the ratio of total debt to equity will be significantly correlated with financial performance, without specifying the direction of the coefficient.

iii) *Firm Size (LNTA)*

As has been discussed in subsection 5.1.4, due to the costs implications of compliance, complexity of operations, analysts following and public scrutiny, higher political and regulatory costs, as well as greater agency problems, firm size is likely to be positively correlated with better corporate governance regime (e.g., Jensen, 1986; Himmelberg *et al*., 1999; Beiner *et al*., 2006). This means that larger firms may receive higher market valuation and/or enjoy lower cost of external capital (Botosan, 1997). By contrast, Klapper and Love (2004, p.713) suggest that smaller firms tend to have better growth opportunities, and as such they will have greater need for external financing. This means that smaller firms may have to maintain a better corporate governance regime to be able to attract capital at a cheaper cost and increase financial profitability. Faster growth is also more likely to be positively correlated with financial performance, especially Tobin's *Q* (Black *et al*., 2006a, p.401). This is because Tobin's Q reflects future growth opportunities available to a firm (Young *et al*., 2008, p.1116).

Empirically, the relationship between performance and size is ambiguous (Himmelberg *et al*., 1999, p.364). Agrawal and Knoeber (1996) and Durnev and Kim (2005) report a negative relationship between firm size and Tobin's *Q*, while Haniffa and Hudaib (2006) find that return on assets (*ROA*) is positively correlated with firm size. Therefore, it is hypothesised that there is a negative relationship between firm size, as proxied by naturally logged total assets (*LNTA*) and Tobin's *Q*, but a positive relationship with *ROA*.

iv) *Foreign-Listing/Dual-listing (DUALLIST)*

As has been pointed out in subsection 5.1.4, firms that maintain secondary listing on foreign stock markets are more likely to have better corporate governance structures, because they are more likely to be subjected to additional accounting, governance and disclosure requirements of the foreign stock exchanges that they are cross-listed to (Haniffa and Cooke, 2002, p.329; Black *et al*., 2006a, p.403). Also, firms that seek foreign-listing are more likely to have higher growth opportunities and increased need for external capital. Together, cross-listed firms can be expected to want to signal their quality through the adoption of better governance, disclosure and transparency (Klapper and Love, 2004, p.713).

Lower agency costs that are usually associated with better corporate governance means that dual-listed firms are more likely to be exposed to increased and more diverse sources of financing (Doidge *et al*., 2009, p.425; Melvin and Valero, 2009, p.66). Better access to external finance also indicates that cross-listed firms may be better able to exploit growth opportunities than their non cross-listed counterparts. The prior empirical evidence is in line with theoretical expectations. Opinion-based surveys conducted by CLSA (2000) and Deutsche Bank (2002) in emerging markets, including South Africa suggest that dual-listed firms tend to have better corporate governance standards than their non-dualisted counterparts. Similarly, using a cross-country sample that include 8 South African listed firms, Charitou and Louca (2009) report that firms that are cross-listed to the US generate significantly higher operating returns than their non-dual-listed counterparts.

Overall, this suggests that cross-listed firms may generate higher financial returns than their domestic listed counterparts. Thus, it is hypothesised that there is a positive relationship between dual-listing (*DUALLIST*), as proxied by a dummy variable that takes a value of one if

a firm is cross-listed to a UK/US [64] stock exchange or zero otherwise, and financial performance.

v) *Audit Firm Size (BIG4)*

As will be explained further in section 6.2 of chapter six, the prior auditing literature suggests that the size of the audit firm matters (e.g., Shockley, 1981; Palmrose, 1986; Sori *et al*., 2006). Specifically, it suggests that the levels of auditor independence and audit quality are positively associated with audit firm size (e.g., Pearson, 1980; DeAngelo, 1981). A major implication of this is that, on average, larger audit firms may be better able to resist management pressure in conflict situations. This is mainly due to the reputation, resources (i.e., financial, human, information and knowledge), and independence advantages that larger audit firms enjoy over their smaller couterparts (Sori *et al*., 2006, p.2; Young *et al*., 2008, p.1108). As has been explained in chapter three, an important feature of the South African corporate governance system is that King II recognises external auditors as one of the key stakeholders in ensuring that firms voluntarily comply with the corporate governance provisions of the Code.

However, the literature also suggests that audit fees are positively associated with audit firm size (e.g., Palmrose, 1986; Gul, 1991). This means that larger firms are more likely to make use of the services of larger audit firms as they can be expected to better afford the associated higher costs of auditing (higher auditing fees). This implies that, on average, larger firms are more likely to have better corporate governance standards and receive higher market valuation (Q-ratio) than their smaller counterparts.

By contrast, since it costs more to hire a larger audit firm (e.g., Pearson, 1980; Sori *et al*., 2006), it is likely to impact negatively on a firm's accounting returns (ROA). As a result, it is hypothesised that audit firm size (BIG4) will be positively associated with the Q-ratio, but negatively related to ROA. Audit firm size will be measured by a dummy variable that takes a value of one if a firm is audited by any of the big four auditing firms (i.e., Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers), zero otherwise.

[64]This is because there is evidence which suggests that the UK and US have stronger corporate governance and investor protection regimes (La Porta *et al*., 1998; Klapper and Love, 2004, p.713; Black *et al*., 2006, p.403). As will be discussed further in subsection 6.1.2 of chapter six, in total 26 of the sampled firms (26%) are cross-listed. Seven firms are cross-listed to both the UK and US, whilst 8 and 11 firms are cross-listed to the UK and US alone, respectively.

vi) *Industry Dummies (INDUST)*

As has been discussed in subsection 5.1.4, due to differences in the complexity of operations, lines of business, capital structure and ownership levels, corporate governance practices may vary between industries (Haniffa and Cooke, 2002, p.328; Lim *et al*., 2007, p.568). Also, economic and global developments may impact differently on different industries. For example, while increases in the prices of petroleum products may have a positive impact on the financial performance of *Oil and Gas* firms, the profitability of *manufacturing*/*industrial* firms, which rely heavily on energy for production, may be negatively affected.

As has also been discussed in subsection 5.1.4, opinion-based surveys conducted by CLSA (2000) and Deutsche Bank (2002) in emerging markets, including South Africa, indicate that corporate governance standards vary across different industries. Thus, to capture these potential unobserved industry-level heterogeneity, and in line with prior corporate governance studies (e.g., Klapper and Love, 2004; Beiner *et al*., 2006; Black *et al*., 2006a; and Henry, 2008, amongst others), industry dummies, including basic materials *(BMAT)*, consumer goods *(CGOODS)*, consumer services *(CSERVICES)*, industrials *(INDUSTRIALS)*, and technology *(TECHN)* are included as controls for these five[65] major industries. To avoid the dummy-variable trap, only four industry dummies are included in estimating any single equation.

vii) *Year Dummies (YD)*

Finally, evidence suggests that corporate governance practices across firms change over time (Shabbir and Padget, 2005, p.10; Henry, 2008, p.933). For example, using a sample of 122 FTSE 350 UK listed firms from 2000 to 2003, Shabbir and Padget (2005) report a positive relationship between compliance with corporate governance rules (governance quality) and time (year). This positive relationship has recently been supported by the findings of Henry (2008) in a sample of 116 Australian listed firms from 1992 to 2002. Secondly, different economic states and environment may impact on a firm's profitability differently. On average, firms tend to perform financially better during periods of economic boom, for example, than when there is economic recession. The current global economic downturn offers a classic anecdotal example (e.g., Turner Review, 2009; Walker Review, 2009).

[65]As has been explained in subsection 5.1.1, the industrial groups were obtained directly from the Information Department of the JSE.

Similarly, changes in the macro environment, such as government regulations, tax policies and technology may impact differently on financial performance and corporate governance structures over time. This means firm financial performance, as proxied by Tobin's Q and ROA are more likely to vary over times. Finally, prior corporate governance studies have also controlled for year (e.g., Shabbir and Padget, 2005; Guest, 2008; and Henry, 2008, amongst others), which can facilitate drawing direct comparisons with their results. Thus, to control for possible unobserved firm level heterogeneity over the five-year period, five dummies (one each for the five years of 2002 to 2006 inclusive) are also included in the model. Similarly, to avoid the dummy-variable trap, only four year dummies are included in estimating any single equation.

The next subsection will describe the proxies for financial performance (dependent variables) used in estimating the *compliance-index* model. It will also develop their theoretical associations with internal corporate governance structures, as well as their potential strengths and limitations.

5.2.2.3 ***The Dependent Variable: Firm Financial Performance (FP)***

The dependent variable in this study is firm financial performance (*FP*). Distinct from much of the prior literature (e.g., Agrawal and Knoeber, 1996; Yermack, 1996; Beiner *et al*., 2006; Black *et al*., 2006a; and Henry, 2008, amongst others), but in line with Gompers *et al*. (2003), Klapper and Love (2004), Haniffa and Hudaib (2006), and Guest (2009), two measurements, namely return on assets (*ROA*) and Tobin's *Q* (*Q-ratio*) are used as proxies for accounting and market based measures of financial performance, respectively. Section 1 of Appendix 4 contains further information on the two measures used, as proxies for financial performance, as well as detailed information on how they were measured.

The decision to use the two measures of financial performance is underpinned by two main reasons. Firstly, prior evidence suggests that insiders and outsiders value corporate governance differently (Black *et al*., 2006a, p.370). 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 (*Q-ratio*) represents financial valuation of corporate governance structures by investors (outsiders). Secondly, and as will be discussed further below, each measure has its own strengths and weaknesses with no consensus within the literature on a particular measure as being the '*best*' proxy for financial performance (Haniffa and Hudaib 2006, p.1045). Hence,

using the two measures represent an attempt to examine the robustness of the results against both accounting and market based measures of financial performance.

ROA is defined in this study as the book value of operating profit at the end of a financial year divided by the book value of total assets at the end of a financial year (Yermack, 1996, p.192; Beiner *et al*., 2006, p.260; Fich and Shivdasani, 2006, p.703). It measures how efficiently and effectively a firm manages its operations and uses its assets to generate profits (Ross *et al*., 1998, p.62). On average, higher *ROA* suggests effective and efficient use of a firm's assets in maximising the value of its shareholders' investments by management (i.e., internal corporate governance structures). *ROA* is an effective measure of performance because it eliminates the problem of size which makes it easier for comparisons to be drawn across firms (Lev and Sunder, 1979, p.187). Demsetz and Lehn (1985, p.1160) suggest that as accounting profit, *RO*A may reflect year-to-year fluctuations in underlying business conditions better than stock market rates of return. This is because stock market rates of return reflect expected future developments that may mask current fluctuations in business conditions. It has also been used widely by prior corporate governance studies (e.g., Shrader *et al*., 1997; Gompers *et al*., 2003; Klapper and Love, 2004; Core *et al*., 2006; Haniffa and Hudaib, 2006; and Cui *et al*. 2008, amongst others).

However, the use of *ROA* has been criticised on several grounds. Firstly, *ROA* is a historical measure, but past profits can be a poor reflection of true future profitability (Ross *et al*., 2002, p.36). A closely related weakness is that because *ROA* is based on historical cost accounting, it is unable to directly reflect current changes in valuation by the equity markets (Krivogorsky, 2006, p.185). Secondly, through changes in accounting policies, methods and techniques, *ROA* is suggested to be susceptible to all kinds of managerial manipulations (Alexander *et al*., 2007, p.867; Mangena and Tauringana, 2008, p.14). A third criticism is that as an accounting-based measure of profitability, ROA ignores risk, but it would be wrong to conclude, for example, that two firms with identical current profits are equally profitable if the risk level of one is higher than the other (Ross *et al*., 2002, p.36).

Finally, *ROA* has been criticised for its inability to reflect industry 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, p.867). However, the impact of these weaknesses have been minimised through the inclusion of extensive control

variables, which takes into account how time, credit risks, industry, and size, for example, affect a firm's financial performance.

Tobin's *Q* (*Q-ratio)* is defined in this study as the market value of equity plus the book value of total assets minus the book value of equity divided by the book value of total assets (Chung and Pruitt, 1994, p.70; Beiner *et al*., 2006, p.260). 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 involved in computing Tobin's (1969) original *Q-ratio*, such as costly computational effort and data requirements, this study follows Chung and Pruitt's (1994, p.70)[66] approximation of *Q*, which has been demonstrated to be 96.6% correlated with the original *Q-ratio*. It is normally referred to as the ratio of the market value of the outstanding financial claims on a firm to the current replacement cost of its assets (Lewellen and Bradrinath, 1997, p.78). As has been explained above, due to data limitations, book value of assets will be used, as a proxy for current replacement cost of company assets. Generally, the Q-ratio measures the effectiveness with which a firm's management is able to use its assets to generate value for shareholders. Like *ROA*, a higher *Q-ratio* suggests greater effectiveness 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, p.1045).

The concept of Tobin's *Q* has great intuitive appeal and is of immense theoretical and practical relevance (Chung and Pruitt, 1994, p.70). As such, it has extensively been used, as a proxy for financial performance not only in the corporate governance literature (e.g., Morck *et al*., 1988; Yermack, 1996; Agrawal and Knoeber, 1996; Gompers *et al*., 2003; and Henry, 2008, amongst others), but also within the larger corporate finance literature (e.g., Chung and Pruitt, 1994; Perfect and Wiles, 1994; and Lewellen and Badrinath, 1997, amongst others). This makes it a very advantageous performance proxy because its empirical validity is grounded in a rigorously established empirical literature. However, and like any other performance proxy, it has received a barrage of criticisms. Unlike other performance proxies like the ROA, however, most of its criticisms concern how it is constructed and potential measurement errors (e.g., Klock *et al*., 1991; Chung and Pruitt, 1994).

[66]Other approximations for Tobin's *Q* have been developed. Lindenberg and Ross (1981), Lang and Litzenberger (1989), Perfect and Wiles (1994), and Lewellen and Badrinath (1997), amongst others, have provided some form of approximation for Tobin's original *Q*. However, Chung and Pruitt's (1994) approximation is adopted because it does not only correlate highly (96.6%) with the original *Q*, but also is simple and less costly in terms of computational effort and the intensity of the data required.

A major line of criticism of Tobin's *Q* is that it is too expensive in terms of computational effort and data requirements (Chung and Pruitt, 1994, p.70). As a results, and as has been explained above, many approximations have been developed, most of which propose the use of book values of assets, equity, and debt (e.g., Chung and Pruitt, 1994; Perfect and Wiles, 1994; Lewellen and Badrinath, 1997, amongst others). This leads to a related criticism that it is a '*quasi-historical'* measure, in that its computation involves the use of accounting variables prepared under historical cost accounting (Shabbir and Padget, 2005, p.8). Thus, *Q* also appears to suffer from most of the weaknesses of conventional accounting-based measures of performance. These weaknesses include being prone to managerial manipulation and creative accounting, as has been discussed above. However, with the gradual move towards fair value accounting (Alexander *et al*., 2007, pp.115-117) or even a mixture of historical cost and mark-to-market accounting (Danbolt and Rees, 2008, p.272), it can be argued that this criticism will increasingly be less valid.

Another criticism of *Q* is that its application may result in spurious correlations with corporate governance mechanisms, in that higher *Q* may not necessarily suggest that a firm's management has a better ability in using its assets in generating value. This is because the differences between market and book values can be due to other factors, such as undervaluation of tangible and financial assets recognised on the balance sheet (Beattie and Thomson, 2007, p.130). It can also be due to the value of intangibles[67] that have not been captured on the balance sheet, as well as market prices that do not accurately reflect intrinsic values of assets (Beattie and Thomson, 2007, p.130). Like ROA, Q-ratio may not be able to also capture how informal human relationships that may exist among board members, for example, affect financial performance.

Similarly, as a market based performance measure, changes in *Q* may not be an accurate reflection of underlying economic fundamentals of a firm, but may be driven by investors' sentiments, speculation and rumour-mongering, which are meant to satisfy their short-term parochial economic interests (Henwood, 1997, p.145). An anecdotal example of this is the widely reported current financial crisis – the so-called '*credit crunch'* within the global financial markets in which share prices of some firms, especially financial companies, are 'alleged' to have been driven down by investor speculation (e.g., Daglish, 2009; Gorton,

[67]For example, despite being an important corporate asset, human resource, is often completely not captured on corporate balance sheets.

2009; Turner Review, 2009; Walker Review, 2009). This resulted in a temporary ban of 'short-selling' in financial stocks by investors in the UK and the US.

Therefore, to minimise the potential impact of these limitations on the results, and as has been discussed above, extensive lists of control variables are included in the model. It may also justify the use of both accounting and market based measures of performance, allowing each measure to complement the weaknesses of the other.

Following prior research, and assuming that all relations are linear, the first ordinary least squares (*OLS*) regression equation to be estimated in the system[68] is:

$$FP_{it} = \alpha_0 + \beta_1 SACGI_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (1)$$

where:

FINANCIAL PERFORMANCE (*FP*)	- stands for the two variables, namely return on assets (*ROA*) and Tobin's Q (*Q-ratio*) as proxies for accounting and market-based financial performance measures, respectively.
α_0	- Constant term.
SACGI	- A constructed South African Corporate Governance Index.
CONTROLS	- Control variables for sales growth (*SGROWTH*), capital expenditure (*CAPEX*), capital structure (*GEAR*), firm size (*LNTA*), foreign-listing (*DUALIST*), audit firm size (BIG4), five industry dummies of basic materials (*BMAT*), consumer goods (*CGOODS*), consumer services (*CSERVICES*), industrials (*INDUSTRIALS*), and technology (*TECHN*), and five year dummies for 2002 to 2006 inclusive. To avoid the dummy variable trap, the consumer goods industry, and year 2003 are excluded in estimating the equation.
ε	- Error term.

To test the robustness of the results, general *OLS* misspecifications tests, including tests for hetereoscedasticity, non-linearity, and multicollinearity, are conducted on a year-by-

[68]It is called a system because in subsection 5.3.2, to test for robustness of the results, as well as for the existence of possible interdependence and interactions among alternative corporate governance mechanisms, a system of four additional equations will be developed and estimated simultaneously along with equation (1). Also, as a robustness check, a lagged performance-corporate governance relationship (i.e., equations 1 and 2) will be re-estimated as has been specified in equations (10) and (11) in subsection 5.3.1.4 below. The results that will be discussed in chapters eight and nine based on un-lagged and lagged corporate governance-financial performance structure, respectively, will be essentially the same.

year basis, as well as for the pooled panel to ensure that the constant variable (α_0) and the slope coefficients ($\beta_1 + \beta_2 +,...,+\beta_n$), are both best linear unbiased and consistent estimators. As will be discussed further in section 7.2 of chapter seven, these tests include correlation analyses, examination of studentised residuals, Durbin-Watson, tolerance, variance inflation factor, eigenvalues, and conditions indices, amongst others.

In the following subsection, the independent, control, and dependent variables used in estimating the *equilibrium-variable* model will be described. It will also describe how they were measured.

5.2.3 **The Equilibrium-Variable Model**

As has been discussed above, the *equilibrium-variable* model is the second equation in the system that is estimated. The independent variables in the *equilibrium-variable* model will be described below.

5.2.3.1 ***The Independent Variables: Individual Corporate Governance Structures***

The explanatory variables in this model consist of individual internal corporate governance structures operating as single alternative corporate governance mechanisms in isolation. Appendix 4 contains all the independent variables used in this model. It also defines each variable and shows how they were measured. These include: board size (*BSIZE*); role or CEO duality (*DUAL*); the proportion of non-executive directors (*NEDs*); the frequency of board meetings (*FBMs*); board diversity (*BDIV*); the presence of three key internal board committees, namely audit committee (*ACOM*), remuneration committee (*RCOM*), and nomination committee (*NCOM*); director shareownership (*DTON*); director shareownerhip squared ($DTON^2$); and director shareownership cubed ($DTON^3$).

These corporate board structure and ownership variables are measured in accordance with prior research. Board size (*BSIZE*) is measured as the total number of directors serving on a company's board at the end of its financial year (e.g., Yermack, 1996; Mangena and Tauringana, 2008). The proportion of non-executive directors (*NEDs*) is measured as the total number of non-executive directors divided by the total number of directors (e.g., Weir *et al*., 2002; Haniffa and Hudaib, 2006). Director shareownership (*DTON*) is measured by the total number of ordinary shares held by all directors divided by the total number of ordinary shares (e.g., Ho and Williams, 2003; Mangena and Chamisa, 2008).

Role or CEO duality (*DUAL*) is a dummy variable that takes the value of "1" if the positions of company chairman and CEO are combined, otherwise "0" (e.g., Rechner and Dalton, 1991; Kiel and Nicholson, 2003). Board diversity (*BDIV*) is also a binary variable which takes the value of "1" if a company's board is constituted by at least a white person, a black person, a man and a woman, otherwise zero (e.g., Carter ., 2003; Rose, 2007). Similarly and consistent with prior literature (e.g., Laing and Weir, 1999; Mangena and Chamisa, 2008; Henry, 2008), audit committee (*ACOM*), remuneration committee (*RCOM*), and nomination committee (*NCOM*) are measured as dummy variables that take a value of "1" if any of the three committees is established at the end a firm's financial year, otherwise zero.

5.2.3.2 ***The Control/Omitted Variables***

The control variables included in this model are the same as the eight described in subsection 5.2.2.2, and are included in equation (1) as well.

5.2.3.3 ***The Dependent Variable: Financial Performance***

Similarly, the proxies for financial performance are the same as those described in subsection 5.2.2.3, namely return on assets (*ROA*) and Tobin's *Q* (*Q-ratio*), which are estimated in equation (1) as well. Similarly, following prior studies and assuming that all relations are linear, the second equation to be estimated in the system is:

$$\begin{aligned} FP_{it} = {} & \alpha_0 + \beta_1 BSIZE_{it} + \beta_2 NEDs_{it} + \beta_3 DUAL_{it} + \beta_4 BDIV_{it} \\ & + \beta_5 FBMs_{it} + \beta_6 ACOM_{it} + \beta_7 NCOM_{it} \\ & + \beta_8 RCOM_{it} + \beta_9 DTON_{it} + \beta_{10} DTON_{it}^2 \\ & + \beta_{11} DTON_{it}^3 + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \end{aligned} \qquad (2)$$

where:

FINANCIAL PERFORMANCE (*FP*)	- stands for the two variables, namely return on assets (*ROA*) and Tobin's Q (*Q-ratio*) as proxies for accounting and market-based financial performance measures, respectively.
α_0	- Constant term.
BSIZE	- Board size.
NEDs	- Proportion of non-executive directors.
DUAL	- Role or CEO duality.

BDIV - Board diversity.

FBMs - Frequency of board meetings

ACOM - Presence of audit committee.

NCOM - Presence of nomination committee.

RCOM - Presence of remuneration committee.

DTON - Percentage of shareownership by executive and non-executive directors.

$DTON^2$ - Director shareownership squared

$DTON^3$ - Director shareownership cubed

CONTROLS - Control variables for sales growth (*SGROWTH*), capital expenditure (*CAPEX*), capital structure (*GEAR*), firm size (*LNTA*), foreign-listing (*DUALIST*), audit firm size, (BIG4), five industry dummies of basic materials (*BMAT*), consumer goods (*CGOODS*), consumer services (*CSERVICES*), industrials (*INDUSTRIALS*), & technology (*TECHN*) and five year dummies for 2002 to 2006 inclusive. To avoid the dummy variable trap, the consumer goods industry, and year 2003 are excluded in estimating the equation.

ε - Error term.

Similarly, to test the robustness of the results, general *OLS* misspecifications tests, including tests for hetereoscedasticity, non-linearity, and multicollinearity, will be conducted on a year-by-year basis, as well as for the pooled panel to ensure that the constant variable (α_0) and the slope coefficients ($\beta_1 + \beta_2 +,...,+\beta_n$), are both best linear unbiased and consistent estimators. Also, and as will be discussed further in section 7.2 of chapter seven, these tests include correlation analyses, examination of studentised residuals, Durbin-Watson, tolerance, variance inflation factor, eigenvalues, and conditions indices, amongst others.

The next section will describe the various sensitivity analyses conducted in this study. Specifically, it will discuss the problem of endogeneity and examines the robustness of the empirical results to the potential existence of such endogeneity problems, as well as the presence of alternative internal corporate governance mechanisms and their possible interdependence or interaction effects on financial performance.

5.3 **ROBUSTNESS TESTS/SENSITIVITY ANALYSES**

Apart from general *OLS* misspecifications checks as have been indicated above, a series of sensitivity analyses will be conducted to test the robustness of the results. These will include checking the robustness of the results against endogeneity, the existence of alternative governance mechanisms, and the estimation of a changes model.

5.3.1 **The Problem of Endogeneity**

The econometric problems of endogeneity have recently gained a heightened sense of awareness within the positive accounting literature (e.g., Börsch-Supan, and Köke, 2002; Chenhall and Moers, 2007a and b; van Lent, 2007; Larcker and Rusticus, 2007, 2008). A variable is said to be *endogenous* if it is determined within the context of the model, whilst 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, p.177). The endogeneity problem, therefore, arises when a variable originally assumed to be exogenous within a model is actually endogenous. Assume (3) as follows:

$$Y_t = \alpha_0 + \beta X_t + \varepsilon_t \qquad (3)$$

Statistically, the variable X_t is said to be endogenously related to the variable Y_t if X_t is correlated with the structural error term, ε_t, that is., Cov(X_t, ε_t) $\neq 0$ (Wooldridge 2002, p.50). Briefly, there are four major causes of endogeneity: omitted variables, simultaneity or reverse causation, measurement errors, and equilibrium conditions (Wooldridge, 2002, pp.50-51; Chenhall and Moers, 2007a, pp.180-183; Larcker and Rusticus, 2008, p.2).

Firstly, and as has been pointed out in subsection 5.2.2.2, omitted variables endogeneity arises if a relevant control variable is, for example, omitted from equation (1) due to data unavailability (Wooldridge, 2002, p.50). Black *et al*. (2006, p.384) 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, p.51). 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 on external financing (Beiner *et al.*, 2006, p.250).

Thirdly, measurement error endogeneity occurs if a key independent variable is imperfectly measured (Larcker and Rusticus, 2005, p.3). For example, measurement error endogeneity will arise if the *SACGI*, which is meant to capture the quality of firms' internal corporate governance structures, is inaccurately measured. Finally, and as has been discussed in subsections 5.2.1 and 5.2.2.2, equilibrium conditions endogeneity questions whether financial performance can be explained by corporate governance given the assumption that all firms attempt to operate under equilibrium conditions (Chenhall and Moers, 2007a, p.183). That is, if firms optimally choose corporate governance structures, then it will be inappropriate to examine the relationship between performance and corporate governance, as it is evident that there will be no association between them. This is because every firm is expected to be in equilibrium.

It has been suggested that endogeneity[69] caused by any of the above factors can limit the validity of empirical models estimated (Chenhall and Moers, 2007a, p.173). In econometric terms, if X_t is correlated with ε_t, then *OLS* estimates of the coefficient, β_t will be biased and inconsistent, which can result in wrong interpretations of the findings (Larcker and Rusticus, 2008, p.10).

Apart from potential problems of omitted variables, simultaneity or reverse causation, measurement errors, and equilibrium conditions, there are additional reasons that call for a consideration to be given to endogeneity in this study. First, there is the need to respond to the general call for positive accounting researchers to explicitly address potential problems that may be posed by endogeneity (e.g., Börsch-Supan, and Köke, 2002; Chenhall and Moers, 2007a and b). Second, and as has been discussed in chapter four, the current study relies on multiple and sometimes conflicting theoretical perspectives. Arguably, this may increase the possibility that endogeneity problems will be introduced into the structural equations.

Third, and as it was evident in chapter four, much of the prior corporate governance literature has produced mixed results. However, substantial number of past studies do not address any concerns that the potential presence of endogeneity poses. Only a small number of

[69]It should be noted that there are sharp disagreements within the positive accounting literature as to whether endogeneity is a problem worth considering in accounting research (Chenhall and Moers, 2007a and b; Larcker and Rusticus, 2007; van Lent, 2007). Specifically, van Lent (2007, pp.197-198, 203) suggests that in practice there is little that can be done about endogeneity even if it exists, and as such researchers should be bold enough to set aside any concerns of endogeneity, especially when addressing important research questions.

prior corporate governance studies have explicitly addressed concerns raised by the potential presence of endogeneity (e.g., Agrawal and Knoeber, 1996; Himmelberg *et al*., 1999; Durnev and Kim, 2005; Beiner *et al*., 2006; Black *et al*., 2006a; Henry, 2008). As has been discussed in subsection 4.2 of chapter four, this raises doubts with respect to the reliability of the results of a considerable number of prior corporate governance studies.

In addressing the potential problems that endogeneity poses, this study specifically follows the five-step procedure suggested by Larcker and Rusticus (2008, pp.25-31, 59) for positive accounting researchers. As has been pointed out above, and also in chapter four, Larcker and Rusticus (2008, pp.25-26, 59) suggest that the first step to addressing any concerns of endogeneity is to use rigorous accounting theory and logic to specify endogenous and exogenous variables in the structural equation. Additionally, and as has been discussed above, the researcher needs to explicitly point out some of the reasons why endogeneity may potentially be a problem.

The second step involves exploring the various alternative ways of solving the problem, including following standard 'textbook' econometric and non-econometric solutions (Larcker and Rusticus, 2008, p.25). With regard to non-econometric solutions, this study uses a five-year panel data. With both time series and cross-sectional properties, statistical theory suggests that panel data may help in reducing problems posed by endogeneity (Börsch-Supan and Köke, 2002, p.301; Larcker and Rusticus, 2007, p.208). Secondly, and as has been discussed in subsection 5.2.2.2, extensive number of control variables have been included in the models to mitigate against possible omitted variable endogeneity problems.

With regard to following standard 'textbook' econometric solutions, an instrumental variable (*IV*) model will be estimated to deal with potential omitted variable and measurement error endogeneity problems. As suggested by Larcker and Rusticus (2008), two-stage least squares (*2SLS*) and a lagged structure will also be estimated to address endogeneity problems that may be posed by omitted variable, simultaneity, and equilibrium conditions. In addition, a changes model will be estimated to account for possible firm-level heterogeneity over time.

The procedures for executing these solutions will be set out below. Specifically, the *IV* estimation method will be dealt with first, followed by the *2SLS*, the lagged structure, and finally the changes model. These estimations will concentrate purely on the *compliance-index* model (equation 1), which models the *SACGI*. This is because the *SACGI* is the main variable of focus. It is also more comprehensive as it incorporates almost all the variables included in the alternative *equilibrium-variable* model (equation 2).

5.3.1.1 ***Durbin-Wu-Hausman Exogeneity Test***

The third step as suggested by Larcker and Rusticus (2008) involves conducting an exogeneity test on the key explanatory variable to ascertain whether it is actually endogenous or not. In this case, following prior corporate governance studies (Shabbir and Padget, 2005, p.22; Beiner *et al*., 2006, p.267), the popular *Durbin-Wu-Hausman* exogeneity test is followed. The test involves a two step procedure. Firstly, the constructed index (that is, the *SACGI*) assumed to be endogenous in equation 1, will first be run on the control variables, and the resulting residuals from the regression will be saved (*R-SACGI*). Secondly, firm financial performance will be regressed on the *SACGI*, the control variables, as well as the saved residuals (*R-SACGI)* from the first stage regression. If the coefficient on the saved residuals (*R-SACGI*) is significant, then it can be concluded that the constructed index (the *SACGI*) is endogenously related to firm financial performance. This will also suggest that instrumental variable (*IV*) and two-stage least squares (*2SLS*) models are appropriate methodology to be used for the estimations.

5.3.1.2 ***Instrumental Variable (IV) Estimation and the SACGI***

As has been discussed in subsection 5.3.1, if the *SACGI* is endogenously related to firm financial performance, it could be that an essential control variable(s) has(have) been omitted from equation 1 or that the *SACGI* itself has been imperfectly measured. As suggested by Larcker and Rusticus (2008), these two potential endogeneity problems can be addressed by estimating an instrumental variable (*IV*) model. The *IV* technique involves a two-stage procedure. The first stage involves finding a proxy variable (*an instrument*) for the *SACGI*, which correlates highly with the *SACGI*, but which is uncorrelated with the structural error term (ε_t). In the second stage estimation, the *SACGI* is replaced by the proxy variable (*the instrument)*. In this case, the coefficient on the *SACGI* will be both consistent and unbiased.

However, there are some shortcomings that need to be noted when using the *IV* estimation. First, in practice, it is extremely difficult to find an instrument that satisfies the above requirements (Chenhall and Moers, 2007, p.188; van Lent, 2007, p.198). Secondly, even if an instrument is found that correlates highly with the *SACGI*, confirming its validity and relevance is also a problem (Durnev and Kim, 2005, p.1483; van Lent, 2007; Larcker and Rusticus, 2008).

As a result, this study follows the procedure suggested by Beiner *et al*. (2006, p.267). The procedure involves two stages. In the first stage, the *SACGI*, will be run on the control variables, as well as four other variables, including board size (*BSIZE*), the presence of a corporate governance committee (*CGCOM*), block shareholding (*BLKHDNG*) and institutional shareholding (*INSTHDNG*) deemed to be exogenously related to the *SACGI*. The resulting predicted values for the *SACGI* (*P-SACGI*) will be saved. In the second stage, the *SACGI* will be replaced with the *P-SACGI* (*as an instrument for the SACGI*) in equation 1. Equation 1 will then be re-estimated in such a way that financial performance will be run on the *P-SACGI* and the control variables. This should generate consistent and unbiased coefficient for the *SACGI*.

In theory, and as has been discussed in subsection 5.2.1, larger firms are better placed to comply with corporate governance rules than smaller ones. As such, it is hypothesised that board size (*BSIZE*) and audit firm size (*BIG4*), as proxied by a dummy variable that takes a value of one if a firm is audited by any of the big four auditing firms (i.e., Ernst & Young, KPMG, PricewaterhouseCoopers, and Deloitte & Touche), otherwise zero, will be positively correlated with the *SACGI*.

Also, it is expected that firms that set up corporate governance committees to specially monitor the firms' compliance with corporate governance requirements are more likely to have improved internal corporate governance structures than those that do not. As a result, it is hypothesised that the presence of a corporate governance committee (*CGCOM*), as proxied by a dummy variable that takes a value of one if a firm has a corporate governance committee, zero otherwise, will be positively correlated with the *SACGI*. As has been discussed in subsection 5.2.2.2, firms with cross-listings or foreign-listings are more likely to have better corporate governance structures. This is because cross-listed firms are more likely to be subjected to additional listing and governance requirements. Cross-listed firms are also usually larger in size. Thus, foreign-listing (*DUALLIST*) is expected to be positively correlated with the *SACGI*.

Finally, it is hypothesised that block shareholding (*BLKSHDNG*), as measured by the total number of ordinary shares held by shareholders with at least 5% holdings divided by total number of ordinary shares, will be positively correlated with the *SACGI*. Similarly, it is hypothesised that institutional shareholding (*INSTHDNG*), as measured by the total number of ordinary shares held by all financial and non-financial institutions scaled by the total number of ordinary shares, will be positively correlated with the *SACGI*. This is because block and

institutional shareholders can exert influence on the internal corporate governance structures, such as board structure and composition (Shabbir and Padget, 2005, p.22).

As a fourth step suggested by Larcker and Rusticus (2008), it will be demonstrated in section 8.3 of chapter nine that the instrument, the *P-SACGI*, is not only highly correlated (relevant) with the original *SACGI*, but also uncorrelated (valid) with the structural error term (ε_t). Finally, Larcker and Rusticus (2008) suggest that a comparison regarding the magnitude and signs of the coefficients of the *OLS* and *IV* estimations be made. This will also be done in chapter nine

5.3.1.3 *Two-Stage Least Squares (2SLS), Alternative Corporate Governance Mechanisms and Possible Interdependences/Interactions*

As has been discussed in subsection 5.3.1, omitted variables, simultaneity and equilibrium conditions can also introduce endogeneity problems into the structural equation. As has been discussed in subsection 5.2.2.1, most of the prior corporate governance studies have examined the wealth effects of corporate governance structures in isolation. However, the existence of alternative corporate governance mechanisms and the possibility for the existence of interdependences, for example, may lead to omitted variable bias and spurious correlations (Agrawal and Knoeber, 1996, p.378; Beiner *et al*., 2006, p.252). Therefore, following Agrawal and Knoeber (1996) and Beiner *et al*. (2006), an extensive set of alternative internal corporate governance mechanisms, which are not included in the *compliance-index*, will be simultaneously estimated along with the broad *compliance-index*, the *SACGI*. The alternative corporate governance mechanisms are: (1) leverage (*LEV*); (2) institutional shareholding (*INSTHDNG*); (3) block shareholding (*BLKSHDNG*); and (4) board size (*BSIZE*).

According to Agrawal and Knoeber (1996, pp.378-379) and Beiner *et al*. (2006, p.252), this allows for possible interdependence or interactions between these internal corporate governance structures, by specifying a system of simultaneous equations, where each one of the five internal corporate governance structures is the dependent variable in one of the five equations. This means that the choice of any one of the internal corporate govermance mechanisms may depend upon the choices of all the other mechanisms, in addition to all the control variables in the system (Agrawal and Knoeber, 1996, p.382; Beiner *et al*. (2006, p.252).

To examine the relationship between financial performance and internal corporate governance structures, a sixth equation which models financial performance (*ROA* and *Q-ratio*)

as the dependent variable, will be estimated as part of the system. Following Agrawal and Knoeber (1996, p.385) and Beiner *et al*. (2006, p.253), financial performance (*ROA* and *Q-ratio*) will be included in equations 4 to 8 below as an explanatory variable which allows for possible interdependences or interactions (that is, it allows each of the internal corporate governance structures to affect financial performance, *ROA/Q-ratio*), but also ensures that financial performance affects the choice of each internal corporate governance structure.

As suggested by Larcker and Rusticus (2008), in order to control for omitted variable(s), simultaneity, and equilibrium conditions, equations 4 to 9 that have been specified below will be estimated using two-stage least squares (*2SLS*). Specifically, and as will be discussed further in chapter nine, in the first stage, each of equations 4 to 8 will be estimated along with their respective control variables, and the resulting predicted values (i.e., instrumented or predicted part of the corporate governance structures) will be saved. In the second stage, each corporate governance mechanism will be replaced with its saved predicted instrument from the first stage estimations in equation 9. Equation 9 will subsequently be estimated along with the eight control variables.

i) *The South African Corporate Governance Index (the SACGI)*

As has been described in subsection 5.2.2.1, the *SACGI* is a *compliance-index* that incorporates 50 internal corporate governance structures. However, it excludes the other four alternative internal corporate governance mechanisms. Following Beiner *et al*. (2006, p.253), it is assumed that the *SACGI* is determined by the choices of the other four alternative internal corporate governance mechanisms and the exogenous variables, including growth potential (*SGROWTH*), innovative potential (*CAPEX*), capital structure (*GEAR*), firm size (*LNTA*), audit firm size (*BIG4*), presence of a corporate governance committee (*CGCOM*), dual-listing (*DUALLST*), five industry dummies (*INDUST*) and five year dummies (*YD*). The basis for the selection of the control variables has already been described and justified in subsections 5.2.2.2 and 5.3.1.2. Therefore, assuming that all relations are linear and labelling firm financial performance, as proxied by *ROA and Q-RATIO* simply as *FP*, and all nine exogenous variables simply as *EXOGENOUS*, the first equation in the system to be estimated is:

$$SACGI_{it} = \alpha_0 + \beta_1 BSIZE_{it} + \beta_2 BLKSHDNG_{it} + \beta_3 INSTHDNG_{it} + \beta_4 LEV_{it} + \beta_5 FP_{it} + \sum_{i=1}^{n} \beta_i EXOGENOUS_{it} + \varepsilon_{it} \quad (4)$$

ii) *Leverage (LEV)*

According to Jensen (1986, p.323; 1993, p.848) debt can serve as an alternative or a substitute corporate governance mechanism by reducing the agency costs of 'free cash flows' through the discouragement of overinvestment of free cash flows in non-positive NPV projects. This means that the use of debt has the advantage of motivating managers and their companies to increase efficiency and enhance their ability to survive (Jensen, 1986, p.324). The use of debt can also increase the value of the firm by offering managers the chance to signal their willingness to distribute free cash flows, and to be subjected to additional monitoring by lenders (Beiner *et al*., 2006, p.256). As has been discussed in subsection 5.2.2.2, from a capital structure perspective, interest payments are tax deductible (Modigliani and Miller, 1963, p.438), and as such, all else equal, highly leveraged firms should be able to generate higher financial performance. Therefore, the dependent variable of the second equation in the system is leverage (*LEV*), as measured by the percentage of total debt to total assets (Weir *et al*., 2002, p.591).

Following Jensen (1986, p.324), larger firms with regular cash flows will use more debt than smaller ones. Consistent with Rajan and Zingales (1995), Bevan and Danbolt (2002, 2004) report that debt is positively correlated with size, but negatively associated with profitability using a sample of UK firms. Hence, it is hypothesised that *LEV* will be positively correlated with firm size (*LNTA*), but negatively related to financial performance (*FP*). Also, debt increases credit risks and bankruptcy costs (Jensen, 1986, p.324), which may inhibit a firm's ability to pursue innovative, growth and profitable investment opportunities (Myers, 1977, p.148). Thus, it is expected that growth potential (*SGROWTH*), and innovative potential (*CAPEX*) will have a negative association with leverage (*LEV*). Debt usage is also expected to differ across industries (*INDUST*) and over time (*YD*). Labelling all five exogenous variables simply as *EXOGENOUS*, the second equation in the system to be estimated is:

$$LEV_{it} = \alpha_0 + \beta_1 BSIZE_{it} + \beta_2 BLKSHDNG_{it} + \beta_3 INSTHDNG_{it} + \beta_4 SACGI_{it} + \beta_5 FP_{it} + \sum_{i=1}^{n} \beta_i EXOGENOUS_{it} + \varepsilon_{it} \quad (5)$$

iii) *Block Shareholding (BLKSHDNG)*

In theory, concentrated ownership can act as a substitute for better internal corporate governance structures by minimising information asymmetry, free-riding, and agency costs (e.g., Jensen and Meckling, 1976; Urzúal, 2009). Similarly, increased monitoring by block

shareholders, in addition to serving as a credible takeover threat, may also serve as an incentive for managers to pursue value maximising strategies (Beiner *et al*., 2006, p.255; Young *et al*., 2008, p.1108). Also, unlike small shareholders, block shareholders have big stakes in companies such that it pays for them to spend private resources to monitor management to increase firm value (*FP*), and thereby benefiting minority investors (Andres, 2008, p.432).

By contrast, block shareholders can also connive with management to engage in 'tunnelling' or expropriate firm assets, resulting in substantial costs to minority shareholders (Haniffa and Hudaib, 2006, p.1044; Urzúal, 2009, p.245). This is more likely to be a problem in South Africa where corporate ownership has historically been dominated by a small set of very large companies (mining finance houses) built around highly complicated cross-holdings and tall pyramids (Barr *et al*., 1995, p.18). Hence, the third dependent variable in the system of equations is block shareholding, as measured by the total number of ordinary shares held by shareholders with at least a 5% holding each divided by the total number of ordinary shares.

The empirical evidence between block shareholding and financial performance (*FP*) is mixed. While Demsetz and Lehn (1985) and Agrawal and Knoeber (1996) find no relationship between ownership by block shareholders and performance, Haniffa and Hudaib (2006) document a statistically significant positive and negative associations between block shareholding and, *ROA* and *Q-ratio*, respectively. Similarly, Brockman and Yan, (2009) report that block shareholding is positively associated with informed trading and decreases volatility in a firm's stock returns.

All else equal, it costs more to buy a proportion of shares in larger firms than in smaller firms, and so a negative relationship is expected between block shareholding (*BLKSHDNG*) and firm size (*LNTA*). Beiner *et al*. (2006, p.255) suggest that it is more attractive to hold shares in a firm with greater growth and innovative potential, and so it is expected that growth (*SGROWTH*) and innovative (*CAPEX*) potential will be positively associated with block shareholding. Also, gearing (*GEAR*), as measured by the ratio of debt to equity is expected to correlate negatively with block shareholding as firms with concentrated ownership are expected to use less debt. Block shareholding is also expected to differ across industries (*INDUST*) and over time (*YD*). Now, labelling all six exogenous variables simply as *EXOGENOUS*, the third equation to be estimated in the system is:

$$BLKSHDNG_{it} = \alpha_0 + \beta_1 BSIZE_{it} + \beta_2 LEV_{it} + \beta_3 INSTHDNG_{it} + \beta_4 SACGI_{it} + \beta_5 FP_{it} + \sum_{i=1}^{n} \beta_i EXOGENOUS_{it} + \varepsilon_{it} \quad (6)$$

iv) *Institutional Shareholding (INSTHDNG)*

Due to their relative financial clout, reputation, knowledge and information advantages, institutional shareholders can impact positively on internal corporate governance structures and financial performance (*FP*) by exerting their influence on board structures, composition, and functioning (Shabbir and Padget, 2005, p.22; Young *et al*., 2008, p.1108). Within the South African context, institutional shareholding is more likely to be a relevant factor because through the use of pyramidical structures, institutional shareholding is intrinsically pervasive (Barr *et al*., 1995, p.18).

Empirically, McConnell and Servaes (1990) document a positive relationship between institutional shareholding and financial performance. Similarly, Yan and Zhang (2009) report that institutional ownership is positively correlated with future stock returns. Also, anecdotal evidence suggests that large institutional shareholders like the California Public Employees' Retirement System (CalPERS) have helped in improving internal corporate governance structures through activism in the US and elsewhere (Shabbir and Padget, 2005, p.22). Hence, the fourth dependent variable in the system of equations is institutional shareholding (*INSTHDNG*), as measured by the total number of ordinary shares held by both financial and non-financial institutions scaled by the total number of ordinary shares.

Since it is more attractive to hold shares in larger firms with greater growth and innovative potential (Agrawal and Knoeber, 1996, p.383), it is expected that growth (*SGROWTH*) and innovative (*CAPEX*) potential will be positively associated with institutional shareholding. Improved internal corporate governance disclosure is positively associated with institutional shareholding (Core, 2001, p.446), and so it is expected that the presence of a corporate governance committee (*CGCOM*) will be positively associated with institutional shareholding. Also, institutional shareholding is expected to differ across industries (*INDUST*) and over time (*YD*). Hence, referring to all five exogenous variables simply as *EXOGENOUS*, the fourth equation to be estimated in the system is:

$$INSTHDNG_{it} = \alpha_0 + \beta_1 BSIZE_{it} + \beta_2 LEV + \beta_3 BLKSHDNG_{it} + \beta_4 SACGI_{it} + \beta_5 FP_{it} + \sum_{i=1}^{n} \beta_i EXOGENOUS_{it} + \varepsilon_{it} \quad (7)$$

v) *Board Size*

As has been discussed in section 4.2 of chapter four, board size (*BSIZE*) can have a positive or negative impact on firm financial performance (*FP*). From agency and resource dependence perspectives, larger boards are associated with increased monitoring and greater opportunities to secure critical business resources (Haniffa and Hudaib, 2006, p.1038). By contrast, organisational theory suggests that larger boards are associated with greater free-riding and slower decision-making (Lipton and Lorsch, 1992, p.67). The empirical evidence is ambiguous. Yermack (1996) and Guest (2009) separately report a negative association between board size and performance, while Beiner *et al*. (2006) document that board size is positively correlated with financial performance. Therefore, the fifth dependent variable in the system of equations is board size (*BSIZE*).

As has been discussed in subsections 5.2.2.2 and 5.3.1.2, it is expected that firm size (*LNTA*), foreign-listing or dual-listing (*DUALLIST*), audit firm size (*BIG4*), gearing (*GEAR*) and the presence of a corporate governance committee (*CGCOM*) will be positively associated with board size. Smaller firms have greater growth prospects and innovative potential, and so it is hypothesised that innovative (*CAPEX*) and growth (*SGROWTH*) potential will be negatively correlated with board size. Now, referring to all nine exogenous variables simply as *EXOGENOUS*, the fifth equation to be estimated in the system is:

$$BSIZE_{it} = \alpha_0 + \beta_1 BLKSHDNG_{it} + \beta_2 LEV_{it} + \beta_3 INSTHDNG_{it} + \beta_4 SACGI_{it} + \beta_5 FP_{it} + \sum_{i=1}^{n} \beta_i EXOGENOUS_{it} + \varepsilon_{it} \quad (8)$$

vi) *Firm Financial Performance (FP)*

Finally, to examine the relationship between financial performance and the internal corporate governance structures, including the four alternative mechanisms, the dependent variable in the last equation in the system is financial performance (*FP – ROA and Q-ratio*). All the eight control variables included in *equation 1*, and described in subsection 5.2.2.2 are also included, and labelled simply as *CONTROLS*. Therefore, the final equation to be estimated in the system is:

$$FP_{it} = \alpha_0 + \beta_1 BSIZE_{it} + \beta_2 LEV_{it} + \beta_3 INSTHDNG_{it} + \beta_4 SACGI_{it} + \beta_5 BLKSHDNG_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (9)$$

Following Agrawal and Knoeber (1996, p.385) and Beiner *et al*. (2006, p.263), equation (9) will be estimated along with equations (4) to (8) as a system of simultaneous equations using two-stage least squares (*2SLS*). Specifically, in the first stage, each of equations 4 to 8 specified above will be estimated along with their respective control variables. The resulting predicted values (i.e., instrumented or predicted part of each corporate governance structure) will be saved. In the second stage, each corporate governance mechanism will be replaced with its saved predicted instrument from the first stage estimations in equation 9 above. Equation 9 will subsequently be estimated along with the eight control variables.

This procedure as described above considers financial performance (*FP*) as endogenous along with the five alternative internal corporate governance structures, which allows each of the corporate governance mechanisms to affect *FP*, but also allows *FP* to affect the choice of each internal corporate governance structure. As suggested by Larcker and Rusticus (2008), a comparison of the *2SLS* estimates with the *OLS* estimates of equation (9) will be made to permit a direct assessment of the differences that arise from the possible existence of any endogeneity problems.

There are two major conditions that need to be satisfied when using *2SLS* before the system can be identified: the order-condition (*a necessary condition*) and the rank-condition (a *sufficient condition*) (Brooks, 2002, p.307; Chenhall and Moers, 2007a, p.189). The system of equations consists of 9 exogenous variables [firm size (*LNTA*), sales growth (*SGROWH*), capital expenditure (*CAPEX*), capital structure (*GEAR*), audit firm size (*BIG4*), dual-listing (*DUALLIST*), the presence of a corporate governance committee (*CGCOM*), industry dummies (*INDUST*), and year dummies (*YD*)] and six endogenous variables [(financial performance (*FP*), leverage (*LEV*), the *SACGI*, block shareholding (*BLKHDNG*), institutional shareholding (*INSTHDNG*), and board size (*BSIZE*)]. The order-condition for identifying a system states that the number of exogenous variables excluded from an equation must be greater or equal to the number of endogenous variables included in the equation minus one (Beiner *et al*., 2006, p.263; Chenhall and Moers, 2007a, p.189). This means that at least five of the exogenous variables must be excluded from any single equation to identify the system.

However, and in line with Beiner *et al*. (2006), as well as suggestions of Chenhall and Moers (2007a and b), equations (4) to (9) are independently developed based on theory, logic and data availability without excessive regard to satisfying the order-condition. All the six

equations in the system are over-identified (have more than four exogenous variables), which is acceptable in econometric terms (Brooks, 2002, p.314; Shabbir and Padget, 2005, p.24; Beiner *et al*., 2006, p.263). The rank condition additionally requires that at least one of the exogenous variables excluded should have a non-zero coefficient (Chenhall and Moers, 2007a, p.189). As will be discussed in chapter eight, none of the exogenous variables has a zero coefficient.

Like any other research methodology, the *2SLS* technique may also suffer from some limitations that need to be acknowledged. Firstly, while the separation of variables into endogenous and exogenous has been done based on theory and logic as have been suggested by Chenhall and Moers (2007a and b) and Larcker and Rusticus (2007, 2008), it may be limited to some extent by the arbitrariness of the classification process. It has been suggested that it may be possible for the structural equations to be sensitive to system specifications (Beiner *et al*., 2006, p.267). Also, it does not mean that all potential endogeneity problems have been completely eliminated, as it is impossible to achieve that in practice (Chenhall and Moers, 2007a, p192; van Lent, 2007, p.198). However, and as suggested by Larcker and Rusticus (2008), the potential existence of endogeneity has been explicitly acknowledged with an explicit attempt to minimise its potential impact on the results.

5.3.1.4 ***Lagged Structure and Changes Model***

Theory and evidence suggests that there is a time lag in the corporate governance-performance relationship in which this year's corporate governance structures may be associated with next year's performance (Vefeas, 1999a; Haniffa and Hudaib, 2006). This is because board decisions may have gestation period within which their full benefits may be materialised. It may also be possible for firms with better current financial performance to improve their internal corporate governance structures in a subsequent year in order to continue to attract external financing, as well as receive higher market valuation.

Following prior studies (e.g., Weir *et al*., 2002; Haniffa and Hudaib, 2006), endogeneity problems that may be caused by potential time lags between the institution of internal corporate governance structures and financial performance are controlled for by re-estimating equations 1 and 2, with one year lagged structure as equations (10) and (11), respectively:

$$FP_{it} = \alpha_0 + \beta_1 SACGI_{it-1} + \sum_{i=1}^{n} \beta_i CONTROLS_{it-1} + \varepsilon_{it-1} \qquad (10)$$

$$FP_{it} = \alpha_0 + \beta_1 BSIZE_{it-1} + \beta_2 NEDs_{it-1} + \beta_3 DUAL_{it-1} + \beta_4 BDIV_{it-1} + \beta_5 FBMs_{it-1} + \beta_6 ACOM_{it-1} + \beta_7 NCOM_{it-1} + \beta_8 RCOM_{it-1} + \beta_9 DTON_{it-1} + \beta_{10} DTON_{it-1}^{2} + \beta_{11} DTON_{it-1}^{3} \sum_{i=1}^{n} \beta_i CONTROLS_{it-1} + \varepsilon_{it-1} \quad (11)$$

In a similar vein, if better-governed firms tend to be associated with higher financial performance than their poorly-governed counterparts, then it can be argued that such a relationship will even be better captured by using changes in internal corporate governance structures and financial performance over time to estimate the relationship rather than using their actual levels. Also, even if a statistically significant relationship is found between corporate governance and financial performance, potential omitted variables bias and endogeneity problems can make it difficult to ascertain whether better corporate governance indeed causes better financial performance. Arguably, using changes rather than actual levels of corporate governance and financial performance may effectively also control for any un-observable or missing firm-specific variables.

Further, prior literature suggests that corporate governance standards change over time among firms (e.g., Bauer *et al*., 2004; Shabbir and Padget, 2005; Henry, 2008). If good corporate governance is indeed associated with higher financial performance, then it can also be argued that an increase (decrease) in the standard of a firm's corporate governance should be associated with a similar increase (decrease) in its financial performance. Therefore, to test the robustness of the results to a changes model, the *compliance-index* model (equation 1)[70] is re-estimated using changes rather than actual levels of the financial performance, corporate governance, and the control variables as:

$$\Delta FP_{it} = \alpha_0 + \beta_1 \Delta SACGI_{it} + \sum_{i=1}^{n} \beta_i \Delta CONTROLS_{it} + \varepsilon_{it} \quad (12)$$

where: ΔFP stands for changes in firm financial performance, $\Delta SACGI$ refers to changes in the *SACGI*, while $\Delta CONTROLS$ refers to changes in all the control variables, excluding the dummy variables of industry, year, audit firm size, and foreign or dual-listing.

[70]Since the equilibrium-variable model (equation 2) contains a lot of dummy variables, it will be inappropriate to estimate a similar model or relationship.

5.4 **CHAPTER SUMMARY**

To recap, this chapter has focused on the research design. It sought to achieve four main closely related objectives. Firstly, it attempted to describe the data and research methodology. In this regard, the data, its sources, the sample selection procedure and the main research methodology used in this study were comprehensively described. Two main types of data are used in this study: internal corporate governance and financial performance variables. These were mainly collected from *Perfect Information and DataStream*, respectively. Out of the 402 listed firms on the JSE Ltd as at 31/12/2006, the full data required was obtained for a sample of 169. One hundred (100) firms were then stratify sampled over five consecutive years (2002 to 2006 inclusive), resulting in a total of 500 firm-year observations.

The review also identified the *compliance-index and* the *equilibrium-variable* models as the two main competing research methodologies within the extant literature. It is contended that while the two competing models are ostensibly based on contrasting theoretical assumptions with their respective potential limitations, prior literature has mainly used one or the other based purely on some theoretical arguments without explicitly testing the empirical validity of such theoretical propositions. As a result, the two models are explicitly described and estimated for the first time within the same study and context to offer new insights into their comparative theoretical and empirical validity to potentially serve as a guide for future researchers with regard to making their methodological choices.

The second objective of the chapter has been to explain the rationale for the numerous methodological choices made at every stage of the study. In this case, the rationale for the choice of data, its sources, sampling procedure, research methodology, and sensitivity analyses were explicitly discussed throughout the study. Thirdly, the chapter attempted to point out the strengths and limitations of the various methodological choices made throughout the study. In line with this view, the weaknesses and strengths of the data, its sources, the estimated models, the various proxies and measurement of the independent, control and dependent variable, as well as robustness analyses were thoroughly discussed throughout the study.

The final objective of this chapter has been to offer an indication of the extent to which the obtained empirical results are robust to alternative estimations and explanations. In this regard, robustness of the results to the existence of potential problems of endogeneity, and alternative corporate governance mechanisms were thoroughly explored. More specifically, the results were subjected to extensive set of sensitivity analyses, including estimating an

instrumental variable model, a two-stage least squares model, a lagged corporate governance-financial performance structure, and a changes model.

In the next chapter (chapter six), the main objective is to provide a detailed description and explanation for the levels of compliance with the South African Corporate Governance Index (the *SACGI*). More specifically, it will generally attempt to determine the levels of compliance among the sampled firms, and ascertain whether the levels of compliance that will be observed can be explained by firm size, industry, dual-listing, and audit firm size.

CHAPTER SIX

THE SOUTH AFRICAN CORPORATE GOVERNANCE INDEX (THE SACGI)

6. INTRODUCTION

This chapter discusses the South African Corporate Governance Index (the *SACGI*). It has three main objectives. First, it provides a detailed description of the *SACGI* using a number of descriptive statistics. In this regard, summary descriptive statistics of the levels of compliance with the *SACGI* based on the full sample are reported. The second objective of the chapter is to explain the observed variability in the levels of compliance with the *SACGI*. In this respect, the sample is split into size, industry, dual-listed, and big four audited sub-samples. The rationale is to ascertain whether the observed variability in the levels of compliance with the *SACGI* can be explained by firm size, industry, dual-listing and audit firm size.

In addition to descriptive analyses, a multivariate regression of the *SACGI* on all the eight control variables will be carried out to further ascertain the key determinants of the *SACGI*. As have been explained in chapters two, three and five, a distinquishing feature of the South African corporate governance model is that it formally super-imposes a number of affirmative action and stakeholder corporate governance provisions on firms to comply with. Therefore, the third and final aim of this chapter is to examine the levels of compliance within the South African context specific affirmative action and stakeholder corporate governance provisions.

The rest of the chapter is organised as follows. Section 6.1 discusses descriptive statistics of the levels of compliance with the *SACGI* based on the full sample. Section 6.2 describes and explains descriptive statistics based on firm size. Section 6.3 examines descriptive statistics based on industry. Section 6.4 explores further the determinants of the *SACGI* in a multivariate regression framework. Section 6.5 reports descriptive statistics of the levels of compliance with the nine South African context specific affirmative action and stakeholder corporate governance issues. Section 6.6 describes other key trends and measures of board diversity, while section 6.7 summarises the chapter.

6.1 **Descriptive Statistics Based on the Full Sample (All 500 Firm Years)**

Table 4 reports the levels of compliance among the sampled firms with all the fifty individual internal corporate governance provisions that form the South African Corporate Governance Index (the *SACGI).*

Table 4: The Levels of Compliance with the Individual Internal Corporate Governance Provisions among the Sampled Firms

Individual Internal Corporate Governance Provisions of the *SACGI*	Compliance Levels Among Firms (%)					
	All	2002	2003	2004	2005	2006
1. Board and directors:						
Role duality(DUAL1)	74.2	61	64	77	83	86
Board composition(COM1)	62.8	55	61	67	65	66
Board chairperson(BCP)	32.4	17	25	34	42	44
Frequency of board meetings(FBM1s)	78.0	65	75	82	84	84
Individual directors meetings attendance(IDMA)	67.6	36	65	76	78	83
Disclosure of directors' biography(DDB)	96.8	94	96	98	98	98
Disclosure of director classification(DDC)	73.0	49	70	78	84	84
Appraisal of chair performance & effect.(ACPE)	11.8	4	8	12	16	19
Appraisal of CEO/MD perf. & effect.(ACEOPE)	10.6	3	10	13	12	15
Evaluation of board perf. & effect.(EBPE)	25.8	10	24	31	31	33
Evaluat. of board subcom. perf. & effect.(EBSCPE)	14.8	5	12	14	18	25
Director/officer dealings & securities(DDS)	68.6	55	65	72	74	77
Office of the company secretary(COSEC1)	*100.0*	*100*	*100*	*100*	*100*	*100*
Existence of nomination committee(NCOM1)	46.8	26	42	52	54	60
Composition of nomination committee(COM2)	27.8	10	26	30	35	38
Chairperson of nomination committee(NCCP)	29.2	10	23	32	38	43
Disclosure of nom. com. membership(DM1)	45.6	23	41	51	54	59
Nom. com. members' meetings attendance(INCMMA)	31.8	9	25	36	43	46
Existence of remuneration committee(RCOM1)	90.6	85	90	91	92	95
Composition of remuneration committee(COM3)	17.2	10	14	17	21	24
Chairperson of remuneration committee(RCCP)	47.4	29	39	53	55	61
Disclosure of rem. com. membership(DM2)	84.2	76	81	85	86	93
Rem. com. members' meetings attendance(IRCMMA)	49.0	18	40	57	63	67
Directors' rem., interests & share options(DDR)	97.8	93	99	99	99	99
Philosophy & procedure of director rem.(DPLR)	36.6	28	36	39	40	40
Director access to free legal advice(DAFIPA)	79.0	71	79	81	82	82
2. Accounting and auditing:						
Existence of audit committee(ACOM1)	90.6	87	88	90	93	95
Composition of audit committee(COM4)	46.6	28	41	51	52	61
Chairperson of audit committee(ACCP)	49.0	26	48	55	56	60
Disclosure of audit committee membership(DM3)	86.0	79	84	86	87	94
Audit com. members' meetings attendance(IACMA)	54.4	21	49	63	68	71
Narrative on the 'going-concern'(NGC)	98.2	97	98	98	99	99
3. Risk Management and internal audit:						
Disclosure of company risks(DCR)	96.8	96	95	97	98	98
Disclosure of policy on risks management(DPM)	82.4	74	81	84	85	88
Disclosure policy on internal control system(DPI)	90.0	89	87	89	91	94
Existence of risk management committee(RISCOM1)	61.0	40	59	66	67	73
Risk mgt. com. members' metngs. attend.(IRISCMA)	40.6	10	35	47	54	57
4. Ownership structure:						
Internal ownership(INON1)	55.4	60	58	52	51	56

Continuation: Table 4

Individual Internal Corporate Governance Provisions of the *SACGI*	Compliance Levels Among Firms (%)					
	All	2002	2003	2004	2005	2006
5. Integrated sustainability reporting/non-finan.:						
Black economic empowerment(BEE)	68.6	51	60	71	77	84
Policy on HIV/AIDS(HIV)	62.0	45	59	66	70	70
Policy on health and safety(PHS)	53.8	36	42	59	64	68
Policy on employment equity(PEQ)	82.6	80	80	84	83	86
Policy on good environmental practices(PEP)	59.4	47	53	62	67	68
Corporate social Investment(CSI)	63.0	54	63	62	67	69
Disclosure of company code of ethics(DCE)	84.6	76	83	85	89	90
Board diversity on the basis of ethnicity(BDIVE1)	76.4	69	73	76	78	86
Board diversity on the basis of gender(BDIVG1)	50.0	39	45	51	55	60
6. Culture of voluntary compliance & enforcement:						
Contribution to devt. of finan. Journalism(CDFJ)	*.0*	*0*	*0*	*0*	*0*	*0*
Encouraging shareholder activism(PSA)	51.6	37	47	55	57	62
Compliance/non-compliance with King II(CNC)	*97.8*	*96*	*97*	*99*	*99*	98

To facilitate comparison, for each provision, the percentage levels of compliance for the pooled sample, as well as for each of the five firm years are reported. Three key findings can be observed from Table 4. Firstly, it shows that there are substantial variations in the levels of compliance with the individual corporate governance provisions among the sampled firms. It ranges from 100% (perfect compliance by all 100 firms over the five-year period) in the case of the existence of the office of a company secretary (COSEC1) to 0% (complete non-compliance by all 100 firms over the five-year period) with respect to the contribution to the development of financial journalism (CDFJ).

The perfect compliance with COSEC1 is consistent with the provisions of the South African Companies Act and the 2007 JSE Listings Rules. Both regulations mandate every public company to maintain a well-resourced and supportive office of a company secretary to oversee effective and efficient functioning of the board. The complete non-compliance with CDFJ implies that it may be inappropriate within the South African context. A possible reason may be that South Africa seems to already possess a well-developed free and vibrant financial press such that there may be no need for firms to spend additional resources to help develop financial journalism (King Report, 2002, pp.162-163). Similarly, and as will be discussed further below, evidence of no variation in these two provisions suggests that it will be methodologically inappropriate to link single corporate governance mechanisms to financial performance if all the sampled firms were to comply or not to comply with a provision, as suggested by the *equilibrium-variable* model.

It also supports suggestions of weak implementation and enforcement of corporate governance standards by regulatory authorities in South Africa (e.g., Armstrong, 2003; Deutsche Bank, 2002; IIF, 2007). For example, global opinion-based surveys conducted by CLSA (2000) and Deutsche Bank (2002) using analysts to examine corporate governance standards in emerging markets, suggest that South Africa suffers from weak enforcement of corporate governance rules. As has already been discussed in subsection 3.2.2 of chapter three, this may be due to the relative dearth of financial resources and trained personnel available to South Africa's regulatory and enforcement embodies, such as the Financial Services Board (FSB), the Department of Trade and Industry (DTI), and the Registrar of Companies (IIF, 2007, p.8).

For eight (16%) provisions, compliance levels are comparatively high. Approximately, 90% or more of the sampled firms complied with these provisions. They include the description of directors' biography (DDB), disclosure of individual directors' remuneration, interests and share options (DDR), provision of a narrative on the possibility of the firm operating as a going-concern (NGC), the disclosure of company risks (DCR), disclosure of internal control systems and policies (DPI), a positive statement on the compliance or non-compliance with the corporate governance provisions of King II (CNC)[71], and the existence of remuneration (RCOM1), and audit (ACOM1) committees.

By contrast, for 11 (22%) provisions, compliance levels are relatively low. Only 40% or less of the sampled firms complied with these provisions. These provisions consist of whether the chairpersons of the board (BCP), and the nomination (NCCP) committee are independent, evaluation of the performance and effectiveness of the board chairman (ACPE), the CEO/managing director (ACEOPE), the board (EBPE), and the board sub-committees (EBSCE), the disclosure of the attendance records of meetings by the members of nomination (INCMMA), and risk management (IRISCMA) committees, and whether the nomination committee consist of a majority of independent non-executive directors (NEDs) (COM2), and whether all the members of the remuneration (COM3) committee are Independent NEDs.

[71]A general observation from reading the annual reports is that, on average, the sampled firms were more willing to explicitly highlight (often repeated throughout the annual reports) improvements in corporate governance standards or compliance with the corporate governance provisions of King II, but less willing to formally acknowledge areas of non-compliance or decreases in corporate governance standards. Specifically, and as Table 4 shows, a majority (about 98%) of the sampled firms did make a general positive statement (especially in the introduction section or paragraph of the corporate governance report) on whether they comply or do not comply with the corporate governance provisions of King II. A relatively smaller (about 70% as observed from reading the annual reports) number, however, did explicitly specify areas of non-compliance and the reasons for non-compliance. By contrast, almost all the sampled firms did formally acknowledge or highlight year-on-year improvements in corporate governance standards.

For the remaining 29 provisions, compliance levels range from 46% with regard to the disclosure of the nomination committee membership (DM1) to 86% in the case of the disclosure of the audit committee membership (DM3). Overall, the evidence from Table 4 is that the sampled firms are more likely to comply with some of the corporate governance provisions than others. For example, while 74% of the sampled firms have split the roles of chairman and CEO (DUAL1), only 32% of them have independent board chairpersons (BCP). Also, whilst 98% provide narratives by directors' on the possibility of their firm operating as a 'going-concern' (NGC), less than 12% evaluate the performance and effectiveness their chairpersons (ACPE) and CEOs/managing directors (ACEOPE) annually.

The second major evidence from Table 4, and as has been explained above, is that, on comparative basis, the use of the *compliance-index* model is more likely to achieve better variation in the levels of compliance with the *SACGI* among the sampled firms than using the *equilibrium-variable* model. For example, Table 4 shows that over 90% of the sampled firms have established a remuneration committee. This results in less than 10% variability in compliance levels among the sampled firms, such that if a cross-sectional regression is run on such a single corporate governance variable, it is arguably less likely to be value relevant.

However, on the question of whether the remuneration committee consist entirely of independent NEDs (COM3) or is chaired by an independent NED (RCCP), less than 18% or 50%, respectively, of the sampled firms complied. As a result, when the differences in these individual corporate governance variables are aggregated to form a broad compliance corporate governance index, it is arguably more likely to show a relatively sufficient variation in the levels of compliance among the sampled firms than examining single corporate governance mechanisms in isolation.

The final major finding from Table 4 is that compliance with the corporate governance provisions improves over time. Apart from the perfect compliance/non-compliance cases of COSEC1/CDFJ, respectively, as well as internal ownership (INON1)[72] in which there is a reduction (of a 4 percentage points) from 60% in 2002 to 56% in 2006 in the levels of compliance, the remaining 47 provisions experienced consistent substantial improvements in the levels of compliance among the sampled firms. Excluding COSEC1 and CDFJ, the

[72]Internal ownership (INON1) is a dummy variable that takes the value of 1 if the percentage of shares held by all insiders or non-public shareholders, including directors, officers, and employees is less than 50% of the total firm equity, 0 otherwise (see section of 4 of Appendix 2). Similar to the other continuous variables, including board composition (COM1), the frequency of board meetings (FBMs), and board diversity on the basis of gender (BDIVG1) and ethnicity (BDIVE1) contained in the *SACGI*, internal ownership had to be converted from a continuous variable to a dummy variable so that it could easily be included in the *SACGI* without affecting the scale of measurement of the remaining 46 dummy variables.

provision with the least increase over the five-year period is directors' narrative on 'going-concern' (NGC), recording only a 2 percentage point improvement (i.e., from 97% in 2002 to 99% in 2006). However, this is understandable because compliance levels among the sampled firms with NGC were already relatively high in 2002.

In contrast, the disclosure of the risk management committee members' meetings' attendance records (IRISCMA) experienced the highest increase over the five-year period with a 47 percentage point increase (i.e., from 10% in 2002 to 57% in 2006) in the levels of compliance across the sampled firms. For example, only 26% of the sampled firms had established a functioning nomination committee (NCOM1) in 2002. It increased to 42%, 52%, 54% and 60% in 2003, 2004, 2005 and 2006, respectively, experiencing an overall increase of 34 percentage points over the five-year period.

They also show improvements over the findings of prior opinion-based surveys that include South African listed firms. The Deutsche Bank (2002) survey examining corporate governance standards in emerging markets, including South Africa, for example, reports that 60%, 47%, and 16% of South African listed firms have audit, compensation, and nomination committees in 1999, respectively. Table 4, however, shows that 85%, 85%, and 26% of the sampled firms have established audit, remuneration, and nomination committees in 2002, respectively. This implies the number of firms with audit, remuneration, and nomination committees has improved compared with the findings of the Deutsche Bank survey in 1999.

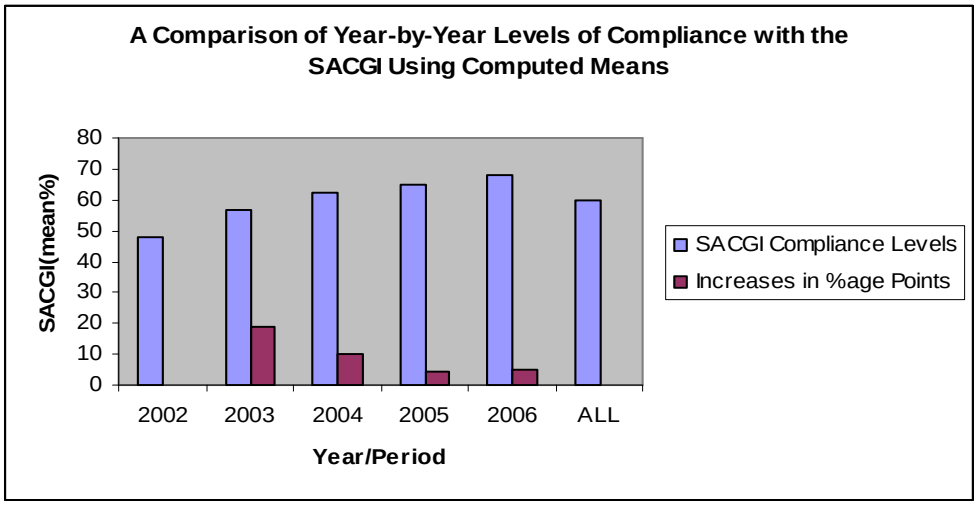

Figure 2: SACGI Compliance Levels by Year/Period

Figure 2 compares the year-by-year aggregate levels of compliance with the *SACGI* across the sampled firms using computed means, and yearly increases in percentage points. Firstly, it demonstrates further that compliance with the corporate governance provisions among the sampled firms improves over time. Secondly, the mean percentage point increase from 2002 to 2006 is 20 (i.e., from 48% in 2002 to 68% in 2006). Thirdly, as the second year in which King II became operational, 2003 experienced the highest yearly percentage point increase of 9 (i.e., from 48% in 2002 to 57% in 2003) with compliance levels increasing at a decreasing rate in the subsequent three years.

The positive relationship between the levels of compliance and time is consistent with the results of the accounting disclosure literature, prior corporate governance studies, and widely cited opinion-based corporate governance surveys. For example, Conyon (1993), Conyon and Mallin (1997), Bauer *et al*. (2004), Shabbir and Padgett (2005), Cui *et al*. (2008) and Henry (2008) report evidence of substantial improvements in the levels of compliance with corporate governance standards over time across a sample of European, UK, and Australian, listed firms that were examined by them, respectively. Similarly, opinion-based surveys conducted by CLSA (2000) and Deutsche Bank (2002) in emerging markets, including South Africa, suggest that the introduction of the King Reports is helping to improve corporate governance standards among South African listed firms.

Panel *A* of Table 5 reports summary descriptive statistics for the *SACGI*. For comparison purposes, descriptive statistics based on firm size, industry, dual-listing, and audit firm size are also presented, and will be referred to in sections 6.2 and 6.3. Consistent with the evidence of wide variability in compliance levels with the individual corporate governance provisions, it suggests that there is a substantial degree of dispersion in the summary internal corporate governance scores among the sampled firms. The scores range from a minimum of 6% (i.e., 3 out of 50) to a maximum 98% (i.e., 49 out of 50) with the average sampled firm complying with 60% of the 50 corporate governance provisions analysed.

This is similar to the results of prior cross-countries studies that include South Africa in their sample. Using the CLSA corporate governance ratings, both Klapper and Love (2004) and Durnev and Kim (2005) report average firm-level corporate governance scores in 2000 of 66% and 61% for a cross-country sample that include South African listed firms, respectively. Similarly, opinion-based survey conducted by the Deutsche Bank (2002) in emerging markets, including South Africa, suggests that the average corporate governance score among South African listed firms was 74%.

Appendix 5 is a histogram depicting the distribution of the *SACGI*. Since Ordinary Least Squares (OLS) regression technique will be used to test all the hypotheses that have been discussed in chapters four and five, a normal distribution curve has been super-imposed. First, the skewness statistic (-.36) in Panel *A* of Table 5, rejects the null hypothesis (the absolute critical value for accepting skewness is zero) that the *SACGI* is symmetrically distributed (i.e., skewed to the right with longer left tail) at the 5% significance level.

By contrast, the kurtosis statistic (-.89) fails to reject the null hypothesis (the absolute critical value for rejecting Kurtosis is three) that the *SACGI* is mesokurtically distributed. The negative sign, however, suggests that the observations cluster less and have shorter tails. The lack of symmetry in the *SACGI* may pose problems for the OLS regressions that will subsequently be estimated in chapter eight. However, and as will be discussed further below, the non-normal behaviour depicted by the *SACGI* is generally very similar to the reported results of prior studies that have carried out OLS estimations (Cheung and Wei, 2006, p.913; Haniffa and Hudaib, 2006, pp.1048, 1050-1051; Francoeur *et al*., 2008, p.88). This suggests it may be statistically tolerable.

Appendix 5 also indicates that the *SACGI* is fairly less non-normal compared with a normal distribution. Specifically, and as Panel *D* of Table 6 shows, less than 5%, 18%, and 25% of the sampled firms had summary corporate governance scores between 0% and 20%, 21% and 40%, and 41% and 60%, respectively. By contrast, more than 32% and 19% of the sampled firms had corporate governance scores between 61% and 80%, and 81% and 100%, respectively.

Descriptive statistics of the *SACGI* for each of the five years are fairly similar to those observed for the full 500 firm-year observations. All show similar large variability (large standard deviations) in the levels of compliance with the *SACGI* (i.e., minimum of 6% in 2002 to a maximum of 98% in 2005). Similarly, they are all mildly (in comparison with a normal distribution) skewed to the right with less clustering among the observations. As has been explained above, ascertaining the distributional properties of the *SACGI* is important because the presence of extreme levels of non-normal behaviour may pose problems for the OLS regressions that will be estimated in chapter eight. This is because OLS estimation assumes normality in variables.

Table 5: Summary Descriptive Statistics for the South African Corporate Governance Index (*the SACGI)*

The South African Corporate Governance Index (*the SACGI*)	Mean	T-Test	Std. Dev.	Skew-ness	Kurt-osis	Mini-mum	Maxi-mum
Panel A: All Firm Years	*60.00*		*22.03*	*-.36***	*-.89*	*6.00*	*98.00*
2002	47.58		19.03	-.06*	-.81	6.00	86.00
2003	56.70		21.56	-.35**	-.97	10.00	94.00
2004	62.50		21.83	-.56**	-.76	6.00	96.00
2005	65.08		21.95	-.53**	-.77	12.00	98.00
2006	68.16		19.89	-.72**	-.28	12.00	96.00
Panel B: All Small Firms	*44.48*	*31.05****	*17.69*	*.25***	*-.49*	*10.00*	*90.00*
2002	34.48	26.20***	12.73	.20**	-.17	10.00	66.00
2003	40.16	33.08***	16.39	.56**	-.04	10.00	82.00
2004	46.12	32.76***	18.23	.15**	-.73	12.00	84.00
2005	48.24	33.68***	17.72	.15**	-.42	12.00	90.00
2006	53.40	29.52***	17.12	-.18**	-.28	12.00	88.00
Panel C: All Large Firms	*75.53*		*13.28*	*-1.18****	*2.94**	*6.00*	*98.00*
2002	60.68		14.81	-1.09**	2.59*	6.00	86.00
2003	73.24		10.57	-.62**	.42	46.00	94.00
2004	78.88		9.11	-.24**	-.38	60.00	96.00
2005	81.92		9.01	-.25**	-.37	66.00	98.00
2006	82.92		7.86	-.10**	-.85	66.00	96.00
Panel D: All B. Material Firms	*57.92*	*.96*	*24.70*	*-.32***	*-1.22*	*10.00*	*96.00*
2002	48.10	5.50	22.91	-.04*	-1.47	12.00	86.00
2003	54.00	.90	26.64	-.25**	-1.34	10.00	94.00
2004	58.20	.80	24.78	-.29**	-1.27	14.00	94.00
2005	60.50	3.20	25.45	-.20**	-1.42	18.00	96.00
2006	68.50	2.40	20.82	-1.13***	.54	18.00	96.00
Panel E: *All Con. Goods Firms*	*59.32*	*2.36*	*20.90*	*-.44***	*-.93*	*6.00*	*92.00*
2002	47.80	5.20	20.47	-.24**	-.80	6.00	80.00
2003	56.90	3.80	20.46	-.49**	-.82	18.00	88.00
2004	62.10	3.10	21.07	-.62**	-.98	24.00	88.00
2005	63.40	.30	20.98	-.58**	-1.07	28.00	92.00
2006	66.40	.00	18.14	-.43**	-1.51	36.00	86.00
Panel F: All C. Services Firms	*63.44*	*6.48***	*18.66*	*.10***	*-1.00*	*28.00*	*98.00*
2002	49.00	6.40	13.40	.44**	-.10	28.00	80.00
2003	59.40	6.30	17.58	.01*	-1.26	32.00	96.00
2004	68.40	9.40	17.50	-.26*	-1.00	36.00	96.00
2005	69.90	6.20	17.92	-.00	-1.00	38.00	98.00
2006	70.50	4.10	18.43	-.08*	-1.20	38.00	96.00

Notes: The *t-test* in column 3 is the independent samples *t-test* for equality of means. The mean differences in Panel *B* test for equality of means between all large and all small firms, while those in Panels *D, E,* and *F* test for equality of means between all basic materials firms, all consumer goods firms, and all consumer services firms, and all technology firms, respectively. A mean difference with (***), and (**) indicates that the null hypothesis that the means are equal is rejected at the 1%, and 5% significance level, respectively. The skewness and kurtosis test statistics in columns 5 and 6, respectively, test for normal distribution. A test statistic with (***), (**), and (*) means that the null hypothesis that the *SACGI* is normally distributed is rejected at the 1%, 5%, and 10% significance level, respectively.

Continuation: Table 5

The South African Corporate Governance Index (*the SACGI*)	Mean	T-Test	Std. Dev.	Skew-ness	Kurt-osis	Mini-mum	Maxi-mum
Panel G: All Industrials Firms	*62.38*	*5.42**	*25.20*	*-.60***	*-.93*	*10.00*	*96.00*
2002	50.40	7.80	21.67	-.27**	-.85	10.00	86.00
2003	60.10	7.00	24.97	-.68**	-1.08	12.00	92.00
2004	64.80	5.80	25.79	-.86**	-.62	12.00	96.00
2005	67.90	4.20	25.92	-.92**	-.43	12.00	96.00
2006	68.70	2.30	25.32	-1.01**	-.06	12.00	96.00
Panel H: All Technology Firms	*56.96*		*19.63*	*-.26***	*-.86*	*12.00*	*92.00*
2002	42.60		16.03	-.01*	-.42	12.00	70.00
2003	53.10		17.85	-.09*	-.76	24.00	82.00
2004	59.00		19.46	-.58**	-.42	24.00	92.00
2005	63.70		19.25	-.67**	-.34	24.00	90.00
2006	66.40		17.47	-.61**	-.59	34.00	92.00
Panel I: All Dual-listed Firms	*74.82*	19.74***	*17.54*	*-1.88****	*4.28***	*6.00*	*96.00*
2002	61.04	17.95***	20.09	-1.46***	2.15	6.00	96.00
2003	72.48	21.45***	16.23	-2.23***	6.83***	14.00	86.00
2004	76.48	19.09***	17.09	-2.22***	5.86***	18.00	94.00
2005	80.08	20.00***	15.91	2.34***	6.90***	22.00	96.00
2006	94.00	21.11***	7.35	.03*	-.59	70.00	96.00
Panel J: All Non-Dual-listed	*55.07*		*21.17*	*-.07**	*-.97*	*10.00*	*98.00*
2002	43.93		16.49	.16**	-.71	10.00	80.00
2003	51.03		20.59	-.04*	-1.01	10.00	84.00
2004	57.39		21.33	-.30**	-.95	12.00	96.00
2005	60.08		21.48	-.26**	-.94	12.00	98.00
2006	62.89		19.97	-.40**	.59	12.00	96.00
Panel K: All Big Four Audited	*66.16*	*21.22****	*20.67*	*-.87***	*.12*	*6.00*	*98.00*
2002	52.82	18.06***	18.76	-.48**	-.33	6.00	86.00
2003	63.38	22.45***	20.17	-.79**	.29	10.00	94.00
2004	69.29	24.16***	19.51	-1.22***	1.11	12.00	96.00
2005	71.72	22.89***	20.01	-1.18***	.91	12.00	98.00
2006	73.58	18.69***	18.33	-1.36***	1.78	12.00	96.00
Panel L: All Non-Big Four Aud.	*44.94*		*17.61*	*.55***	*-.31*	*12.00*	*90.00*
2002	34.76		12.68	.32**	-.49	12.00	62.00
2003	40.93		15.35	.75**	.33	18.00	82.00
2004	45.13		18.17	.49**	-.67	22.00	84.00
2005	48.83		17.84	.53**	-.22	20.00	90.00
2006	54.90		17.38	.25**	-.67	20.00	88.00

Notes: The *t-test* in column 3 is the independent samples *t-test* for equality of means. The mean differences in Panel *G* test for equality of means between all industrial firms and all technology firms. The mean differences in Panel *I* test for equality of means between all dual-listed and all non-dual-listed firms, while those in Panel *K* test for equality of means between all big four audited firms and all non-big four audited firms. A mean difference with (***), and (*) indicates that the null hypothesis that the means are equal is rejected at the 1%, and 10% significance level, respectively. The skewness and kurtosis test statistics in columns 5 and 6, respectively, test for normal distribution. A test statistic with (***), (**), and (*) means that the null hypothesis that the *SACGI* is normally distributed is rejected at the 1%, 5%, and 10% significance level, respectively.

Table 6: Additional Characteristics of the Sampled Firms

FIRM CLASSIFICATION	DUAL-LISTING	BIG FOUR AUDITOR	NON-BIG FOUR AUDITOR
Panel A: Firm Size			
Small	3	25	27
Large	23	46	3
Total	*26*	*71*	*29*
Panel B: The Country of Dual-listing			
UK and US	7	7	-
UK	8	8	-
US	11	11	-
Total	*26*	*26*	-
Panel C: Firm Industry			
Technology	2	12	8
Consumer services	5	13	7
Consumer Goods	3	16	5
Industrials	5	14	6
Basic Materials	11	16	3
Total	*26*	*71*	*29*
Panel D: A Tabular Distribution of the SACGI Scores			
SACGI Scores	%	Number of Observations	% of Sample
Firms With Scores Between:	0 – 20	24	4.80
	21 – 40	89	17.80
	41 – 60	124	24.80
	61 – 80	165	33.00
	81 – 100	98	19.60
Total		*500*	*100.00*

However, and as has been explained above, the level of non-normal behaviour shown by the *SACGI* is generally mild (in relation to a normal distribution), as well as very consistent with the findings of previous studies that have also applied OLS technique in estimating their structural equations (Cheung and Wei, 2006, p.913; Haniffa and Hudaib, 2006, pp.1048, 1050-1051; Francoeur *et al*., 2008, p.88). As has been explained above, this appears to suggest that it may be statistically tolerable.

In sum, the main evidence that emerges from examining the full sample of firms is that despite the expectation that the introduction of King II will speed-up convergence of corporate governance standards (e.g., Armstrong, 2003; Malherbe and Segal, 2003), internal corporate governance practices among South African listed firms still vary substantially. While this is consistent with the variability in compliance levels reported by prior cross-country studies that include South Africa (e.g., CLSA, 2000; Pellens *et al*., 2001; Deutsche Bank, 2002; Klapper and Love, 2004; Durnev and Kim, 2005; Werder *et al*., 2005), it demonstrates that a high

degree of heterogeneity exists when it comes to the importance South African listed firms attach to internal corporate governance structures. Methodologically, and unlike prior studies, it also suggests that the internal corporate governance provisions and the sampled firms have been adequately selected to achieve sufficient variation. This may reduce the possibilities of sample selection bias that have arguably plagued much of the prior cross-country studies whose samples incude a number of South African listed firms (e.g., Klapper and Love, 2004; Durnev and Kim, 2005; Morey *et al*., 2009; Chen *et al*., 2009).

Evidence of improving corporate governance standards among the sampled firms, however, implies that contrary to local and international expectations, the current UK-style voluntary compliance regime ('comply or explain') is at least working to some extent, and thus appears to be appropriate for South Africa. This finding is also in line with the results of prior studies (Aguilera and Cuervo-Cazurra, 2009, pp.376, 383; Filatotchev and Boyd, 2009, p.262-263). Specifically, and in reviewing prior studies[73] that have examined corporate governance standards in firms of countries that have adopted the 'comply or explain' regime, Aguilera and Cuervo-Cazurra (2009, p.376) concludes that "*Despite the criticisms that the codes' voluntary nature limits their ability to improve governance practices, codes of good governance appear to have generally improved the governance of countries that have adopted them, although there is the need for additional reforms* ".

Following the suggestions of the accounting disclosure literature (e.g., Lang and Lundholm, 1993; Botosan 1997; Healy and Palepu, 2001) and prior corporate governance studies (e.g., CLSA, 2000; Deutsche Bank, 2002; Bauer *et al*., 2004; Drobetz *et al*., 2004; Bebenroth, 2005; Werder *et al*., 2005), the full sample is split into sub-samples on the basis of firm size and industry. This is to ascertain whether the observed wide variability in the levels of compliance with the corporate governance provisions among the sampled firms can be explained by firm size and industry. Apart from being informed by prior evidence, and as has been explained in chapter five, the sample is split on the basis of firm size and industry because they were the two main criteria on which the stratify sample of 100 was selected.

In exploring further the characteristics of the *SACGI* on the basis of firm size and industry, three control variables, namely dual-listing, audit firm size, and year will also be incorporated into the descriptive analysis. The main reationale for incorporating these three

[73]Previous studies that have examined the levels of compliance with corporate governance provisons in firms of countries that have adopted the 'comply' or explain' compliance regime reviewed by Aguilera and Cuervo-Cazurra (2009, pp.383-384) are: Conyon (1994); Conyon and Mallin (1997); Weir and Laing (2000); Pellens *et al*., 2001; Bebenroth (2005); Comme (2005); Werder *et al*. (2005); and Krambia-Kapardis and Psaros (2006), amongst others.

control variables into the descripitive analysis is that unlike the remaining three control variables (namely capital structure, sales growth, and capital expenditure), the available data on them are detailed enough such it makes classification simple. For example, and unlike capital structure, sales growth or capital expenditure, a firm can simply be classified either as cross-listed or not, and audited by a big four or not, amongst others. To investigate further the key determinants of the *SACGI*, a multivariate regression of the *SACGI* on all the eight control variables will be conducted in section 6.4.

Therefore, the next section will further examine the distributional properties of the *SACGI* among the sampled firms on the basis of firm size, while section 6.3 will do similarly on the basis of industry. Section 6.4 will present an analysis of multivariate regression results of the *SACGI* on all the eight control variables. Ssection 6.5 will also investigate similar descriptive patterns with respect to the nine South African context specific affirmative action and stakeholder issues (the *Social-SACGI*).

6.2 **Descriptive Statistics of the *SACGI* Based on Firm Size**

Panels *B* and *C* of Table 5 report summary descriptive statistics of aggregate levels of compliance with the *SACGI* for large and small firms. Figure 3 also presents a comparison of the levels of compliance with the *SACGI* between large and small firms using computed aggregate means. Firstly, both show that compliance levels among large sampled firms are consistently higher than for small firms at any period of examination. Specifically, the average large firm complied with 76% of the 50 corporate governance provisions analysed. By contrast, the average small firm complied only with 44% of the 50 corporate governance provisions examined. In fact, the independent samples *t-test* for equality of means between large and small firms in Panel *B* of Table 5 consistently rejects the null hypothesis that the means are equal for any period of examination at the 1% significance level.

Secondly, and consistent with the evidence of the full sample, compliance levels in both large and small firms have improved over time. For example, compliance levels for small firms consistently increased from 34% in 2002 to 40%, 46%, 48%, and 53% in 2003, 2004, 2005, and 2006, respectively. This provides additional evidence that corporate governance standards in South African listed firms have improved irrespective of firm size. Finally, Table 5 suggests that both large and small firms show summary distributional properties similar to those observed for the combined sample. It suggests that they are either mildly (in comparison to with a normal distribution) skewed to the left or right, have large standard deviations, but

are mesokurtically peaked. As has been indicated above, the mild non-normal nature of the distributional properties of the *SACGI* is similar to the reported results of past studies that have also conducted OLS estimations (Cheung and Wei, 2006, p.913; Haniffa and Hudaib, 2006, pp.1048, 1050-1051; Francoeur *et al*., 2008, p.88). As has also been explained above, this is important because it suggests that it may be appropriate to estimate structural equations using OLS regression technique.

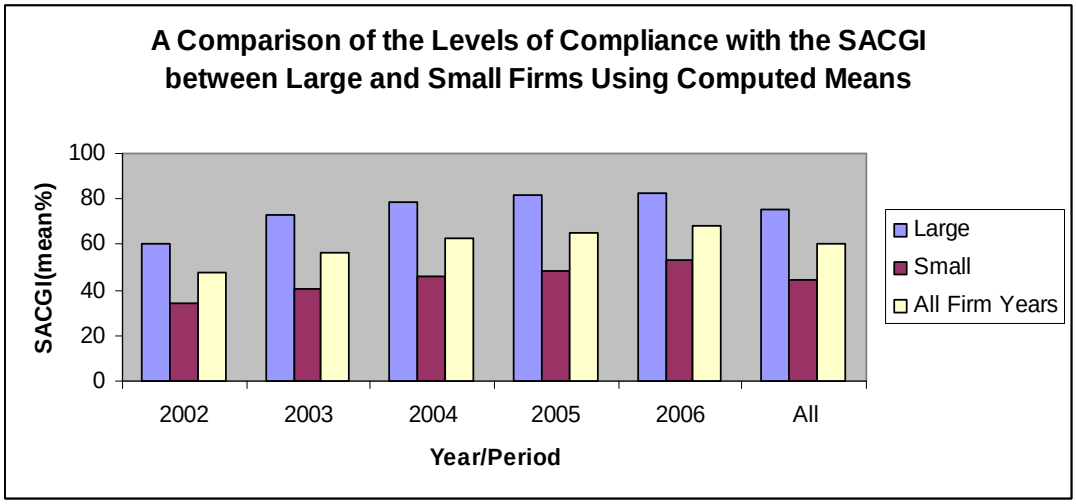

Figure 3: SACGI Compliance Levels by Firm Size

Table 7 below reports a comparison of the levels of compliance with all the 50 individual internal corporate governance provisions analysed between large and small firms. The rationale is to ascertain the governance provisions of the *SACGI* that account for the significant differences observed in Table 5 between large and small firms. The sample is split into 50 large and 50 small firms as described in subsection 5.1.2 of chapter five. This results in 50 firms in each firm year, such that all large and small firms will have a total of 250 firm year observations each. The *t-test* in column 4 of Table 7 is the independent samples *t-test* for equality of means between all large and small firms.

Several interesting findings emerge from Table 7. Firstly, and consistent with the findings at the aggregate levels, there is evidence of significant variability in the levels of compliance between all large and small sampled firms. Specifically, it shows that in 46 (92%) out of the 50 corporate governance provisions investigated, compliance levels amongst large firms, are significantly higher than small firms at least at the 5% significance level. By contrast, four (8%) of the provisions do not present evidence of any significant difference in compliance levels between large and small firms. These include the office of a company

secretary (COSEC1), contribution to the development of financial journalism (CDFJ), directors' narrative on the possibility of the firm operating as a 'going-concern' (NGC), and a positive statement on compliance or non-compliance with the corporate governance provisions of King II (CNC).

Secondly, it shows that the differences in compliance levels observed between large and small firms can be explained more by some corporate governance provisions than others. Specifically, 16 (32%) corporate governance provisions exhibited the highest significant variability between large and small firms. For these provisions, the variability between the average large and small firm is more than 40 percentage points. These are: the disclosure of the frequency of board meetings' (FBM1s), the disclosure of individual directors' meetings' attendance records (IDMA), explicit classification of directors into executive, non-executive, and independent non-executive directors (DDC), the existence of a nomination committee (NCOM1), whether the membership of the nomination committee (DM1) is disclosed, the disclosure of members of the nomination (INCMMA), and the remuneration (IRCMMA) committees' meetings' attendance records.

The rest are: the disclosure of the criteria or procedure for determining directors' remuneration (DPLR), whether the audit committee (COMP4) consist of a majority of independent NEDs, whether the chairman (ACCP) of the audit committee is an independent NED, the existence of a risk management committee (RISCOM1), the disclosure of the audit (IACMMA), and risk management (IRISCMA) committees' members' meetings attendance records, the disclosure of policies and practices aimed at addressing the HIV epidemic among the workforce (HIV), the disclosure of environmental policies and practices (PEP), and the disclosure of corporate social investments (CSI). For example, while on average, 74% of large firms have established audit committees, only 18% of small firms have audit committees. Similarly, while 78% of large firms have nomination committees, only 15% of small firms have established nomination committees, a difference of 63 percentage points.

Table 7: A Comparison of the Levels of Compliance with the Individual Internal Corporate Governance Provisions by firm Size

Individual Internal Corporate Governance Provisions of the *SACGI*	Compliance Levels between Large and Small Firms (%)												
	All Firm Years			2002		2003		2004		2005		2006	
	Large	Small	T-Test	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small
1. Board and directors:													
Role duality(DUAL1)	85.6	62.8	.228**	74	48	84	44	88	66	92	74	90	82
Board composition(COM1)	80.4	45.2	.352**	72	38	78	44	86	48	84	46	82	50
Board chairperson(BCP)	46.8	18.0	.288**	28	6	44	6	50	18	56	28	56	32
Frequency of board meetings(FBM1s)	95.6	60.4	.352**	88	42	96	54	98	66	100	68	96	72
Individual directors meetings attendance(IDMA)	89.2	46.0	.432**	54	18	92	38	100	52	100	56	100	66
Disclosure of directors' biography(DDB)	99.6	94.0	.056*	98	90	100	92	100	96	100	96	100	96
Disclosure of director classification(DDC)	92.8	53.2	.396**	76	22	92	48	96	60	100	68	100	68
Appraisal of chairperson perf. & effect.(ACPE)	21.6	2.0	.196**	6	2	14	2	22	2	30	2	36	2
Appraisal of CEO/MD perf. & effect.(ACEOPE)	19.6	1.6	.180**	6	0	18	2	24	2	22	2	28	2
Evaluation of board effect. & perf.(EBPE)	44.4	7.2	.372**	18	2	42	6	50	12	56	6	56	10
Evalua. of board subcom. perf. & effect.(EBSCPE)	24.8	4.8	.200**	8	2	20	4	22	6	30	6	44	6
Director/officer dealings and securities(DDS)	85.2	52.0	.332**	74	36	84	46	90	54	90	58	88	66
Office of the company secretary(COSEC1)	100.0	100.0	.000	100	100	100	100	100	100	100	100	100	100
Existence of nomination committee(NCOM1)	78.8	14.8	.640**	48	4	74	10	90	14	88	20	94	26
Composition of nomination committee(COMP2)	47.6	8.0	.396**	20	0	46	6	52	8	60	10	60	16
Chairperson of nomination committee(NCCP)	48.0	10.4	.376**	20	0	38	8	54	10	62	14	66	20
Disclosure of nom. com. membership(DM1)	76.4	14.8	.616**	42	4	72	10	88	14	88	20	92	26
Nom. com. members' meetings attend.(INCMMA)	57.6	6.0	.516**	18	0	48	2	66	6	78	8	78	14
Existence of remuneration committee(RCOM1)	98.4	82.8	.156**	94	76	98	82	100	82	100	84	100	90
Composition of remuneration committee(COM3)	27.2	7.2	.200**	18	2	24	4	22	12	34	8	38	10
Chairperson of remuneration committee(RCCP)	64.4	30.4	.340**	46	12	56	22	70	36	74	36	76	46
Disclosure of rem. com. membership(DM2)	98.4	70.0	.284**	94	58	98	64	100	70	100	72	100	86
Rem. com. members' meetings attendance(IRCMA)	74.4	23.6	.508**	34	2	70	10	84	30	94	32	90	44
Directors' rem., interests & share options(DDR)	99.2	96.4	.028*	96	90	100	98	100	98	100	98	100	98
Philosophy & procedure of director rem.(DPLR)	59.2	14.0	.452**	48	8	60	12	60	18	64	16	64	16
Director access to free legal advice(DAFIPA)	91.6	66.4	.252**	86	56	92	66	94	68	94	70	92	72

Notes: The *t-test* in column 4 is the independent samples *t-test* for equality of means between all large and all small firms. A mean difference with (**), and (*) indicates that the null hypothesis that the means are equal is rejected at the 1%, and 5% significance level, respectively.

Continuation: Table 7

Individual Internal Corporate Governance Provisions of the *SACGI*	Compliance Levels between Large and Small Firms (%)												
	All Firm Years			2002		2003		2004		2005		2006	
	Large	Small	T-Test	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small
2. Accounting and auditing:													
Existence of audit committee(ACOM1)	98.8	82.4	.164**	98	76	100	76	98	82	100	86	98	92
Composition of audit committee(COM4)	74.8	18.4	.564**	50	6	70	12	82	20	82	22	90	32
Chairperson of audit committee(ACCP)	74.4	23.6	.508**	44	8	74	22	82	28	84	28	88	32
Disclosure of audit commit. Membership(DM3)	99.6	72.4	.272**	98	60	100	68	100	72	100	74	100	88
Audit com. members' meetings attend.(IACMMA)	79.2	29.6	.496**	38	4	78	20	90	36	96	40	94	48
Narrative on the 'going-concern'(NGC)	98.0	98.4	.004	98	96	98	98	98	98	98	100	98	100
3. Risk management and internal audit:													
Disclosure of company risks(DCR)	99.2	94.4	.048*	98	94	98	92	100	94	100	96	100	96
Disclosure of policy on risks management(DPM)	98.8	66.0	.328**	94	54	100	62	100	68	100	70	100	76
Policy on internal control systems(DPI)	97.2	82.8	.144**	98	80	98	76	96	82	96	86	98	90
Existence of risk management committee(RISCOM)	81.2	40.8	.404**	56	24	82	36	88	44	90	44	90	56
Risk mgt. com. members' metngs. attend.(IRISM)	63.6	17.6	.460**	20	0	60	10	72	22	84	24	82	32
4. Ownership structure:													
Internal ownership(INON1)	72.0	38.8	.332**	74	46	70	46	72	32	72	30	72	40
5. Integrated sustainability reporting/non-fina.:													
Black economic empowerment(BEE)	82.8	54.4	.284**	64	38	76	44	86	56	94	60	94	74
Policy on HIV/AIDS(HIV)	88.0	36.0	.520**	72	18	86	32	90	42	96	44	96	44
Policy on health and safety(PHS)	72.8	34.8	.380**	52	20	58	26	80	38	88	40	86	50
Policy on employment equity(PEQ)	92.4	72.8	.196**	88	72	92	68	94	74	94	72	94	78
Policy on good environmental practices(PEP)	85.2	33.6	.516**	70	24	80	26	88	36	94	40	94	42
Corporate social Investment(CSI)	92.4	33.6	.588**	84	34	94	32	92	32	96	38	96	42
Disclosure of company code of ethics(DCE)	92.8	76.4	.164**	84	68	94	72	94	76	96	82	96	84
Board diversity on the basis of ethnicity(BDIVE1)	92.4	60.4	.320**	96	52	90	56	94	58	94	62	98	74
Board diversity on the basis of gender(BDIVG1)	68.0	32.0	.360**	54	24	64	26	72	30	72	38	78	42
6. Voluntary compliance and enforcement:													
Contribution to devt. of finan. Journalism(CDFJ)	.0	.0	.000	0	0	0	0	0	0	0	0	0	0
Encouraging shareholder activism(PSA)	68.8	34.4	.344**	52	22	62	32	72	38	76	38	82	42
Compliance/non-compliance with King II(CNC)	97.2	98.4	.012	96	96	98	100	98	100	98	100	96	100

Notes: The *t-test* in column 4 is the independent samples *t-test* for equality of means between all large and all small firms. A mean difference with (**) and (*) indicates significance at 1% and 5% level, respectively.

In contrast, 3 (6%) of the corporate governance provisions exhibited the least significant variability between large and small firms. For these provisions, the variability between large and small firms is less than 10 percentage points. These are: the disclosure of individual directors' biography (DDB), the disclosure of individual directors' remuneration, any interests, and share options (DDR), and the disclosure of current and potential future company risks (DCR). For instance, on average, 96% of small firms disclosed their individual directors' remuneration, interests and share options in relation to 99% by large firms, a difference of 3 percentage points.

For the remaining 27 (54%) of the corporate governance provisions, the variability between large and small firms ranges from 16 percentage points with reference to the existence of a remuneration committee (RCOM1) to 40 percentage points in the case of whether the nomination committee (COMP2) consist of a majority of independent NEDs. For example, on average, 87% of large firms have split the roles of board chaiman and CEO or managing director (DUAL1) in comparison with 63% of small firms, a difference of 24 percentage points. Similarly, while 22% and 20% of large firms evaluate the performance and effectiveness of their board chairpersons (ACPE) and CEOs or managing directors (ACEOPE), respectively, only 2% of small firms carry annual appraisal of the performance and effectiveness of their board chairpersons and CEOs.

Finally, and consistent with the evidence obtained from examining the *SACGI* at aggregate levels, Table 7 shows that the levels of compliance with the individual corporate governance provisions improves over time across both large and small firms. However, the pattern of year-by-year improvements in compliance levels is more consistent in the case of large firms than for small firms. For instance, only 28% of the large firms had independent non-executive directors as board chairpersons (BCP) in 2002. It increased to 44%, 50%, 56% and 56% in 2003, 2004, 2005 and 2006, respectively.

Similarly, 6% of small firms had independent non-executive directors as board chairpersons (BCP) in 2002. It remained at 6% in 2003, but increased to 18%, 28%, and 32% in 2004, 2005, and 2006, respectively. The variability between large and small firms in the levels of compliance with the corporate governance provisions over time also suggests that there are differences in adoption rates between large and small firms of corporate governance standards. That is, it suggests that large firms are early adopters of King II, while small firms are late adopters.

As explained further below, this is because large firms have certain advantages, including financial, which may make them more responsive to changes in corporate governance rules than small firms. For example, 74% of large firms had split the roles of board chairman and CEO or managing director (DUAL1) in 2002 in comparison with 48% of small firms, a percentage point difference of 26. By 2006, the gap between large and small firms had closed to only 8 percentage points with 90% of large firms having the roles of board chairman and CEO or MD split in relation to 82% of small firms.

As has been discussed in subsection 5.1.4 of chapter five, evidence of consistent positive relationship between corporate governance scores and large firms supports the results of prior South African studies (e.g., Klapper and Love, 2004; Bebenroth, 2005; Durnev and Kim, 2005; Werder *et al*., 2005). It is also consistent with theory. Firstly, and as has been explained above, compliance with corporate governance provisions has costs implications that smaller firms may struggle to afford in comparison with their larger counterparts (e.g., Botosan, 1997; Hassan and Marston, 2008). Secondly, greater information asymmetry associated with larger firms suggests that they can be expected to have greater agency problems. This will require stricter corporate governance mechanisms to reduce the possibilities of managerial expropriation (e.g., Klapper and Love, 2004; Beiner *et al*., 2006). Thirdly, larger firms are exposed to greater public scrutiny and financial press following. This arguably compels them to disclose more than their smaller counterparts.

Fourthly, prior literature indicates that political costs, such as nationalisation, regulation and taxation, for example, are positively associated with firm size (Watts and Zimmerman, 1978, p.115; Andreasson, 2009, p.22). This means that larger firms can be expected to comply better with the corporate governance provisions, especially the affirmative action and stakeholder provisions of King II than their smaller counterparts.

Finally, larger firms are more likely to be dual-listed and be subjected to additional listing and corporate governance requirements (e.g., Hassan and Marston, 2008; Melvin and Valero, 2009). In fact, opinion-based surveys conducted by CLSA (2000) and Deutsche Bank (2002) in emerging markets, including South Africa suggest that cross-listed South African firms tend to have better corporate governance standards than their non dual-listed counterparts.

To ascertain whether cross-listed firms comply better with the corporate governance provisions than their non cross-listed counterparts, the sample is split into two: those with cross-listings to the UK and US, and those with no cross-listings. As has been discussed in

subsection 5.2.2 of chapter five, prior evidence suggests that the US and UK stock markets often maintain more rigorous corporate governance requirements and better investor protection regimes (e.g., La Porta *et al*., 1998; Klapper and Love, 2004).

As Panels *A* and *B* of Table 6 indicate, in total, 26 of the sampled firms (26%) are dual-listed. Seven firms are cross-listed to both the UK and US, whilst 8 and 11 firms are cross-listed to the UK[74] and US alone, respectively. Of the 26 dual-listed firms, 23 (88%) are large, whilst only 3 (12%) are small. This supports prior evidence that large firms are more likely to be cross-listed than small firms. Panels *I* and *J* of Table 5 reports the aggregate mean levels of compliance with the *SACGI* by dual-listed and non dual-listed sampled firms, respectively. Figure 4 assesses the impact of both dual-listing and audit firm size on compliance levels with the *SACGI*. Both indicate that dual-listed sampled firms have significantly higher corporate governance scores than their non cross-listed firms. Specifically, the average dual-listed firm complied with 75% of the 50 corporate governance provisions in comparison with 55% by their non dual-listed counterparts. The difference is statistically significant at the 1% level.

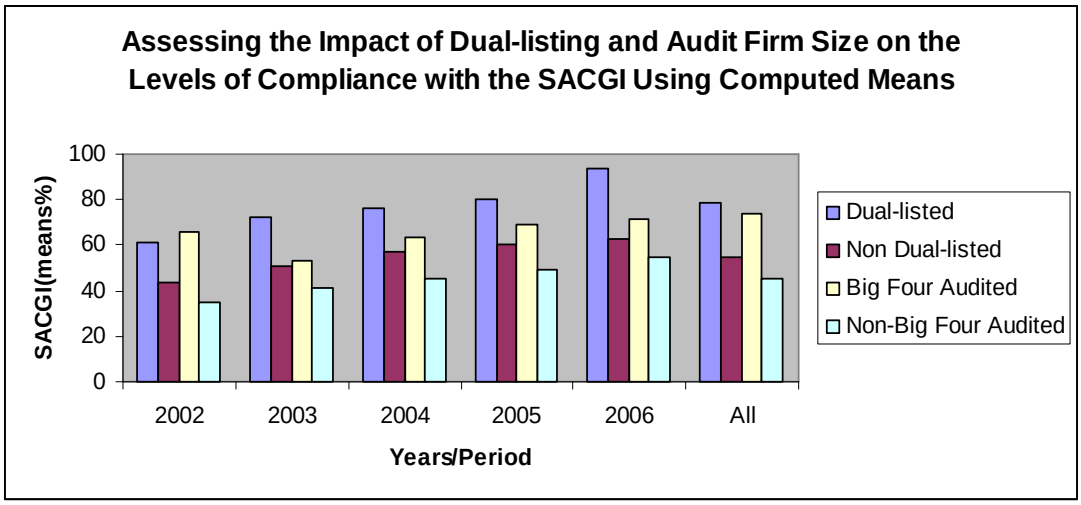

Figure 4: SACGI Compliance Levels by Dual-listing and Audit Firm Size

Similarly, and as has been discussed in subsection 5.2.2 of chapter five, the prior auditing literature suggests that the size of the audit firm matters (e.g., Shockley, 1981; Sori *et al*., 2006). Specifically, it suggests that the levels of auditor independence and audit quality are

[74]Three firms, including Aveng Ltd, Oceana Group Ltd, and Portland Cement Ltd that are cross-listed to the UK also maintain secondary listing on the stock markets of Australia/New Zealand, Namibia, and Zimbabwe, respectively. Apart from these three, there were no cross-listings to different stock markets other than the UK and US stock markets in the sample.

positively associated with audit firm size (e.g., Pearson, 1980; DeAngelo, 1981). This stems from the fact that due to their reputation, resources (i.e., financial, human, information and knowledge), and independence advantages, larger audit firms are better able to resist management pressure in conflict situations. It also helps them to be more effective in determining the 'going-concern' status of firms, and also tend to be more risk-averse (Sori *et al*., 2006, p.2). However, the literature also suggests that audit fees are positively associated with audit firm size (e.g., Palmrose, 1986; Gul, 1991). This means that larger firms are more likely to make use of the services of larger audit firms as they can be expected to better afford the associated higher costs of auditing (higher auditing fees).

As has been discussed in section 3.3 of chapter three, the King Reports recognise external auditors as one of the key stakeholders in ensuring that firms voluntarily comply with the corporate governance provisions of the Code. Specifically, external auditors are required to offer their 'true and fair' view on the extent to which the corporate governance provisions of King II have been applied. Therefore, following the suggestions of the auditing literature, the sample is split into two: firms audited by a big four audit firm (i.e., Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers), and those audited by a non-big four audit firm. The rationale is to ascertain whether firms audited by a big four audit firm tend to comply better with the corporate governance provisions than those audited by a non-big four audit firm.

As Panels *A* of Table 6 shows, 71 (71%) of the sampled firms are audited by a big-four audit firm, while 29 (29%) are audited by a non big-four audit firm. Of the 71 firms audited by a big-four audit firm, 46 (65%) are large, whilst 25 (35%) are small. Of the 29 firms audited by a non big-four audit firm, 27 (93%) are small, whereas 3 (7%) are large. This evidence supports the suggestions of the auditing literature that larger firms are more likely to make use of the services of larger audit firms. Of special interests, Panel *B* of Table 6 indicates that all the 26 dual-listed firms, including the 3 small firms have a big four auditor, supporting the reputation and independence advantages that larger audit firms have over their smaller counterparts.

Panels *K* and *L* of Table 5 reports aggregate mean levels of compliance with the *SACGI* by sampled firms' audited by a big four audit firm and a non-big four audit firm, respectively. Figure 4 assesses the impact of both dual-listing and audit firm size on the levels of compliance with the *SACGI*. Both indicate that firms audited by a big four audit firm have significantly higher levels of compliance with the *SACGI* than those audited by a non big four

audit firm. Specifically, the average sampled firm audited by a big four audit firm complied with 66% of the 50 corporate governance provisions in comparison with 45% by the average firm audited by a non-big four audit firm, which is statistically significant at the 1% level.

To sum up, this section has attempted to investigate the extent to which the significant variability in the levels of compliance with the *SACGI* observed among the sampled firms can be explained by firm size. Overall, the results suggest that the observed variability in the levels of compliance with the *SACGI* can largely be explained by the size of the firm. At the aggregate levels, the average large firm complied with 75% of the 50 corporate governance provisions in comparison with 55% of the small firms, a significant 20 percentage-point difference.

For the individual corporate governance provisions, compliance levels in larger firms are significantly higher in relation to smaller firms in 46 (92%) of the 50 corporate governance provisions investigated. Finally, the analyses also show that large firms are more likely to be cross-listed and be audited by a big four auditing firm with better corporate governance standards their non cross-listed and non-big four audited counterparts.

The next section will examine the extent to which the variability in the levels of compliance with the *SACGI* observed among the sampled firms can be explained by the various industrial groupings.

6.3 **Descriptive Statistics Based on Industry Group**

As has been discussed in subsections 5.1.4 and 5.2.2 of chapter five, both the accounting disclosure literature (e.g., Lang and Lundholm 1993; Botosan, 1997) and prior corporate governance studies (e.g., Bauer *et al.*, 2004; Black *et al*., 2006a; Henry, 2008), suggest that corporate governance standards differ across different industrial groups. Similarly, and of particular interest to this study, opinion-based surveys conducted by CLSA (2000) and Deutsche Bank (2002) in emerging markets that include South Africa indicate that corporate governance standards vary across listed firms in South Africa. Specifically, Deutsche Bank (2002) survey reports that the energy sector (similar to the consumer services firms in this study) tend to have the highest corporate governance standards. By contrast, the technology, hardware and equipment sector (corresponds with the technology firms in this study) has the weakest corporate governance standards.

Therefore, to ascertain whether the variability in the levels of compliance with the *SACGI* observed amongst the sampled firms, can be explained by industrial groupings, the

sample is split into five industries[75] as has been described in subsection 5.1.3 of chapter five. Panels *D* to *H* of Table 5 contain summary descriptive statistics for the five industries. Following the suggestion of Deutsche Bank (2002) that technology firms tend to have the poorest corporate governance standards, the *t-test* in Column 3 tests whether the mean aggregate corporate governance scores of technology firms are significantly different from the other four industries. Figure 5 also presents a comparison of the aggregate levels of compliance with the *SACGI* across the five industries using computed summary means.

Firstly, Table 5 suggests that the average basic materials, consumer goods, consumer services, industrials, and technology firm complied with 58%, 59%, 63%, 62%, and 57% of the 50 corporate governance provisions. Secondly, and consistent with the suggestions of the Deutsche Bank (2002) survey, consumer services and industrial firms have higher compliance levels with the *SACGI* than technology firms, which is statistically significant at least at the 10% significance level. In fact, Figure 5 shows that the levels of compliance with the *SACGI* are consistently higher in the cases of consumer services and industrials firms than the other three industries.

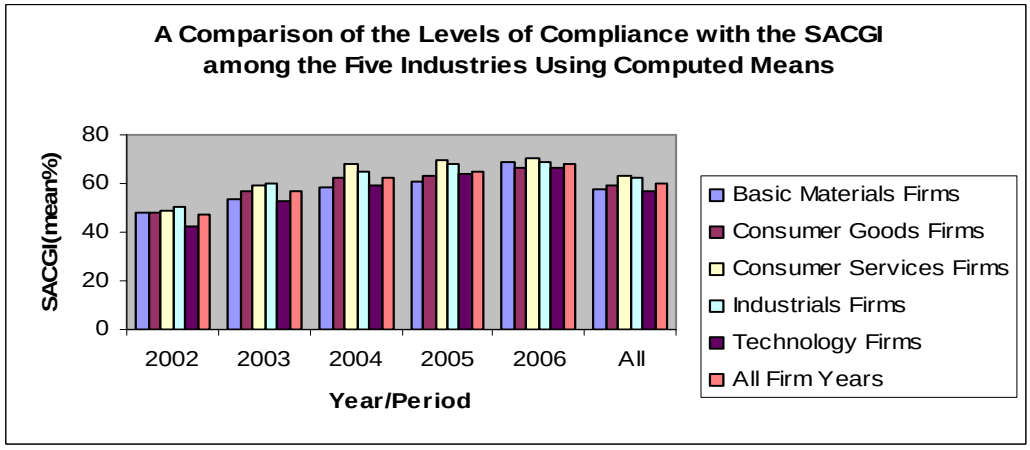

Figure 5: SACGI Compliance Levels by Industry

By contrast, the levels of compliance with the *SACGI* by basic materials and consumer goods firms are not significantly higher than for technology firms. However, and consistent with the suggestions of the Deutsche Bank (2002) survey, in absolute terms, compliance levels with the *SACGI* are highest (63%) in consumer services firms and least (57%) in technology

[75]As has explained in subsections 5.1.1 and 5.2.2.2 of chapter five, the industrial groupings are based on the JSE's original industrial classifications and were obtained directly from the Information Department of the JSE Ltd.

firms. As Panel *C* of Table 6 indicates, this may be explained by the fact that technology firms have the least cross-listed and big four audited firms in comparison with the other four industries. For example, of the 26 cross-listed firms, only 2 (8%) are technology firms. Similarly, of the 71 firms audited by a big four audit firm, only 12 (17%) are technology firms. In contrast, basic materials and consumer services, for example, have 11(42%) and 5 (19%) firms cross-listed, respectively. Overall, and in comparison with the firm size groupings, the variability in aggregate compliance levels with the *SACGI* observed amongst the sampled firms, is explained less by the industrial groupings than by the firm size classifications.

To determine the corporate governance provisions that account for the significant variability in compliance levels observed between the various industries, compliance levels are computed for the individual corporate governance provisions on an industry by industry basis as has been described in subsection 5.1.3 of chapter five. Table 8 reports the levels of compliance with all the 50 individual corporate governance mechanisms examined by the five major industrial groupings.

Firstly, and consistent with the evidence obtained by investigating the aggregate levels of compliance, while there are substantial industrial differences in the levels of compliance with some of the individual corporate governance provisions, others do not show any substantial industrial differences. For example, and consistent with the findings based on the full sample, there are no differences in the levels of compliance with the *SACGI* in the case of the office of a company secretary (COSEC1) and contribution to the development of journalism (CDFJ). In contrast, and in absolute levels, the remaining 46 (92%) corporate governance provisions show some amount of variability in industrial levels of compliance with the *SACGI*.

For example, for 4 (8%) of the corporate governance provisions, including the disclosure of risk committee members' meetings' attendance record (RISCOM1), encouraging shareholder activism (PSA), the disclosure of policies and practices with reference to black economic empowerment (BEE), and environment (PEP), industrial differences in compliance levels are highest. For these provisions, the difference between the lowest and highest compliance level is well above 30 percentage points.

Table 8: The Levels of Compliance with the Individual Internal Corporate Governance Provisions among the Sampled Firms by Industry

Individual Internal Corporate Governance Provisions of the *SACGI*	Compliance Levels Among Firms (%)					
	All Firm Years	Basic Mat-erials	Con-sumer Goods	Con. Ser-vices	Ind-ust-rials	Tec-hno-logy
1. Board and directors:						
Role duality(DUAL1)	74.2	73	72	73	73	70
Board composition(COM1)	62.8	73	58	64	61	58
Board chairperson(BCP)	32.4	32	40	30	29	31
Frequency of board meetings(FBM1s)	78.0	80	78	95	69	68
Individual directors meetings attendance(IDMA)	67.6	73	62	77	66	60
Disclosure of directors' biography(DDB)	96.8	97	92	100	95	100
Disclosure of director classification(DDC)	73.0	67	74	77	74	73
Evaluation of chair performance & effect.(ACPE)	11.8	11	7	12	21	8
Appraisal of CEO/MD perf. & effect.(ACEOPE)	10.6	8	7	14	16	8
Evaluation of board perf. & effect.(EBPE)	25.8	23	22	31	38	15
Evaluat. of board subcom. perf. & effect.(EBSCPE)	14.8	12	6	15	27	14
Director/officer dealings & securities(DDS)	68.6	71	57	73	79	63
Office of the company secretary(COSEC1)	*100.0*	*100*	*100*	*100*	*100*	*100*
Existence of nomination committee(NCOM1)	46.8	47	43	51	54	39
Composition of nomination committee(COM2)	27.8	31	27	25	42	14
Chairperson of nomination committee(NCCP)	29.2	28	29	30	37	22
Disclosure of nom. com. membership(DM1)	45.6	48	43	45	53	39
Nom. com. members' meetings attend.(INCMMA)	31.8	33	30	31	38	27
Existence of remuneration committee(RCOM1)	90.6	79	97	100	86	91
Composition of remuneration committee(COMP3)	17.2	16	19	12	21	18
Chairperson of remuneration committee(RCCP)	47.4	46	56	42	48	45
Disclosure of rem. com. membership(DM2)	84.2	71	87	94	87	82
Rem. com. members' meetings attendance(IRCMMA)	49.0	40	61	53	46	45
Directors' rem., interests & share options(DDR)	97.8	98	98	100	94	99
Philosophy & procedure of director rem.(DPLR)	36.6	32	37	42	34	38
Director access to free legal advice(DAFIPA)	79.0	84	85	73	88	65
2. Accounting and auditing:						
Existence of audit committee(ACOM1)	90.6	78	94	100	87	94
Composition of audit committee(COM4)	46.6	49	55	50	50	29
Chairperson of audit committee(ACCP)	49.0	49	57	52	53	34
Disclosure of audit com. membership(DM3)	86.0	71	90	96	87	86
Audit com. members' metngs. attendance(IACMMA)	54.4	41	61	65	55	50
Narrative on the 'going-concern'(NGC)	98.2	97	95	100	100	99
3. Risk management and internal audit:						
Disclosure of company risks(DCR)	96.8	87	98	99	100	100
Disclosure of policy on risks management(DPM)	82.4	89	81	83	75	84
Disc. policy on internal control systems(DPI)	90.0	92	88	94	90	86
Existence of risk management committee(RISCOM1)	61.0	43	73	61	69	59
Risk mgt. com. members' metngs. attend.(IRISCMA)	40.6	20	42	52	52	37
4. Ownership structure:						
Internal ownership(INON1)	55.4	50	63	62	54	48

Continuation: Table 8

Individual Internal Corporate Governance Provisions of the *SACGI*	Compliance Levels Among Firms (%)					
	All Firm Years	Basic Mat-erials	Con-sumer Goods	Con. Ser-vices	Ind-ust-rials	Tec-hno-logy
5. Integrated sustainability reporting/non-financial:						
Black economic empowerment(BEE)	68.6	68	52	63	76	84
Policy on HIV/AIDS(HIV)	62.0	69	64	72	60	45
Policy on health and safety(PHS)	53.8	70	49	55	55	40
Policy on employment equity(PEQ)	82.6	72	84	87	78	92
Policy on good environmental practices(PEP)	59.4	81	73	60	46	37
Corporate social investment(CS1)	63.0	54	59	72	69	61
Disclosure of company code of ethics(CSI)	84.6	83	77	90	78	95
Board diversity on the basis of ethnicity(BDIVE1)	76.4	66	63	86	81	86
Board diversity on the basis of gender(BDIVG1)	50.0	44	36	62	55	53
6. Culture of voluntary compliance and enforcement:						
Contribution to devt. of finan. Journalism(CDFJ)	*0.0*	*0*	*0*	*0*	*0*	*0*
Encouraging shareholder activism(PSA	51.6	51	31	55	63	58
Compliance/non-compliance with King II(CNC)	98.8	99	94	97	100	99

By contrast, for 9 (18%) of the corporate governance provisions, variability in industrial levels of compliance is lowest. These are: whether the roles of chairman and CEO or managing director is split (DUAL1), the appraisal of CEO or managing director's performance and effectiveness (ACEOPE), the disclosure of individual directors' biography (DDB), and classification (DDC), the disclosure of the nomination committee members' meetings' attendance records (INCMMA), the disclosure of the individual directors' remuneration, interests and share options (DDR), a narrative on whether the firm will be operating as a 'going-concern' (NGC), the disclosure of internal control policies and systems (DPI), and a positive statement on compliance or non-compliance with the corporate governance proivions of King II (CNC). For these provisions, the variability in the levels of compliance between the least and the highest complied industry is below 10 percentage points.

For the remaining 33 (66%) of the corporate governance provisions, the difference between the least and highest complied industry with the *SACGI* ranges from 10 percentage points in the case of the disclosure of policies and practices regarding employment equity (PEQ) to 27 percentage points with respect to the disclosure of the frequency of board meetings (FBM1s).

Secondly, and on a comparative basis, consumer services and industrials firms have the highest scores in most of the individual corporate governance provisions compared with the other three industries. Specifically, in 14 (28%) and 13 (26%) of 50 the individual corporate governance provisions analysed, the consumer services and industrials firms complied most,

respectively. In the case of consumer services, the provisions include: the frequency of board meetings (FBM1s), the individual directors attendance of board meetings (IDMA), director classification (DDC), the existence of a remuneration committee (RCOM1), and the disclosure of the members of the remuneration committee (DM2), amongst others.

In contrast, technology firms have the lowest scores in most of the corporate governance provisions compared with the other four. Specifically, in 14 (28%) of the corporate governance provisions, technology firms complied the least. These provisions are: director access to free independent legal advice (DAFIPA), and HIV/Aids (HIV), health and safety (PHS), and environment (PEP) policies and practices, to mention but a few. Overall, these differences in the levels of industrial compliance with the individual corporate governance provisions explain the significant variability in the aggregate levels of compliance with the *SACGI* observed in Table 5 between consumer services or industrials and technology firms.

In conclusion, the evidence of significant variability in the levels of compliance with the *SACGI* between the various industries is consistent with suggestions of both the prior accounting disclosure and corporate governance literature. Specifically, and of direct relevance, prior cross-country corporate governance studies (e.g., Klapper and Love, 2004; Durnev and Kim, 2005) and opinion-based surveys (e.g., CLSA, 2000; Deutsche Bank 2002) that include South Africa suggest that corporate governance standards vary across different industries.

On a comparative basis, however, the variability in the levels of compliance with the 50 individual corporate governance provisions observed among the sampled firms is explained less by the industrial groupings than by the firm size classifications. Overall, the significant firm size and industrial variability in corporate governance standards observed among the sampled firms, appears to justify the construction of the sample on the basis of firm size and industry. Unlike prior cross-country studies that include South Africa (e.g., Klapper and Love, 2004; Durnev and Kim, 2005; Chen *et al*., 2009; Morey *et al*., 2009), this arguably reduces sample selection bias and also helps in achieving sufficient variability in the levels of compliance with the corporate governance standards among the sampled firms. It can also be argued that this may improve the generalisability of the results for South African listed firms.

A crucial issue, however, is that the analyses on the characteristics of the *SACGI* so far have been purely descriptive. Also, and as has been explained above, due data limitations, the analyses (descriptive) have concentrated on only five (i.e., firm size, industry, dual-listing,

audit firm size, and year) out of the eight control variables. It did not include capital structure, sales growth, and capital expenditure. Therefore, to ascertain whether the descriptive patterns identified so far hold in a multivariate regression framework, the next section (6.4) explores further the determinants of the *SACGI* by running a multivariate regression of the *SACGI* on all the eight control variables.

6.4 **OLS Regression Results of the *SACGI* on all the Eight Control Variables**

Table 9 contains OLS regressions results of the *SACGI* on all the eight control variables. Column 3 of Table 9 first reports the results of multivariate regression of the *SACGI* on the eight control variables for the pooled sample, whilst columns 4 to 8 present similar results for each of the five firm years. They indicate that the *F-value* of each model is statistically significant at the 1% level. This means that the coefficients on all the eight control variables can jointly explain significant variations in the sampled firms' *SACGI* scores. The adjusted R^2 for each of the five years is between 30% to 47% for the period 2002-2006 and 50% for the combined sample. Statistically, this suggests that between 30% to 47% of the variations in the sampled firms' corporate governance standards (*SACGI* scores) can be explained by the control variables. Over the full five-year sample period, the model possesses an average 50% explanatory power over variations in *SACGI* scores among the sampled firms.

With regard to the pooled sample in column 3 of Table 9, and consistent with the results of the descriptive analyses presented above (see Tables 5, 6 and 7, as well as Figures 3 and 4), the coefficients on firm size, dual-listing, and audit firm size are positive and statistically significant at the 1% level. This implies that larger firms, cross-listed firms, and firms audited by a big four auditing firm, on average, tend to comply better with the *SACGI* than their smaller, non cross-listed and non big four audited counterparts. As has been discussed above, this is not theoretically surprising. This is because the prior literature suggests that larger firms tend to have higher agency problems (e.g., Klapper and Love, 2004; Beiner *et al.*, 2006; Black *et al.*, 2006a). This implies larger firms will require stronger governance regimes to minimise the possibilities of managerial expropriation. Other theoretical reasons, such as greater public scrutiny and financial press following, higher political costs, and greater financial strength, amongst others, that are often associated with larger firms serve as additional incentive for them to comply better with corporate governance provisions than their smaller counterparts.

Similarly, and as has also been explained above, the positive relationship between dual-listing and the *SACGI,* and between audit firm size and the *SACGI* are theoretically expected. In theory, dual-listed firms are more likely to be subjected to additional listing and corporate governance requirements (e.g., Hassan and Marston, 2008; Melvin and Valero, 2009). This means that they are more likely to have better corporate governance standards than their non cross-listed firms. Also, due to their higher reputations, greater independence, and superior resources (financial, human, information and knowledge) advantages (e.g., Pearson, 1980; Shockley, 1981; Sori *et al*., 2006), firms audited by a big four audit firm are more likely to comply better with corporate corporate governance rules than their non big four audited counterparts.

In fact, the statistics contained in Table 6 show that larger firms are more likely to be cross-listed, as well as to be audited by a big four audit firm. Across the five firm years (i.e., columns 4 to 8 of Table 9), the coefficients on firm size, dual-listing, and audit firm size remain positive and statistically significant. Overall, it offers further empirical support to the results of the descriptive analyses that firm size, dual-listing and audit firm size impact positively on the levels of compliance with good corporate governance practices (the *SACGI*).

The coefficient on capital structure, sales growth and capital expenditure in column 3 of Table 9 are positive, but only capital structure is statistically significant. The statistically significant coefficient on capital structure is consitent with theoretical and empirical expectations. Specifically, Bevan and Danbolt (2002, 2004) report a statistically significant positive relationship between gearing and firm size in a sample of UK listed firms. This implies that larger firms tend to have greater debt usage than their smaller counterparts. However, and as has been discussed above, on average, larger sampled firms comply better with the *SACGI* than their smaller counterparts. This appears to explain the statistically significant positive relationship between capital structure and the *SACGI* in column 3 of Table 9.

In contrast, the statistically insignificant coefficients on sales growth and capital expenditure indicate that sales growth and capital expenditure do not have any significant impact on the *SACGI*. The results imply that firms with greater growth opportunities (sales growth) and higher innovative potential (capital expenditure) do not necessarily have better corporate governance standards (*SACGI* scores).

Table 9: OLS Regression of SACGI on the Control Variables

	Exp. Sign	All firm years	2002	2003	2004	2005	2006
Adjusted R^2		.495	.429	.468	.439	.428	.300
Standard Error		15.666	14.378	15.728	16.356	16.609	16.643
Durbin-Watson		.545	1.564	1.729	1.857	1.839	2.027
F-value		35.876(.000)***	8.441(.000)***	9.693(.000)***	8.735(.000)***	8.396(.000)***	5.239(.000)***
No. of Observations		500	100	100	100	100	100
Constant		33.250(.000)***	27.185(.000)***	31.962(.000)***	34.872(.000)***	41.735(.000)***	47.318(.000)***
Firm size	+	1.591(.000)***	1.236(.000)***	.925(.010)***	.927(.008)***	2.591(.000)***	2.343(.000)***
Capital structure	-/+	.048(.028)**	.048(.272)	.034(.481)	.014(.790)	.081(.130)	.054(.330)
Sales growth	+	.049(.161)	.089(.207)	-.060(.430)	.023(.812)	.038(.665)	.178(.071)*
Capital expenditure	+	.225(.203)	.539(.171)	.563(.199)	.807(.053)**	.429(.304)	-.117(.767)
Dual-listing	+	19.032(.000)***	20.428(.000)***	19.579(.000)***	15.265(.001)***	21.568(.000)***	17.956(.000)***
Audit firm size	+	18.913(.000)***	13.265(.000)***	21.925(.000)***	23.638(.000)***	20.712(.000)***	15.872(.000)***
Basic materials		-7.254(.002)***	-6.654(.170)	-10.520(.053)*	-9.738(.081)*	-8.600(.119)	-3.903(.478)
Consumer services		7.955(.000)***	5.305(.250)	6.911(.171)	11.059(.040)**	10.900(.045)**	5.382(.327)
Industrials		2.650(.238)	1.361(.770)	1.251(.806)	2.848(.588)	5.311(.339)	.961(.860)
Technology		2.670(.233)	-1.559(.738)	1.946(.704)	3.538(.500)	4.843(.379)	2.855(.594)
2002		-9.019(.000)***	-	-	-	-	-
2004		6.360(.004)***	-	-	-	-	-
2005		8.792(.000)***	-	-	-	-	-
2006		11.456(.000)***	-	-	-	-	-

Notes: coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison.

Across the five firm years (i.e., columns 4 to 8 of Table 9), the coefficients on capital structure, sales growth and capital expenditure remain statistically insignificant except for sales growth in year 2006 in column 8 of Table 9. Generally, the results suggest that the ability of capital structure, sales growth, and capital expenditure to explain variations in the *SACGI* is weaker compared with that of firm size, dual-listing, and audit firm size.

Finally, and with respect to the coefficients on the industry and year dummies in column 3 of Table 9, they are generally consistent with the results of the descriptive analyses that have been presented above. Consistent with the descriptive statistics that have been reported in Table 5 and by Figure 5, for example, the coefficient on industrials and technology dummies are not statistically significant. By contrast, the coefficient on consumer services firms is positive and statistically significant, whilst the coefficient on basic materials firms is statistically significant, but has a negative sign. This implies that consumer services firms have the highest (highest significant positive coefficient) level of compliance with the *SACGI*, whereas basic materials firms have the least (least significant negative coefficient) level of compliance with the *SACGI*. Generally, the results based on the industry dummies contained in columns 3 to 8 of Table 9 are largely consistent with the conclusions based on the descriptive analyses that the ability of industrial classifications to explain variations in the *SACGI* is relatively weak compared with that of firm size.

Further, the coefficients on all four year dummies in column 3 of Table 9 are statistically significant. In line with the results of descriptive analyses (see Tables 4, 5 and 7, as well as Figures 2, 3 and 4), the coefficient on year 2002 is negative, whereas those on years 2004, 2005 and 2006 are positive. The results imply that compliance levels among the sampled firms were highest in 2006 (highest significant positive coefficient), whilst compliance levels were least among the sampled firms in 2002 (least significant negative coefficient). The results are consistent with theoretical and empirical expectations. Theoretically, and within a voluntary corporate governance regime (‘comply or explain’), it takes time for listed firms to adjust their internal corporate governance structures to reflect the recommendations of corporate governance regulations. Empirically, recent evidence by Shabbir and Padget (2005) and Henry (2008), for example, also suggests that compliance with corporate governance provisions improves over time, using a sample of UK and Australian listed firms, respectively.

To summarise, this section has attempted to ascertain whether descriptive patterns of factors explaining variations in the levels of compliance with the *SACGI* identified in sections

6.2 and 6.3 also hold within a multivariate regression framework. Consistent with the results of the descriptive analyses, the findings based on the multivariate regression analysis indicate that variations in the *SACGI* are largely explained by firm size, dual-listing, and audit firm size, but moderately by industrial groupings. Similarly, the results suggest that, on average, highly geared firms tend to have significantly higher *SACGI* scores than their lowly geared counterparts. The results, however, suggest that the ability of sales growth and capital expenditure to explain variations in the *SACGI* is relatively weak. Finally, and in line with the results of the descriptive analyses, the findings based on the multivariate regression analyis indicates that compliance with the *SACGI* among the sampled firms generally improves over time.

As has been described in section 5.2 of chapter five, the uniqueness of the *SACGI* is that it contains South African context specific affirmative action and stakeholder corporate governance provisions. In the next and last section on the distributional characteristics of the *SACGI*, the levels of compliance with the nine South African context specific affirmative action and stakeholder provisions will be further analysed.

6.5 **Descriptive Statistics Based on the South African Context Specific Issues**

As has been explained in subsection 5.2.2 of chapter five, a sub-index (known as *Social-SACGI*) containing 10 South African context specific affirmative action and stakeholder corporate governance provision, is constructed. The 9 affirmative action and stakeholder provisions include: board diversity on the basis of gender (BDIVG1), and ethnicity (BDIVE1), policies and practices with regard to black economic empowerment (BEE), HIV/Aids (HIV), employment equity (PEQ), health and safety (PHS), environment (PEP), ethics (DCE), and corporate social investment (CSI).

This section, therefore, examines the distributional characteristics of the *Social-SACGI*. Table 10 reports summary descriptive statistics based on the full sample, firm size, industry, dual-listing and audit firm size for the *Social-SACGI*. The rationale is to ascertain whether the firm size and industrial patterns observed in the levels of compliance with the *SACGI* also exist in terms of compliance with the *Social-SACGI*.

Similar to Table 5, Panel *A* of Table 10 reports the aggregate levels of compliance with the *Social-SACGI* for the full sample. Panels *B* and *C* report levels of compliance with the *Social-SACGI* by small and large firms, respectively.

Table 10: Summary Descriptive Statistics for the Nine South African Context Specific Governance Index at Aggregate Levels (the *Social-SACGI)*

The Social-SACGI (South African Context Specific Provisions)	Mean	T-Test	Std. Dev.	Skew-ness	Kurt-osis	Mini-mum	Maxi-mum
Panel A: All Firm Years	*66.71*		*29.21*	*-.60***	*-.86*	*.00*	*100.00*
2002	55.22		28.75	-.07*	-.99	.00	100.00
2003	62.00		28.61	-.45**	-.88	.00	100.00
2004	68.44		29.98	-.71**	-.71	.00	100.00
2005	72.22		29.93	-.96**	-.27	.00	100.00
2006	75.22		26.60	-.99**	-1.06	.00	100.00
Panel B: All Small Firms	*48.22*	*36.98****	*26.50*	*.00*	*-1.16*	*.00*	*100.00*
2002	37.78	34.89***	22.11	.21**	-1.01	.00	77.88
2003	42.44	39.12***	22.66	.12**	-1.21	.00	88.89
2004	49.11	38.67***	26.57	.05*	-1.24	.00	88.89
2005	52.89	38.67***	27.91	.25**	-1.17	.00	100.00
2006	58.89	33.55***	26.49	-.38**	-.89	.00	100.00
Panel C: All Large Firms	*85.20*		*17.92*	*-1.25****	*2.23*	*11.11*	*100.00*
2002	72.67		23.67	-.75**	-.29	11.11	100.00
2003	81.56		16.28	-.58**	.98	33.33	100.00
2004	87.78		15.10	-1.24***	.55	33.33	100.00
2005	91.56		12.20	-2.52***	.47	33.33	100.00
2006	92.44		12.39	-2.80***	.99	33.33	100.00
Panel D: All B. Material Firms	*67.44*	*1.56*	*33.51*	*-.69***	*-1.06*	*.00*	*100.00*
2002	60.56	10.00	33.31	-.32**	-1.58	.00	100.00
2003	62.78	2.22	36.46	-.50**	-1.40	.00	100.00
2004	67.78	2.78	33.99	-.68**	-1.14	11.11	100.00
2005	68.89	5.00	32.56	-.86**	.79	11.11	100.00
2006	77.22	2.22	28.49	-1.46***	1.11	11.11	100.00
Panel E: All Con. Goods Firms	*61.50*	*4.39*	*29.28*	*-.37***	*-1.15*	*11.11*	*100.00*
2002	50.56	0.00	29.17	.20**	-1.07	11.11	100.00
2003	57.78	7.22	29.29	-.49**	-1.09	11.11	100.00
2004	64.44	.44	29.63	-.31**	-.79	11.11	100.00
2005	61.11	7.78	30.05	-.71**	-.89	11.11	100.00
2006	70.56	4.44	28.45	-.69**	-.75	11.11	100.00
Panel F: All C. Services Firms	*71.89*	*6.00**	*24.69*	*.60***	*-.60*	*11.11*	*100.00*
2002	55.56	5.00	24.18	.00	-1.09	22.22	100.00
2003	65.00	0.00	24.26	-.53**	.20	11.11	100.00
2004	77.78	12.78*	21.33	-.84**	-.65	33.33	100.00
2005	81.11	7.22	20.74	-.86**	-.63	33.33	100.00
2006	80.00	5.00	24.34	-1.18***	.43	22.22	100.00

Notes: The *t-test* in column 3 is the independent samples *t-test* for equality of means. The mean differences in Panel *B* test for equality of means between all large and all small firms, while those in Panels *D, E,* and *F* test for equality of means between all basic materials firms, all consumer goods firms, and all consumer services firms, and all technology firms, respectively. A mean difference with (***), and (*) indicates that the null hypothesis that the means are equal is rejected at the 1%, and 10% significance level, respectively. The skewness and kurtosis test statistics in columns 5 and 6, respectively, test for normal distribution. A test statistic with (***), (**), and (*) means that the null hypothesis that the *Social-SACGI* is normally distributed is rejected at the 1%, 5%, and 10% significance level, respectively.

Continuation: Table 10

The Social-SACGI (South African Context Specific Provisions)	Mean	T-Test	Std. Dev.	Skew-ness	Kurt-osis	Mini-mum	Maxi-mum
Panel G: All Industrials Firms	*66.44*	*.56*	*31.51*	*-.72***	*-.78*	*.00*	*100.00*
2002	58.89	8.33	30.61	-.53**	-.84	.00	100.00
2003	59.44	7.00	29.79	-.49**	-.95	.00	100.00
2004	67.22	5.56	33.52	-.74**	-.82	.00	100.00
2005	71.11	2.78	33.31	-.99**	-.30	.00	100.00
2006	75.56	.56	29.86	-1.55***	-.83	.00	100.00
Panel H: All Technology Firms	*65.89*		*25.67*	*-.37***	*-.98*	*11.11*	*100.00*
2002	50.56		22.93	.08*	-.69	11.11	100.00
2003	65.00		24.79	-.30**	-.88	22.22	100.00
2004	65.00		25.31	-.33**	-.96	22.22	100.00
2005	73.89		26.80	-.97**	-.14	11.11	100.00
2006	75.00		23.05	-.69**	-.80	33.33	100.00
Panel I: All Dual-listed Firms	*86.04*	*25.77****	*20.20*	*-2.36****	*6.50****	*.00*	*100.00*
2002	78.67	31.26***	26.04	-1.92***	3.78**	.00	100.00
2003	83.11	28.15***	23.32	-1.99***	5.53***	11.11	100.00
2004	87.56	25.49***	20.11	-2.60***	8.27***	11.11	100.00
2005	88.00	21.04***	19.49	-2.79***	9.82***	11.11	100.00
2006	92.89	22.96***	10.58	-1.45***	1.24	66.67	100.00
Panel J: All Non-Dual-listed	*60.27*		*28.91*	*-.30***	*-1.11*	*.00*	*100.00*
2002	47.41		25.27	.21**	-.86	.00	100.00
2003	54.96		27.58	-.20**	-1.00	.00	100.00
2004	62.07		28.78	-.44**	-1.04	.00	100.00
2005	66.96		29.73	-.68**	-.80	.00	100.00
2006	69.93		27.87	-.74**	-.61	.00	100.00
Panel K: All Big Four Audited	*73.21*	*22.41****	*27.88*	*-1.08***	*.17*	*.00*	*100.00*
2002	62.13	23.82***	28.64	-.47**	.79	.00	100.00
2003	68.39	22.03***	28.15	-.95**	-.06	.00	100.00
2004	75.74	25.17***	27.04	-1.29***	.77	.00	100.00
2005	78.40	21.31***	26.62	-1.49***	1.36	.00	100.00
2006	81.38	19.69***	25.04	-1.75***	2.38	.00	100.00
Panel L: All Non-Big Four Aud.	*50.80*		*26.21*	*.26***	*-1.04*	*11.11*	*100.00*
2002	38.31		21.33	.61**	-.30	11.11	88.89
2003	46.36		23.58	.53**	-.60	11.11	100.00
2004	50.57		25.99	.19**	-1.09	11.11	100.00
2005	57.09		29.21	-.15**	-1.23	11.11	100.00
2006	61.69		25.47	.02*	-1.26	22.22	100.00

Notes: The *t-test* in column 3 is the independent samples *t-test* for equality of means. The mean differences in Panel *G* test for equality of means between all industrial firms and all technology firms. The mean differences in Panel *I* test for equality of means between all dual-listed and all non-dual-listed firms, while those in Panel *K* test for equality of means between all big four audited firms and all non-big four audit firms. A mean difference with (***) indicates that the null hypothesis that the means are equal is rejected at the 1% significance level. The skewness and kurtosis test statistics in columns 5 and 6, respectively, test for normal distribution. A test statistic with (***), (**), and (*) means that the null hypothesis that the *Social-SACGI* is normally distributed is rejected at the 1%, 5%, and 10% significance level, respectively.

Similarly, the *t-test* in column 3 of Table 10 is the independent samples *t-test* for equality of means between large and small firms, technology firms and each of the remaining four industries, dual-listed firms and non dual-listed firms, and big four audited and non-big

four audited firms, respectively. Several findings emerge from Table 10. Firstly, consistent with the evidence of wide variability in aggregate levels of compliance with the *SACGI*, Panel *A* suggests that there is a substantial degree of dispersion in the levels of compliance with the *Social-SACGI* among the sampled firms. The scores range from a minimum of 0% (i.e., 0 out of 9) to a maximum 100% (i.e., 9 out of 9) with the average sampled firm complying with 67% of the 9 South African context specific affirmative action and stakeholder corporate governance provisions analysed. This is higher when compared with the mean level of compliance with the *SACGI* of 60%.

As will be discussed further in chapters seven and eight, this also implies that any financial performance consequences of complying with the *Social-SACGI* can be expected to be similar in direction to that of the *SACGI*. However, if firms with better corporate governance standands (as measured by compliance with the corporate governance provisions of King II) do generate higher financial returns, then it can be argued that the magnitude of complying with the *Social-SACGI* (67%) will be expected to be higher than that of the *SACGI* (60%) for the sampled firms.

Secondly, and in line with the patterns observed with the *SACGI*, compliance with the *Social-SACGI* improves over time. While the average firm complied with 55% of the 9 affirmative action and stakeholder corporate governance provisions in 2002, it increased to 75% in 2006, a percentage point difference of 20. Thirdly, the *Social-SACGI* depicts similar distributional characteristics exhibited by the *SACGI*. All show similar large variability in the levels of compliance with the *Social-SACGI* and also depict similar large standard deviations.

Similarly, most of them are mildly (in comparison with a normal distribution) skewed to the right or left, but normally peaked. As has already been explained, the mild nature of the deviations from normal distributional data properties depicted by the *Social-SACGI* is in line with the findings reported by prior studies that have applied OLS technique in estimating their structural equations. As has been explained above, this is relevant because it implies that it may be statistically appropriate to carry out OLS estimations. Fourthly, and similar to the *SACGI*, Panels *B* and *C* of Table 10, in addition to Figure 6 suggest that there is substantial variability in the aggregate levels of compliance with the *Social-SACGI* between large and small firms. Specifically, the average small firm complied with 48% of the 9 affirmative action and stakeholder corporate governance provisions compared to 85% of large firms, a statistically significant percentage point difference of 37.

As has been explained in subsection 5.2.2 of chapter five, this is not theoretically surprising. This is because compliance with these affirmative action and stakeholder corporate governance provisions places additional cost implications on firms, which larger firms can be expected to better afford than smaller firms. More importantly, political cost theory suggests that larger firms are more susceptible to political threats of break-ups, nationalisation, regulation, and taxation (Watts and Zimmerman, 1978, p.115; Andreasson, 2009, p.22). Therefore, larger firms can be expected to comply better with the *Social-SACGI* in order to reduce potential political costs, and also gain acess to critical resources, such as tax-holidays, subsidies and government contracts.

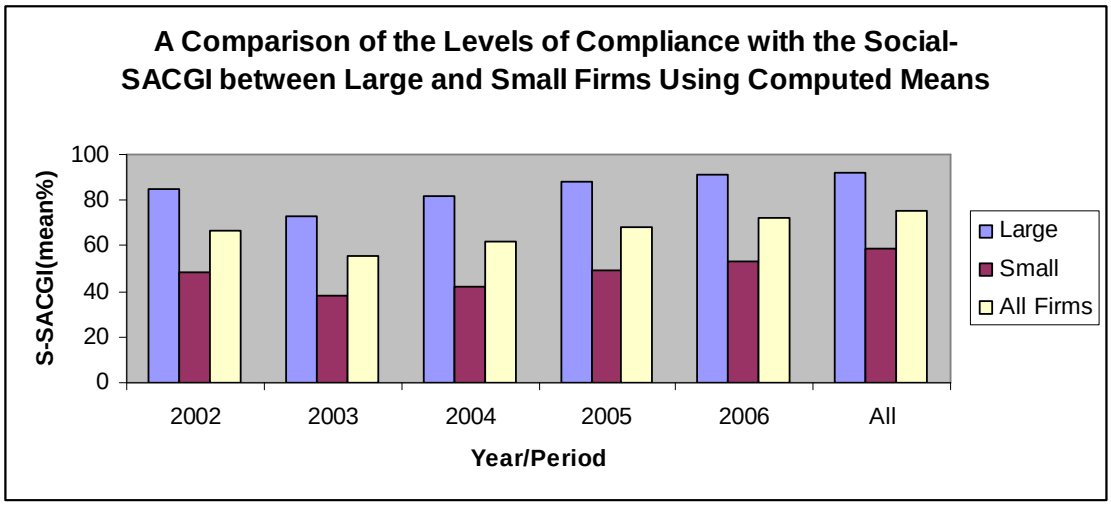

Figure 6: Social-SACGI Compliance Levels by Firm Size

Fifthly, and in line with the *SACGI*, Panels *I* to *L* of Table 10, as well as Figure 7 indicate that the variability in the levels of compliance with the *Social-SACGI* can also be explained by dual-listing and audit firm size. Specifically, they show that while the average cross-listed firm complied with 86% of the 9 affirmative action and stakeholder corporate governance provisions, its non cross-listed counterpart complied with 60% of the provisions, a statistically significant percentage point difference of 26. Similarly, Panels *K* and *L* of Table 10, in addition to Figure 7 indicate that there are significant differences in the levels of compliance with the *Social-SACGI* between big four and non big four audited firms. Specifically, the average big four audited company complied with 73% of the 9 affirmative action and stakeholder corporate governance provisions compared with 51% by a non big-four audited firm, a statistically significant percentage point difference of 22.

As has been discussed in subsection 6.3, the significant differences observed in the levels of compliance with the *Social-SACGI* on the basis of dual-listing and audit firm size is theoretically expected. This is because the sample suggests that cross-listed firms are likely to be large and be subjected to extra rigorous corporate governance requirements. This seems to help cross-lited firms to have better corporate governance standards than their non dual-listed counterparts. Similarly, the sample indicates that big four audited firms are more likely to be large and cross-listed, which suggests they are also more likely to have better corporate governance standards than their non big-four audited counterparts.

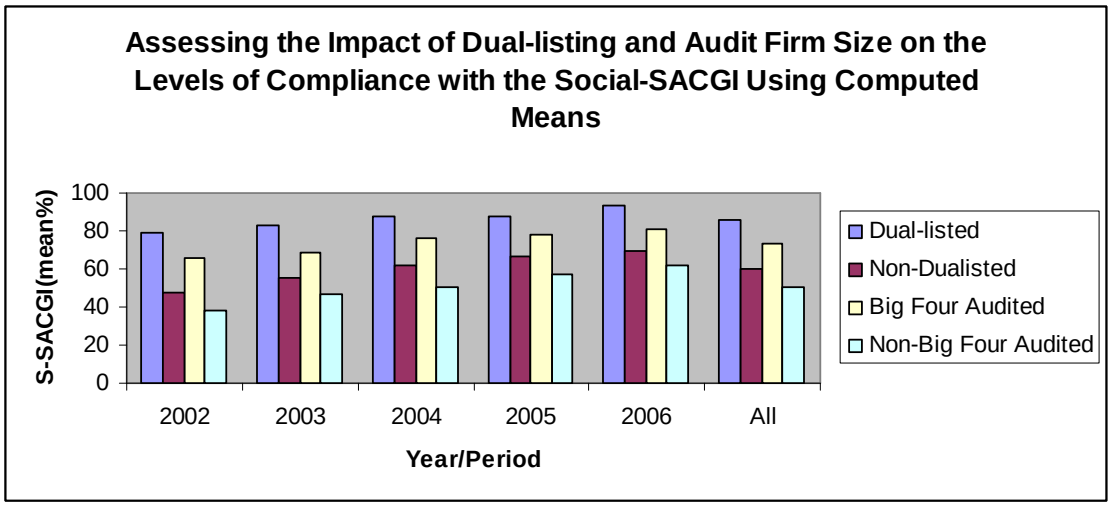

Figure 7: Social-SACGI Compliance Levels by Dual-listing and Audit Firm Size

Finally, and in line with the *SACGI*, Panels *D* to *H* of Table 10 suggest that there is some amount of variability in levels of compliance with the *Social-SACGI* across the five industries. Specifically, the average basic materials firm complied with 67% of the 9 affirmative action and stakeholder corporate governance provisions in comparison to 62%, 72%, 66%, and 66% by consumer goods, consumer services, industrials, and technology firms, respectively. However, and unlike the firm size, dual-listing, and audit firm size groupings, only consumer services firms show significantly higher levels of compliance with the *Social-SACGI* than those of technology firms, the industry with the least aggregate levels of compliance with the *Social-SACGI*.

To ascertain which of the 9 individual affirmative action and stakeholder corporate governance provisions account more for the variability in aggregate levels of compliance with the *Social-SACGI* observed among the sampled firms, the levels of compliance with the 9

individual provisions are further examined. Table 11 presents the levels of compliance among the sampled firms with the 9 South African context specific affirmative action and stakeholder corporate governance provisions. To facilitate easy comparison, Panels *A* and *C* repeat the pooled and industry levels of compliance reported in Tables 4 and 8 for the 9 affirmative action and stakeholder corporate governance provisions, respectively.

Firstly, and similar to the results of the full sample, Panel *A* of Table 11 suggests that there is considerable amount of variation in the levels of compliance with the South African context specific affirmative action and stakeholder corporate governance issues. The affirmative action and stakeholder provision with the weakest compliance score (50%) is board diversity on the basis of gender (BDIVG1), whilst the issue with the highest score (85%) is the disclosure of company code of ethics (DCE). For the remaining 7 South African context specific affirmative action and stakeholder provisions, including board diversity on the basis of ethnicity (BDIVE1), policies and practices with regard to black economic empowerment (BEE), HIV/Aids (HIV), health and safety (PHS), employment equity (PEQ), environment (PEP), corporate and social investment (CSI), compliance levels are above 53%. This is higher when compared with the average levels of compliance with some of the conventional corporate governance provisions, such as independent board chairman (BCP) among the sampled firms.

Secondly, and similar to the results of the full sample, Table 7 suggested that the variability in the aggregate levels of compliance with the *Social-SACGI* can be explained by firm size. Specifically, Table 7 indicated that larger firms tended to have significantly higher scores than smaller firms for all the 9 affirmative action and stakeholder corporate governance provisions examined. The provision with the highest significant difference between large and small firms is corporate social investment (CSI) with a percentage point difference of 59.

By contrast, the provision with the least significant difference between large and small firms is the disclosure of company ethics (DCE) with a percentage point difference of 16. For the remaining 7 affirmative action and stakeholder corporate governance provisions, the variability in the levels of compliance between large and small firms ranges from 20 percentage points with respect to employment equity (PEQ) to 52 percentage points in the case of HIV/Aids (HIV).

Table 11: Compliance Levels Among the Sampled Firms with the Nine Individual South African Context Specific Corporate Governance Provisions

Individual Internal Corporate Governance Provisions (South African Context Specific Issues)	Compliance Levels Among Firms (%)					
	All	2002	2003	2004	2005	2006
Panel A: South African Context Specific Issues						
Black economic empowerment(BEE)	68.6	51	60	71	77	84
Policy on HIV/AIDS(HIV)	62.0	45	59	66	70	70
Policy on health and safety(PHS)	53.8	36	42	59	64	68
Policy on employment equity(PEQ)	82.6	80	80	84	83	86
Policy on good environmental practices(PEP)	59.4	47	53	62	67	68
Corporate social investment(CSI)	63.0	54	63	62	67	69
Disclosure of company code of ethics(DCE)	84.6	76	83	85	89	90
Board diversity on the basis of ethnicity(BDIVE1)	76.4	69	73	76	78	86
Board diversity on the basis of gender(BDIVG1)	50.0	39	45	51	55	60
Panel B: Other Board Diversity Measures						
Board diversity(eth.& gen.) as a % of board size	23.3	17.1	19.8	23.8	26.9	28.9
Women(gender) as a % of board size	8.0	5.8	6.7	7.7	9.3	10.3
Non-whites(ethnicity) as a % of board size	19.7	13.8	15.8	19.8	23.1	24.5
Non-white women (gend.) as a % of board size	4.4	2.4	2.8	4.1	5.6	7.2
Non-white men (gender) as a % of board size	15.3	11.3	13.1	15.7	17.6	18.6
Women (gender) as a % of board diversity	34.3	33.8	33.7	34.0	34.7	35.5
Non-whites(ethnicity) as a % of board diversity	84.4	80.6	79.7	84.6	85.7	88.3
Non-white women as a % of women (gender)	55.6	40.7	41.7	53.3	59.8	69.9
Non-white women (gender) as a % of non-white	22.6	17.1	17.4	20.8	24.2	28.1
%boards with at least 1 non-white man and woman	41.6	28.0	35.0	43.0	46.0	54.0
%boards with at least 1 non-white	75.0	71.0	74.0	76.0	78.0	86.0
%boards with at least 1 woman	50.0	38.0	45.0	51.0	56.0	60.0
%boards with at least 1 non-white man	70.4	63.0	65.0	69.0	75.0	80.0
%boards with at least 1 non-white woman	34.0	20.0	23.0	33.0	42.0	52.0
Panel C: Industry	*All*	*BM*	*CG*	*CS*	*IN*	*TE*
Black economic empowerment(BEE)	68.6	68	52	63	76	84
Policy on HIV/AIDS(HIV)	62.0	69	64	72	60	45
Policy on health and safety(PHS)	53.8	70	49	55	55	40
Policy on employment equity(PEQ)	82.6	72	84	87	78	92
Policy on good environmental practices(PEP)	59.4	81	73	60	46	37
Corporate social investment(CS1)	63.0	54	59	72	69	61
Disclosure of company code of ethics(CSI)	84.6	83	77	90	78	95
Board diversity on the basis of ethnicity(BDIVE1)	76.4	66	63	86	81	86
Board diversity on the basis of gender(BDIVG1)	50.0	44	36	62	55	53

Notes: Abbreviations are defined as follows: basic materials firms (BM), consumer goods firms (CG), consumer services firms (CS), industrial firms (IN), and technology firms (TE).

Thirdly, and in line with the full sample, Panel *C* of Table 11 suggests that there is some amount of variability in the levels of compliance with the 9 provisions across the five industries. Consumer services firms have the highest compliance levels in 3 out of the 9 provisions. These are: HIV/Aids (HIV), corporate social investment (CSI), and board diversity on the basis of gender (BDIVG1). For black economic empowerment (BEE), employment equity (PEQ), and the disclosure of company ethics (DCE), technology firms complied most,

while basic materials firms complied most with the health and safety (PHS), and environment (PEP) provisions.

In contrast, consumer goods firms complied least with five provisions. These are: black economic empowerment (BEE), health and safety (PHS), the disclosure of company ethics (DCE), board diversity on the basis of ethnicity (BDIVE1), and gender (BDIVG1). Similarly, technology firms complied least with three provisions. These are: HIV/Aids (HIV), health and safety (PHS), and environment (PEP), while basic materials firms complied least with corporate social investment (CSI). The variability in compliance levels within the South African context specific corporate governance and stakeholder provisions across the five industries means that some industries may be more sensitive to some of the special provisions than others. For example, basic materials firms are more exposed to environmental issues, whilst black empowerment deals, especially involving government contracts, are more common among the technology firms.

To conclude, this subsection has examined the levels of compliance among the sampled firms with the South African context specific affirmative action and stakeholder corporate governance provisions. Consistent with the *SACGI*, there is significant variability in the levels of compliance with the *Social-SACGI* among the sampled firms. Similar to the *SACGI*, the variability in the levels of compliance amongst the sampled firms, can be explained by size, dual-listing, audit firm size, and industry effects. Specifically, large, dual-listed, and big four audited firms have significantly higher levels of compliance with the *Social-SACGI* than their small, non dual-listed, and non-big four audited counterparts, respectively. Consumer services firms also have significantly higher levels of compliance with the *Social-SACGI* than their technology counterparts, the industry with the least aggregate levels of compliance with the *Social-SACGI*. Similar to the results of the *SACGI*, the variability in the levels of compliance with the *Social-SACGI* is explained more by firm size than by industry differences.

6.6 **Other Key Trends and Measures of Board Diversity**

Finally, to ascertain the level of diversity within South African corporate boards, Panel *B* of Table 11 reports trends with reference to other key measures of board diversity. It shows that the average sampled firm has approximately 23% of its board members as women (gender diversity) and non-whites (ethnicity). This means that the average South African listed firm's

board[76] is dominated (77%) by white males. Swartz and Firer (2005) suggest that the low representation of non-whites in particular on South African corporate boards may be due to lack of experience and qualifications caused by the lingering negative social and economic effects of Apartheid. As will be discussed further in chapters eight and ten, the small number of women and non-white representation on South African corporate boards also implies that they may not be able to have significant impact on firm financial performance.

Empirically, the finding is in line with the results of prior corporate governance studies (e.g., Brammer *et al*., 2007; Fraucoeur *et al*., 2008). For example, and of special interest to this study, using a sample of 117 South African listed firms in 2003, Swartz and Firer (2005) report that the average non-white and women representation on South African corporate boards is 20%. Similarly, in a sample of 543 UK firms, Brammer *et al*. (2007) find that only 13% of the average UK corporate board members originate from diverse ethnic and gender backgrounds.

Of the 23% diverse board members, only 34% are women. In fact, of the approximately 20% non-whites found on an average firm's board, only 22% are women. Overall, only 8% of the board members of an average sampled firm are women of which slightly more than 4% (i.e., 56% as a proportion of women) are women of colour. This is far less than the number of non-white males (15%) as percent of the average board size. The evidence of low representation of women on South African corporate boards is also consistent with the findings of prior studies (e.g., Carter *et al*., 2003; Singh and Vinnicombe, 2004). For instance, Swartz and Firer (2005) report that the board of an average South African listed firm consisted of only 6% of women in 2003. Similarly, Singh and Vinnicombe (2004) find that the percentage of women who held FTSE 100 directorships was only 7% in 2002.

An interesting finding, however, is that the average South African corporate board has more non-white women (56%) representation than their white counterparts. Similarly, the percentage of non-whites as a percentage of board diversity is 84%, which is relatively high. Also, irrespective of the board diversity measure used, diversity among South African corporate boards has substantially improved over time. For instance, the average sampled firm's board had only 17% of its members originating from diverse ethnic and gender backgrounds in 2002. By 2006, it had increased to 29%, a 12 percentage point increase over the five-year period.

[76]As will be discussed further in chapter seven, the average South African listed firm has a board size of 9.69 or approximately 10 members.

In terms of the distribution of non-whites and women across the sampled firms, similar patterns are observed. Approximately 42% of the sampled firms have at least a non-white and a woman representation on their boards. This means that 58% of the sampled firms do not have at least a woman and non-white on their boards. As has been noted in subsection 4.2.2.2 of chapter four, the large numbers of zero observations of board diversity among the sampled firms imply that it will be inappropriate to measure board diversity as a continuous variable. By contrast, 70% of the sampled firms have at least a non-white man representation, suggesting that there is relatively less women representation on South African corporate boards. In fact, only 50% of the sampled firms have at least one woman board representation, of which 34% (68% by proportion of women) are at least represented only by a non-white woman. Overall, 75% of the sampled firms have at least a non-white man or non-white woman representation on their boards.

Also, South African listed firms with board members from diverse gender and ethnic backgrounds are generally increasing. For example, only 28% of the sampled firms had at least one woman and a non-white representation on their boards in 2002. It consistently increased to 35%, 43%, 46%, and 54% in 2003, 2004, 2005, and 2006, respectively. Similarly, only 38% of the sampled firms had at least one woman representation on their boards in 2002. It also consistently increased to 45%, 51%, 56%, and 60% in 2003, 2004, 2005, and 2006, respectively.

The increasing diversity among South African corporate boards may be explained by the increasing willingness of the sampled firms to comply with employment equity and black empowerment provisions. It may also explain the increasing representation of non-white women on corporate boards. Black women directors in particular command a premium in South Africa because they tend to satisfy both ethnic and gender diversity requirements. Despite the improving board diversity, however, the findings also suggest that board members from diverse backgrounds (ethnic and gender) within South African listed firms are still very small in number.

6.7 **CHAPTER SUMMARY**

This chapter has discussed the South African Corporate Governance Index (the *SACGI*). It attempted to achieve three main objectives. Firstly, it sought to provide a detailed description of the *SACGI* using a number of descriptive statistics. In this regard, the chapter

provided a detailed description of the *SACGI* based on the full sample. Generally, it showed that there were substantial variations in the levels of compliance with the *SACGI* amongst the sampled firms.

At the aggregate levels, the scores ranged from a minimum of 6% (3 out of 50) to a maximum of 98% (49 out of 50) with the average South African listed firm complying with 60% (30) of the 50 corporate governance provisions analysed. For the individual corporate governance provisions, there were variations in the levels of compliance in 48 (96%) of them. Overall, an examination of the distribution of the pooled sample showed that despite the expectation that the introduction of the King Reports will speed-up convergence of corporate governance standards, there are still substantial variations in the levels of compliance with the individual corporate governance provisions among South African listed firms.

However, and in line with the results of prior studies that have examined the levels of compliance with a code of corporate governance in a voluntary compliance regime, the findings indicate that corporate governance standards have generally improved among South African listed firms. A major policy implication of this finding is that the current UK-style voluntary compliance regime ('comply or explain') is at least working to some extent, and thus seems to be appropriate for South Africa.

The second objective of the chapter has been to ascertain whether the observed variability in the levels of compliance with the *SACGI* can be explained by firm size, industry, dual-listing and audit firm size. Similar to the the prior evidence, the analyses show that the observed variability in the levels of compliance with the *SACGI* can largely be explained by firm size, and moderately by industry. Specifically, and at the aggregate levels, the average large firm complied with 75% of the 50 corporate governance provisions analysed in comparison with 44% by the average small firm.

Examination of the individual corporate governance provisions, also showed that in 46 (92%) out of the 50 corporate governance provisions investigated, compliance levels among large firms were significantly higher than small firms. The analyses also indicated that large firms are more likely to be dual-listed and be audited be a big four audit firm with better corporate governance standards than their non cross-listed and non big-four audited counterparts, respectively. Similarly, the analyses suggested that some of the observed variability in the levels of compliance with the *SACGI* can be explained by industrial groupings, but to a lesser degree when compared with the firm size classifications. Specifically, and at the aggregate levels, the consumer services firms complied most with the

SACGI. By contrast, technology firms complied least with the *SACGI*. The results based on multivariate regression analysis generally offered empirical support to those of the descriptive analyses that variations in the *SACGI* can largely be explained by firm size, dual-listing, and audit firm size, but moderately by industrial groupings.

The final objective of the chapter has been to assess the levels of compliance with the nine South African context specific affirmative action and stakeholder corporate governance provisions (the *Social-SACGI*). Consistent with the results based on the full sample, the statistics indicated that there is a considerable amount of variation in the levels of compliance with the *Social-SACGI*. Similarly, the analyses suggested that the observed variability in the levels of compliance with the social-*SACGI* can largely be explained by firm size and moderately by industry.

Finally, analyses of the trends in board diversity showed that irrespective of the measure used, diversity among South African corporate boards has substantially improved over time. Despite the improving board diversity, however, the findings also suggest that board members from diverse backgrounds (ethnic and gender) within South African listed firms are still very small in number.

In the next chapter (chapter seven), the main aim will be to present descriptive statistics, as well as test the Ordinary Least Squares (OLS) regression assumptions. Specifically, descriptive statistics of the financial performance, control and the remaining corporate governance variables will be reported and discussed. The OLS regression assumptions that have been mentioned in chapter five will then be tested.

CHAPTER SEVEN

DESCRIPTIVE STATISTICS AND OLS ASSUMPTIONS

7. INTRODUCTION

This chapter discusses the data and the Ordinary Least Squares (OLS) regression assumptions. It seeks to achieve three main objectives. First, it seeks to explain how outliers in the financial performance and control variables were dealt with. Second, it presents detailed descriptive statistics of the dependent (financial performance) and the other independent (corporate governance) variables. Finally, it tests the OLS regression assumptions of multicollinearity, autocorrelation, normality, homoscedasticity, and linearity. The rest of the chapter is organised as follows. Section 7.1 reports detailed descriptive statistics for the dependent and the remaining independent variables. Section 7.2 tests the OLS regression assumptions, while section 7.3 summarises the chapter.

7.1 SUMMARY DESCRIPTIVE STATISTICS OF THE FINANCIAL PERFORMANCE MEASURES AND OTHER CONTINUOUS INDEPENDENT VARIABLES

This section presents descriptive statistics relating to the proxies for the dependent (financial performance), the other independent (corporate governance), and the control (exogenous) variables. However, before presenting the descriptive statistics, the next subsection first describes how outliers in the financial performance and the control variables were treated.

7.1.1 Dealing with Outliers in the Financial Performance and Control Variables

There were extreme values in the financial performance proxies, namely Tobin's Q (Q-ratio) and return on assets (ROA), and in the control variables, especially gearing (GEAR), and sales growth (SGROWTH). Outliers were also present in the alternative corporate governance mechanism – leverage (LEV). For example, the minimum (maximum) value for sales growth was -96% (2,236%), while that of gearing was -221% (6,085%). Similarly, the minimum (maximum) value for ROA was -240% (60%), the value for Tobin's Q was .15 (7.98), and the value for leverage was 0% (157%), respectively. Apart from being extreme values, some of the figures did not make economic or theoretical sense. For example, a

gearing ratio above 100% is theoretically meaningless. This is because, in theory, a firm can either use a combination of debt and equity or a maximum of 100% debt or equity.

Therefore, to limit the effects of outliers, and specifically following Klapper and Love (2004, p.708), and Chhaochharia and Grinstein, (2009, p.242), the financial performance and the control variables were winsorised at the 5% and 95% levels. Specifically, all the 500 firm year values of each of the financial performance and control variables were ranked in ascending order. The top and bottom 25 values of each of the financial performance and control variable were replaced with the 26^{th} and 475^{th} values, respectively. As will be explained further below, the statistics that will be reported and discussed for the control and financial performance variables will be values after winsorisation.

First, and as has been discussed below, the financial performance and control variables were winsorised because the presence of outliers could seriously violate the OLS assumptions upon which the models estimated in this study will be based. Second, winsorising or excluding outliers is a common practice within the corporate governance literature (Durnev and Kim, 2005, p.1473; Beiner *et al*., 2006, p.259; Black *et al*., 2006a, p.379; Bruno and Claessens, 2007, p.17; and Chhaochharia and Grinstein, 2007, p.1796, amongst others). Finally, and following prior studies (e.g., Klapper and Love, 2004; Durnev and Kim, 2005), the corporate governance variables were not winsorised[77]. In fact, and as will be discussed below, the corporate governance variables generally have less extreme values.

Table 12 contains the summary descriptive statistics of all the variables for all the 500 firm years, as well as their respective annual values. Panels *A* and *B* of Table 12 present summary statistics for the dependent variables (financial performance), Panels *C* to *I* of Table 12 report summary statistic for the other continuous independent/alternative corporate governance mechanisms, whilst Panels *J* to *M* of Table 12 do the same for the control variables. Similar to the *SACGI*, for each variable, the mean, standard deviation, skewness, kurtosis, minimum and maximum values will be reported.

7.1.2 **Descriptive Statistics of the Financial Performance Measures**

Panels *A* and *B* of Table 12 report descriptive statistics for the dependent variables. First, Panel *A* of Table 12 shows that the ROA after winsorisation ranges from a minimum of

[77]The whole regression results that will be reported and discussed below were first run with the outliers included before winsoring at the 5% and 95% levels. The results were essentially the same as those that will be reported below. As has been explained above, the main rationale for winsoring is to help minimise potential serious violations of the OLS assumptions upon which the regression analyses will be based.

-21% to a maximum of 30% with an average of 9% for the overall sample period. The standard deviation is 12.39, indicating that there is a significant variation in accounting returns among the sampled firms. Panel *B* of Table 12 suggests that the Q-ratio after winsorisation also ranges from a minimum of .63 and maximum of 3.01 with an average of 1.49 for the combined sample. The standard deviation of .65 indicates that there is less variation in market performance among the sampled firms. Consistent with the suggestions of the normal histogram plot (which for purposes of brevity not presented here), the skewness and kurtosis statistics indicate that the performance variables are mildly (relative to a normal distribution) non-normal. For example, the skewness (absolute critical value for accepting skewness is zero) statistic of -.67 for the ROA indicates that the distribution departs from symmetry with a longer than a normal left tail.

By contrast, the kurtosis statistic (the absolute critical value for rejecting kurtosis is three) of .43 indicate that the null hypothesis that the ROA is mesokurtically distributed cannot be rejected. The positive sign, however, indicates that the ROA values cluster more and have longer tails than that of a normal distribution.

Similarly, in line with the suggestions of the normal histogram plot (for reasons of brevity not reported here), the skewness statistic of .85 for the Q-ratio suggests that the distribution departs from symmetry with a longer than a normal right tail[78]. The kurtosis statistic of -.01 suggests that the null hypothesis that the Q-ratio is mesokurtically distributed cannot be rejected. The negative sign, however, means that the Q-ratio values cluster less and have shorter tails than that of a normal distribution. As has been discussed in chapter six, the mild (in comparison with a normal distribution) nature of the non-normal distributional characteristics depicted by the variables are consistent with the reported findings of previous studies that have carried out OLS estimations (Cheung and Wei, 2006, p.913; Haniffa and Hudaib, 2006, pp. 1048, 1050-1051; Francoeur *et al*., 2008, p.88). This means that it may be statistically tolerable to conduct OLS estimations.

[78]To reduce non-normalities in the variables, rank and natural log transformations of all the continuous variables used in this study were taken both before and after winsorising (e.g., Gujarati, 1995; 2003; Brooks, 2003; Maddala, 2005). With the exception of firm size (total assets), the distributions and estimations based on the rank and natural log transformations did not produce better results than those based on the actual levels of all the variables.

Table 12: Summary Descriptive Statistics of the Dependent and All Continuous Independent Variables Based on All (500) Firm-Year Observations

Dependent/Independent Variables	Mean	Std. Dev.	Skew-ness	Kurt-osis	Mini-mum	Maxi-mum
Panel A: Return on assets (%) All	*8.75*	*12.39*	*-.67***	*.43*	*-21.38*	*29.85*
2002	7.71	12.41	-.75**	.83	-21.38	29.85
2003	8.72	11.46	-.72**	1.07	-21.38	29.85
2004	7.11	13.25	-.52**	-.25	-21.38	29.85
2005	9.20	13.05	-.76**	.39	-21.38	29.85
2006	11.03	11.52	-.56**	.50	-21.38	29.85
Panel B: Tobin's Q All	*1.49*	*.65*	*.85***	*-.01*	*.63*	*3.01*
2002	1.26	.55	1.37***	1.78	.63	3.01
2003	1.24	.53	1.26***	1.45	.63	2.96
2004	1.43	.55	.80**	.78	.63	3.01
2005	1.68	.68	.51**	-.67	.63	3.01
2006	1.85	.70	.40**	-.93	.63	3.01
Panel C: Board size All	*9.69*	*4.33*	*1.05***	*2.31*	*3.00*	*31.00*
2002	9.47	4.34	1.01**	2.16	3.00	28.00
2003	9.44	4.26	.96**	1.78	3.00	27.00
2004	9.68	4.47	1.17***	3.10*	3.00	30.00
2005	9.84	4.48	1.35***	3.95**	4.00	31.00
2006	10.04	4.14	.76**	.63	4.00	24.00
Panel D: Non-exec. Directors (%) All	*57.24*	*17.97*	*-.68***	*1.10*	*.00*	*100.00*
2002	52.34	18.77	-.73**	.90	.00	84.62
2003	55.78	20.80	-.75**	.97	.00	80.00
2004	58.87	16.92	-.60**	.26	.00	84.62
2005	59.62	15.95	-.35**	1.17	.00	100.00
2006	59.56	16.17	-.54**	1.30	.00	100.00
Panel E: Frequency of Board meetings	*5.29*	*2.16*	*3.49****	*26.39****	*.00*	*27.00*
2002	5.10	2.14	2.56***	7.89***	2.00	15.00
2003	5.14	2.15	1.69***	5.16***	.00	14.00
2004	5.47	1.90	1.22***	1.46	2.00	12.00
2005	5.33	2.74	5.96***	46.00***	2.00	27.00
2006	5.37	1.76	.82**	.71	2.00	10.00
Panel F: Director ownership (%) All	*19.54*	*24.47*	*1.23****	*.42*	*.00*	*93.81*
2002	20.13	23.83	1.21***	.62	.00	91.22
2003	19.92	24.06	1.18***	.41	.00	89.99
2004	19.83	25.46	1.27***	.47	.00	93.81
2005	19.57	24.97	1.22***	.32	.00	89.36
2006	18.23	24.43	1.36***	.66	.00	89.60
Panel G: Leverage (%) All	*15.71*	*12.45*	*.33***	*-1.07*	*.02*	*39.36*
2002	16.84	13.16	.23**	-1.24	.02	39.36
2003	15.90	12.85	.24**	-1.24	.02	39.36
2004	15.51	12.22	.42**	-.93	.02	39.36
2005	15.07	12.04	.38**	-.90	.02	39.36
2006	15.11	12.11	.39**	-.93	.02	39.36

The skewness and kurtosis test statistics in columns 4 and 5, respectively, test for normal distribution. A test statistic with (***), (**), and (*) means that the null hypothesis that a variable is normally distributed is rejected at the 1%, 5%, and 10% significance level, respectively. Return on assets (ROA), Tobin's Q (Q-ratio), and leverage (LEV) were winsorised at the 5% and 95% levels. The statistics reported for these variables refer to values after winsorisation. This explains why the minimum and maximum pooled and annual values for these variables are the same. The corporate governance variables, namely board size, the percentage of non-executive directors, the frequency of board meetings, and director ownership were not winsorised.

Continuation: Table 12

Dependent/Independent Variables	Mean	Std. Dev.	Skew-ness	Kurt-osis	Mini-mum	Maxi-mum
Panel H: Institutional ownership (%) All	*71.02*	*25.98*	*-.40***	*.28*	*.28*	*99.61*
2002	70.47	25.26	-.21**	.28	.28	99.57
2003	69.53	26.81	-.59**	4.89***	4.89	99.61
2004	72.00	25.46	-.41**	10.25***	10.32	98.30
2005	71.03	26.37	-.53**	9.39***	9.02	98.35
2006	71.66	26.43	-.46**	8.84***	8.84	99.00
Panel I: Block ownership (%) All	*59.91*	*20.85*	*-.42***	*-.61*	*6.72*	*99.69*
2002	69.15	21.80	-.37**	-.84	11.27	99.69
2003	61.25	21.73	-.48**	-.65	10.30	97.34
2004	60.35	21.78	-.51**	-.56	6.72	97.84
2005	59.97	19.91	-.47**	-.33	11.51	95.72
2006	57.85	19.15	-.35**	-.46	11.64	92.64
Panel J: Firm size All	*5.93*	*1.07*	*-.11***	*1.25*	*4.12*	*7.55*
2002	5.89	1.04	-.83**	1.25	4.12	7.55
2003	5.88	1.07	-.11**	1.31	4.12	7.55
2004	5.90	1.08	-.18**	-1.36	4.12	7.55
2005	5.94	1.08	-.11**	-1.25	4.12	7.55
2006	6.05	1.06	.56**	-.93	4.12	7.55
Panel K: Gearing (%) All	*37.83*	*32.96*	*.54***	*-.94*	*.02*	*99.31*
2002	41.43	33.87	-.36**	-1.15	.02	99.31
2003	37.62	33.44	.51**	1.00	.02	99.31
2004	37.49	33.44	.67**	.82	.02	99.31
2005	35.28	31.84	.63**	-.75	.02	99.31
2006	37.33	32.54	.57**	.85	.02	99.31
Panel L: Sales growth (%) All	*11.33*	*20.72*	*.10***	*-.03*	*-30.35*	*54.19*
2002	16.21	22.13	.28**	-.36	-30.35	54.19
2003	4.36	22.26	.13**	-.14	-30.35	54.19
2004	4.57	18.27	.68**	.68	-30.35	54.19
2005	12.09	20.64	.21**	.03	-30.35	54.19
2006	14.26	18.26	.31**	.79	-30.35	54.19
Panel M: Capital expenditure (%) All	*5.70*	*4.18*	*.83***	*-.27*	*.47*	*15.08*
2002	5.22	3.90	.96**	.32	.47	15.08
2003	5.36	4.06	1.00**	.41	.47	15.08
2004	5.74	4.22	.84**	-.26	.47	15.08
2005	6.03	4.28	.71**	-.40	.47	15.08
2006	6.14	4.40	.68**	-.70	.47	15.08

The skewness and kurtosis test statistics in columns 4 and 5, respectively, test for normal distribution. A test statistic with (***), and (**) means that the null hypothesis that a variable is normally distributed is rejected at the 1%, and 5%, significance level, respectively. Firm size (LNTA), gearing (GEAR), sales growth (SGROWTH), and capital expenditure (CAPEX) were winsorised at the 5% and 95% levels. The statistics reported for these variables refer to values after winsorisation. This explains why the minimum and maximum pooled and annual values are identical for these variables. The corporate governance variables, namely institutional ownership and block ownership were not winsorised.

Across the years, Panels *A* and *B* show that accounting and market performance of the sampled firms were highest in 2006 with an average ROA and Q-ratio of 11% and 1.85, respectively. By contrast, ROA was least in 2004 with a mean of 7%, while the Q-ratio was least in 2004 with an average of 1.24. This indicates that the South African economy might

have performed poorly in 2003 and 2004, but the market strongly recovered in 2006. This may be due to the significant depreciation of the South African Rand as a result of poor gold and diamond prices on the international markets over the 2003-2004 period (e.g., Armstrong, 2003; Malherbe and Segal, 2003). Overall, the averages of the ROA and Q-ratio are consistent with those reported by prior South African studies. Klapper and Love (2004) report an average ROA and Q-ratio of 9% and 1.90, respectively, for a cross-country sample of 374 firms, including South Africa in 1999. Ho and Williams (2003) also report an average ROA value of 13% for a sample of 84 South African firms in 1998.

7.1.3 **Descriptive Statistics of the Independent/Alternative Governance Mechanisms**

The independent/alternative corporate governance mechanisms are presented in Panels *C* to *I* of Table 12. Panel *C* indicates that board size ranges from a minimum of 3 and a maximum of 31 with an average size of 9.69 for a South African listed firm. This is within the average board size recommended (i.e., between 8 and 10) by Lipton and Lorsch (1992), for greater board efficiency and effectiveness. The respective five annual means were stable, ranging between 9.44 and 10.04 in 2003 and 2006, respectively. The overall range is within the provisions of the South African Companies Act 1973. It recommends that a public company must have a minimum board size of two, but does not specify a maximum size.

It is also consistent with the results of previous South African studies. Opinion-based survey conducted by the Deutsche Bank in 2002 suggests that the number of members on South African corporate boards ranges from 5 to 30 with an average board size of 12. Similarly, Ho and Williams (2003) find an average board size of 13.02 for a sample of 84 South African firms in 1998. Finally, using a sample of 117 South African listed firms in 2003, Swartz and Firer (2005) report that the average South African board consist of 10.30 members.

Panel *D* of Table 12 reports the composition of South African boards. It shows that South African corporate boards are dominated by non-executive directors (NEDs) with a mean percentage of NEDs of 57% for the pooled sample. Consistent with observations regarding the other corporate governance mechanisms, the mean percentage of NEDs increased from 52% in 2002 to 60% in 2006. This suggests that the King Reports have helped in making South African corporate boards more independent. They are also in line with the evidence of prior South African studies. Ho and Williams (2003) find an average percentage of NEDs of 52%, whereas Mangena and Chamisa (2008) report a mean of 57% and 41% for a sample of control and suspended South African listed firms, respectively.

Similarly, Panel *E* of Table 12 presents the frequency of board meetings in a year. It indicates that the average annual number of board meetings increased from 5.10 in 2002 to 5.37 in 2006. Overall, the frequency of board meetings ranges from a minimum of zero to a maximum of 27[79] with the average South African listed firm meeting more than 5 times in a year. This is higher than the minimum of 4 annual meetings recommended by King II. It is also in line with the results of previous studies. As has been discussed in chaper six, 78% of the sampled firms complied with the recommendation of having a minimum of 4 annual meetings. Using a sample of 307 US listed firms between 1990 to 1994, Vefeas (1999a) find that the average US board holds 7.45 annual meetings. Similarly, for a sample of 157 Zimbabwean listed firms, Mangena and Tauringana (2006) report that the average annual number of board meetings is 3.30. Finally, El Mehdi (2007) finds that the average annual number of board meetings for 24 Tunisian listed firms is 3.98.

Panel *F* of Table 12 reports director shareownership. It shows that director shareownership ranges from 0% to 94% with an average of 20%. This is consistent with the findings of previous South African studies, but substantially higher than those reported for some developed markets. Mangena and Chamisa (2008) report a mean of 20% and 23% for a sample of control and suspended South African listed firms, respectively. By contrast, Yermack (1996) and Weir *et al.* (2000) report an average of 9% and 3% of director shareownership in a sample of US and UK listed firms, respectively. Panel *H* of Table 12 contains institutional shareholding. It indicates that institutional shareholding ranges from 0.28% to 99% with an average of 71%. This is remarkably high and is quite similar to institutional shareholdings in some developed markets. For example, Henry (2008) reports that UK institutional ownership ranges from 60% to 75%. A study by Barr *et al.* (1995), however, suggests that most of the South African institutional shareholdings are in the form of complex cross-holdings and pyramidical structures.

Finally, Panel *I* of Table 12 reports block shareholding. The Panel suggests that block shareholding also ranges from 7% to 99% with a mean of 60%. This indicates that the average South African listed firm has a concentrated ownership structure. It is also substantially higher when compared with the levels of ownership concentration in some mature markets, but consistent with the results of previous South African studies. Mangena and Chamisa (2008)

[79]Examination of the data shows that there are substantial variations in the distribution of the number of board meetings among the sampled firms. Specifically, in 169(31.71%), 78(14.63%), 73(13.70%), and 33(6.19%) of the 500 firm year observations, the number of board meetings in a year was 4, 6, 5, and 7 times, respectively. Similarly, in 11(2.06%) firm year observations, the annual number of meetings held was 3, 8, and 9 times each.

report an average block ownership of 61% and 50% for a sample of control and suspended South African listed firms, respectively. By contrast, Yermack (1996) and Shabbir and Padget (2005) report an average block ownership of 24% and 29% for a sample of US and UK listed firms, respectively. The incidence of block ownership, however, decreased from an average of 60% in 2002 to 58% in 2006. This may be explained by the introduction of more rigorous Listings Rules by the JSE aimed at discouraging the listing of concentrated ownerships and pyramidical structures (e.g., Malherbe and Segal, 2003; Armstrong *et al*., 2006).

7.1.4 **Descriptive Statistics of the Control/Exogenous Variables**

Panels *J* to *M* of Table 12 contain summary descriptive statistics for the control/exogenous variables. First, Panel *J* shows that the mean firm size as proxied by a natural logarithm of a firm's total assets increased from 5.89(R6.14bn) in 2002 to 6.05(R6.31bn) in 2006. Overall, firm size after winsorising ranges from 4.12(R0.13bn) to 7.55(R35.77bn) with a mean of 5.93(R6.18bn). Panel *K* suggests that the average gearing ratio after winsorising ranges from 35% in 2005 to 41% in 2002 with an overall mean for the entire sample period of 37%. This indicates that the average sampled firm is moderately geared. This is also consistent with the reported results of prior research. Mangena and Chamisa (2008) report an average gearing ratio of 86% and 47% for a sample of suspended and control South African listed firms, respectively.

Consistent with the ROA and Q-ratio, Panel *L* indicates that the average sales growth after winsorising was least in 2004 at 4%, but highest in 2006 at 14%. Overall, the average sampled firm's sales grew by 11%. Finally, Panel *M* suggests that the average investments in assets for innovation and growth as represented by capital expenditure after winsorising consistently increased from about 5% in 2002 to 6% in 2006. The average firm invested 6% in assets over the entire sample period. Compared with the financial performance and corporate governance variables, the control variables have relatively larger standard deviations, which also imply that the sample has been adequately selected to achieve sufficient variation.

The next section will test the OLS assumptions, as well as present the results of bivariate correlation analyses.

7.2 **TESTS OF OLS ASSUMPTIONS AND BIVARIATE CORRELATION ANALYSES**

As has been explained in chapters five and six, Ordinary Least Squares (OLS) multivariate regression technique is used to test all the hypotheses that have been discussed in chapters four and five. As a result, OLS assumptions of *multicollinearlity, autocorrelation, normality, homoscedasticity,* and *linearity* are tested. First, the multicollinearity assumption is tested by conducting a correlation matrix among the variables. Table 13 contains a correlation matrix for the financial performance and all the continuous corporate governance variables. As has been discussed above, the skewness and kurtosis statistics reported in Table 12 suggested that the variables generally suffer from mild non-normal behaviour. As a result, Table 13 reports both Pearson's parametric and Spearman's non-parametric correlation coefficients. The bottom left half of the table presents Pearson parametric correlation coefficients, whilst the upper right half of the table contains Spearman's non-parametric alternative.

Table 13 shows that the coefficients of both the parametric and non-parametric bivariate correlations are very similar. The similar nature of the parametric and non-parametric correlation coefficients seems to suggest that any remaining non-normalities in the variables may be mild, and are also similar to those reported by prior studies (Cheung and Wei, 2006, p.913; Haniffa and Hudaib, 2006, pp. 1048, 1050-1051; Francoeur *et al*., 2008, p.88). As has been discussed in chapter six, this appears to indicate that it may be statistically tolerable to use OLS technique to estimate the specified structural equations. Apart from the *SACGI* and its sub-indices, both matrices suggest that correlations among the variables are relatively low, indicating that no serious multicollinearity[80] problems remain.

Additionally, tolerance statistics, variance inflation factor (VIF), eigenvalues, condition indices, and variance proportions, which test for multicollinearity are computed (for purposes of brevity is not reported here) for both the *compliance-index* and *equilibrium-variable* models based on both the accounting (ROA) and market (Q-ratio) based measures of financial performance after winsorisation.

According to Gujarati (2003, p.351-353), tolerance statistic close to one means that there is little multicollinearity, whereas a value close to zero suggests that multicolliearity may

[80]There were high significant initial correlations between the *SACGI* and board size (.667), the *SACGI* and firm size (.762), and between board size and firm size (.761). This was resolved by running board size (BSIZE) on the *SACGI*, firm size and the remaining seven seven variables. The regression residuals (R_BSIZE) were saved and used as a proxy for board size (BSIZE). RW refers to regression residuals based on the winsorised financial performance and control variables. This procedure was repeated to obtain RW_LNTA, a proxy for firm size. This also resulted in high correlations between BSIZE and RW_BSIZE (.612), and LNTA and RW_LNTA (.508), but low correlations between RW_BSIZE and RW_LNTA (-.442), RW_LNTA and the *SACGI* (.000), and RW_BSIZE and the *SACGI* (.000).

be a threat. Also, a VIF statistic below the value of ten implies non-existence of severe multicollinearity problems (Gujarati, 2003, p.351-353). With the exception of the ownership variables[81] of the *equilibrium-variable* model, tolerance statistics (for brevity reasons not shown here) for all the variables are close to the critical value of one, whilst none of the VIF statistics is above the critical value of ten.

Brooks (2003, p.404), suggests that eigenvalues above the critical value of zero indicates that multicollineratiy may not be a problem, whereas Gujarati (2003, p.351-353) indicates that condition indices below the critical value of thirty imply that multicollinearity may not be a serious concern. Similarly, apart from the ownership variables of the *equilibrium-variable* model, all the eigenvalues (for the sake of brevity not shown here) are above the critical value of zero, while none of the condition indices is above the critical value of thirty. Similar to the suggestions of the parametric and non-parametric correlation coefficients in Table 13, the correlation of variance proportions (for purposes of brevity not reported here) generally indicates low levels of correlation among the variables. Overall, the collinearity statistics (including the parametric and non-parametric correlation matrices, condition indices, eigenvalues, tolerance statistics, variance proportions and VIF) suggest that the levels of multicollinearity in the variables appear to be statistically tolerable.

By contrast, Table 13 shows that there are high correlations between the *SACGI*, the *Social-SACGI*, the *Economic-SACGI*, and the predicted instrument to be used as a proxy for the *SACGI* (*P-SACGI*) in conducting the endogeneity test (instrumental variable estimation) in chapter nine. As expected, and has also been noted already above, there are high, but statistically tolerable correlations among the three director ownership variables, namely director ownership, director ownership squared, and director ownership cubed. The high correlation between the *SACGI* and the *P-SACGI* (i.e., .864 and .868 for Pearson and Spearman coefficients, respectively) appears to suggest that it may be a relevant instrument for the *SACGI*.

[81]This is less surprising because the ownership variables, especially director ownership^2 and director ownership^3 are squared and cubed versions of the director ownership variable, respectively, which affects their normal distribution properties. As expected, there are also high correlations (see Table 13) among the three director ownership variables. Further, rank and natural log transformations of these variables did not produce better distributions and estimations than those based on the actual levels of the variables. They are included because excluding them did not result in significant changes in the regression results.

Table 13: Correlation Matrix of Financial Performance and All Continuous Corporate Governance Variables for All (500) Firm Years

	ROA	Q-ratio	SACGI	S-SACGI	E-SACGI	P-SACGI	BSIZE	NEDs	FBMs	DTORN	INST-HDNG	BLK-HDNG	$DTORN^2$	$DTORN^3$
ROA		.391***	.276***	.295***	.261***	.235***	-.060*	-.032*	-.001	-.133***	.158***	-.027*	-.133***	-.121***
Q-ratio	.283***		.372***	.387***	.346***	.384***	.145***	.196***	.140***	-.276***	.225***	-.092**	-.272***	-.181***
SACGI	.322***	.320***		.806***	.988***	.868***	-.042*	.378***	.276***	-.527***	.347***	-.285***	-.524***	-.438***
S-SACGI	.325***	.323***	.836***		.711***	.772***	.018*	.276***	.241***	-.457***	.355***	-.185***	-.453***	-.360***
E-SACGI	.302***	.299***	.987***	.736***		.844***	-.057*	.375***	.259***	-.516***	.323***	-.301***	-.513***	-.425***
P-SACGI	.276***	.326***	.864***	.757***	.841***		.005	.336***	.251***	-.504***	.410***	-.342***	-.503***	-.503***
BSIZE	-.040*	.131***	.000	.051*	-.015*	.094**		-.142***	.117***	.111***	.104**	.171***	.113***	.104**
NEDs	.013*	.179***	.398***	.323***	.395***	.363***	-.150***		.183***	-.430***	.175***	-.126***	-.430***	-.379***
FBMs	-.034*	.107**	.167***	.162***	.153***	.145***	.060*	.152***		-.218***	.006	-.048*	-.218***	-.167***
DTORN	-.079*	-.203***	-.533***	-.469***	-.519***	-.497***	.067*	-.338***	-.076*		-.311***	.132***	.832***	.819***
INST-SHDNG	.116***	.162***	.314***	.354***	.283***	.364***	.154***	.154***	.024*	-.294***		.237***	-.314***	-.314***
BLK-SHDNG	-.052*	-.073*	-.287***	-.184***	-.300***	-.331***	.176***	-.110**	-.063*	.262***	.299***		.127***	.127***
$DTORN^2$	-.060*	-.166***	-.455***	-.403***	-.442***	-.414***	.079*	-.267***	.025*	.812***	-.241***	.306***		.845***
$DTORN^3$	-.051*	-.147***	-.391***	-.345***	-.381***	.353***	.087*	-.222***	.004	.798***	-.191***	.314***	.839***	

Notes: the bottom left half of the table presents Pearson's parametric correlation coefficients, whilst the upper right half of the table presents Spearman's non-parametric correlation coefficients. ***, ** and * denote correlation is significant at the 1%, 5% and 10% level, respectively. Variables are defined as follows: return on assets (ROA), Tobin's Q (Q-ratio), the South African Corporate Governance Index (the *SACGI*), the *Social-SACGI* (*S-SACGI*), the *Economic-SACGI* (*E-SACGI*), the *Predicted-SACGI* (*P-SACGI*), board size (BSIZE), the percentage of non-executive directors (NEDs), the frequency of board meetings (FBMs), director shareownership (DTORN), institutional shareownership (INSTSHDNG), block shareownership (BLKSHDNG), director shareownership squared ($DTORN^2$) and director shareownership cubed ($DTORN^3$).

The high correlation between the *SACGI* and the *Social-SACGI* (i.e., .836 and .806 for Pearson and Spearman coefficients, respectively) indicates that, on average, firms with higher corporate governance scores also tend to comply better with the South African context specific affirmative action and stakeholder corporate governance provisions.

In fact, and as has been discussed in section 6.5 of chapter six, the average firm complied better with the *Social-SACGI* (67%) than the *SACGI* (60%). As has also been explained in section 6.5 of chapter six, this implies that any financial performance consequences of complying with the *Social-SACGI* can be expected to be similar in direction to that of the *SACGI*. However, if firms with better corporate governance standards (as measured by compliance with the provisions of King II) tend to be associated with higher financial returns, then it can be argued that the magnitude of complying with the *Social-SACGI* (67%) will be expected to be higher than that of the *SACGI* (60%) for the sampled firms. Also, the *SACGI* and the *Economic-SACGI* are highly (i.e., .987 and .988 for Pearson and Spearman coefficients, respectively) correlated. This is expected because the *SACGI* is dominated by the *Economic-SACGI*. Specifically, 82% (41 out of 50) of the corporate governance provisions that also form part of the *SACGI* constitute the *Economic-SACGI*.

As expected, director (DTON) and block (BLKSHDNG) ownerships are negatively correlated with the *SACGI*. This indicates that firms with higher director/block ownership tend to have poorer internal corporate governance structures. This is in line with both the theory and evidence that due to the associated increased monitoring, block ownership can serve as an alternative to or a substitute for better internal corporate governance (e.g., Andres, 2008; Young *et al*., 2008).

In contrast, institutional shareholding (INSTHDNG) is positively associated with the *SACGI*. This suggests that institutional shareholders can complement, as well as impact positively on a firm's internal corporate governance structures, including board size and percentage of non-executive directors. This is because they possess superior financial resources, specialised knowledge, information collection and analyses advantages over the average individual investor (Young *et al*., 2008, p.1108).

As hypothesised, the *SACGI* is positively related to both the accounting (ROA) and market (Q-ratio) based measures of financial performance. This means that firms with higher quality internal corporate governance structures are valued higher (Q-ratio) and/or performed better (ROA). This is consistent with prior South African evidence. Specifically, using cross-country samples of listed firms that include South Africa, Klapper and Love (2004), Durnev

and Kim (2005), and Morey *et al*. (2009) report a statistically significant and positive coefficient of .020, .060, and .470 between the Q-ratio and their composite corporate governance index, respectively. Similarly, using a cross-country sample of listed firms that include South Africa, Klapper and Love (2004) find a statistically significant and positive coefficient of .10 between ROA and their composite corporate governance index.

Apart from the correlation analyses, examination of scatter plots, Cook's distances, Durbin-Watson, leverage values, studentised residuals, normal histogram, probability-probability (*P-P*) and quantile-quantile (*Q-Q*) plots of residuals (for reasons of brevity are not presented here), skewness and kurtosis tests are conducted to test for homoscedasticity, autocorrelation, normality and linearity assumptions.

First, scatter plots, studentised residuals, leverage values, and Cook's distances are computed to test for the existence of outliers that can cause hetereoscedasticity and non-linearity in the variables after winsorising. The constructed scatter plots for ROA, Q-ratio and the *SACGI* (for brevity purposes not reported here) indicate that outliers are no longer present with the distributions looking fairly random and linear.

Studentised residuals (stud. residuals), leverage values, and Cook's distances after winsorising for both the *compliance-index* and *equilibrium-variable* models based on both the ROA and Q-ratio are computed (for brevity reasons not reported here). Cook's distance and leverage value greater than the absolute value of one indicates the presence of outliers, whereas studentised residual greater than the absolute value of three suggests the presence of outliers (Maddala, 2005, pp.470-474). None of the Cook's distances and Leverage values is greater than one. Specifically, the Cook's distances for the four models range from a minimum of .000 to a maximum of .080 with a highest mean of .003. Similarly, the leverage values range from a minimum of .017 to a maximum of .540 with a highest mean of .058. Studentised residuals for the four models range from a minimum of -3.084 to a maximum of 3.826 with a highest mean of .006. The minimum (-3.084) and maximum (3.826) values are above the critical value of three, which imply a limited number of outliers still exist. On average (.006), however, the residual statistics suggest the non-existence of severe outliers.

Second, Durbin-Watson test statistic tests for the presence of autocorrelation in the residuals from a regression. According to Brooks (2003 p.163) and Gujarati (2003, p.467-469), Durbin-Watson value of two and above suggests that successive residual terms are, on average, much different in value to one another. Computed Durbin-Watson test statistics are reported in Tables 9, 14, 16 to 26, and 29. They generally indicate that the Durbin-Watson statistics are

either close to or above one. This indicates the presence of moderate rather than severe positive autocorrelation problems.

Finally, skewness and kurtosis test statistics (see Table 12), normal histogram (not shown here for purposes of brevity), and proability-probability *(P-P)* (for brevity reasons not reported here) plots of regression residuals are conducted to test for normality. Table 12 reports computed skewness and kurtosis statistics for all the variables except the *SACGI* and the *Social-SACGI*. Tables 5 and 10 in chapter six reported the skewness and kurtosis statistics for the *SACGI* and the *Social-SACGI*, respectively. Generally, the skewness statistics reject the null hypothesis that the variables are symmetrically distributed at least at the 10% significance level. However, as has already been explained, the rejections are generally mild (in comparison with a normal distribution), and are also very similar to the reported results of past studies that have carried similar OLS estimations (Cheung and Wei, 2006, p.913; Haniffa and Hudaib, 2006, pp. 1048, 1050-1051; Francoeur *et al*., 2008, p.88). This implies that any remaining non-normalities may be statistically tolerable.

By contrast, the kurtosis statistics generally do not reject the null hypothesis that the variables are mesokurtically distributed. This indicates the non-existence of severe non-normalities in the variables. A normal histogram plot (for brevity purposes not presented here) of regression residuals after winsorising for both the *compliance-index* and *equilibrium-variable* models based on both the ROA and Q-ratio were conducted. Similarly, a normal *P-P* plot (not reported for reasons of brevity) of regression residuals after winsorising for both the *compliance-index* and *equilibrium-variable* models based on both the ROA and Q-ratio were conducted.

In line with the suggestions of the standard errors contained in Tables 9, 14, 16 to 26, and 29, they show that the regression residuals are less non-normally distributed. Further, a normal histogram, *P-P*, and *Q-Q* plots (for purposes of brevity not reported here) after winsorising for the ROA, the Q-ratio and the *SACGI* were constructed. Similar to the distribution of the bivariate scatter plots, they indicate that the ROA, the Q-ratio and the *SACGI* are less non-normally distributed. Overall, the analyses suggest that any remaining multicollinearities, hetereoscedasticities, non-normalities, and non-linearities in the variables are not so severe to cause serious violations of the OLS assumptions. This implies that it will be statistically appropriate to conduct multivariate OLS regression analyses.

7.3 **CHAPTER SUMMARY**

This chapter has focused on describing the data and testing the Ordinary Least Squares (OLS) assumptions. It attempted to achieve three main objectives. Firstly, it sought to clearly explain how outliers in the financial performance and control variables were treated. Secondly, it sought to provide a detailed description of the data using a battery of descriptive statistics. In this regard, a detailed description of the dependent (financial performance) and the other independent (corporate governance) variables were presented. The third and final objective of the chapter has been to test the OLS assumptions of multicollinearity, autocorrelation, normality, homoscedasticity and linearity. In this regard, correlation matrices, scatter and normal histogram plots, Cook's distance, condition indices, residual, and tolerance statistics were reported. Together, they indicated generally that there were no serious violations of the OLS assumptions, and thus statistically appropriate to carry out OLS regressions.

The next chapter will, therefore, report the main estimated OLS empirical results. Specifically, it will discuss the estimated OLS multivariate regression results based on both the *compliance-index* and *equilibrium-variable* models.

CHAPTER EIGHT

EMPIRICAL RESULTS

8. INTRODUCTION

This chapter discusses the empirical results. It seeks to achieve four main objectives. First, it investigates whether better-governed firms based on the *equilibrium-variable* model will be associated with higher financial performance, as measured by return on assets (ROA) and Tobin's Q (Q-ratio). In this regard, estimated OLS regression results based on the *equilibrium-variable* model will be reported and discussed. Second, it examines whether better-governed firms based on the *compliance-index* model will be associated with higher financial performance, as proxied by return on assets (ROA) and Tobin's Q (Q-ratio). In this respect, estimated OLS regression results based on the *compliance-index* model will be presented and analysed. Third, it investigates the economic consequences of complying with the South African context specific affirmative action and stakeholder corporate governance provisions for listed firms. In this vein, estimated OLS regression results based on the *Social-SACGI* will be reported and discussed. Finally, the chapter compares the empirical properties and explanatory powers of the *compliance-index* (the *economic-SACGI*) and the *equilibrium-variable* models using summary descriptive statistics and diagnostics.

The rest of the chapter is organised as follows. Section 8.1 presents the empirical results. Specifically, subsection 8.1.1 discusses the findings from the multivariate regression analyses based on the *equilibrium-variable* model to test hypotheses one to seven. Subsection 8.1.2 reports the regression results based on the *compliance-index* model to test hypothesis eight. To ascertain the financial effects of complying with the South African context specific affirmative action and stakeholder corporate governance provisions on the sampled firms, subsection 8.1.3 report the estimated regression results based on both the *Social-SACGI* and *Economic-SACGI*. Section 8.2 compares the regression results of the *compliance-index* (the *Economic-SACGI*) and *equilibrium-variable* models, while section 8.3 summarises the chapter.

8.1 EMPIRICAL RESULTS: MULTIVARIATE REGRESSION ANALYSES

This section presents the main regression results. Specifically, subsection 8.1.1 will report the regression results for the *equilibrium-variable* model to test hypotheses one to seven.

Subsection 8.1.2 will discuss the regression results for the *compliance-index* model to test hypothesis eight, whereas subsection 8.1.3 will do similarly for the results of the *Social-SACGI* and *Economic-SACGI*. Further, for each model, the results based on the accounting based measure of financial performance (ROA) will be presented first, followed by those based on the market based measure of financial performance (Q-ratio).

8.1.1 **Empirical Results: The Equilibrium-Variable Model**

8.1.1.1 ***Results Based on the Accounting Measure of Financial Performance (ROA)***

Table 14 contains OLS regression results for the *equilibrium-variable* model based on the accounting based measure of financial performance (ROA). To facilitate comparison and easy following, Table 15 presents a summary of all seven hypotheses and results for the *equilibrium-variable* model based on all firm years for both the ROA and the Q-ratio. As a result, Table 15 will also be referred to in subsection 8.1.1.2. The variables of focus in this model are the first 11 corporate governance variables. Column 3 of Table 14 first presents the results of multivariate regression of ROA on the 11 corporate governance variables alone, whereas columns 4 to 9 report the results of multivariate regression of ROA on the 11 corporate governance variables and the control variables for the combined sample, as well as for each of the five firm-years, respectively.

Column 3 of Table 14 suggests that the *F-value* is statistically significant at the 1% significance level. Therefore, the null hypothesis that the coefficients of the 11 corporate governance variables are jointly equal to zero can be rejected. It suggests that the coefficients on the 11 corporate governance variables can jointly explain significant variations in the sampled firms' accounting returns. The adjusted R^2 is approximately 6%. This means that at least 6% of the variations in the sampled firms' accounting returns (ROA) can be explained jointly by the 11 corporate governance variables.

The coefficients on the percentage of non-executive directors (NEDs), board diversity, director ownership, director ownership squared, and director ownership cubed are statistically significant, whereas the coefficients on board size, CEO duality, the frequency of board meetings, the existence of audit, nomination, and remuneration committees are not statistically significant. The positive coefficients on director ownership squared (which will be explained further below), board diversity, the existence of audit, nomination, and remuneration committees, in addition to the negative coefficient on director ownership cubed, are also theoretically expected (see column 3 of Table 15). By contrast, the negative coefficients on

board size, the percentage of NEDs, and the frequency of board meetings in addition to the positive coefficient on CEO duality are inconsistent with hypothesised relationship (see column 3 of Table 15).

Therefore, to test whether the observed theoretically unexpected relationships could be spuriously caused by some omitted variables, the control variables are included in the regressions in Columns 4 to 9 of Table 14. It suggests that the *F-value* is statistically significant for the pooled sample, and in year 2006, but insignificant in the remaining four years. The adjusted R^2 for each of the five years is between 1%-10%, and 12% for the combined sample. This compares, for example, with the adjusted R^2 of 23% of Weir and Laing (2000, p.274), and 27% of Haniffa and Hudaib (2006, p.1055) for their pooled regressions of ROA on a number of corporate governance and control variables.

With reference to the 11 corporate governance variables, the signs of all the coefficients remain unchanged for the complete sample. However, the coefficients on board diversity, director ownership, director ownership squared, and director ownership cubed that were statistically significant, are now insignificant. In contrast, the coefficients on CEO duality and the existence of a nomination committee, which were statistically insignificant, are now significant. These sensitivities may be due to omitted variables bias resulting from the exclusion of the control variables. Therefore, the estimated coefficients that include the control variables are discussed further.

To start with, the coefficient on the first corporate governance variable, board size, is negative, but not significant over the entire sample period. This rejects hypothesis two (see column 6 of Table 15) that there is a statistically significant and positive relationship between board size and ROA. In contrast, it supports the results of prior South African studies (Ho and Williams, 2003; Mangena and Chamisa, 2008), as well as other international evidence (e.g., Eisenberg *et al*., 1998; Kiel and Nicholson, 2003; Shabbir and Padget, 2005; Guest, 2009). For instance, Ho and Williams (2003) report a statistically insignificant and negative relationship between board size and the value added by a firm's physical and intellectual resources, using a sample of 84 South African firms.

Table 14: OLS Regression Results of the Equilibrium-Variable Model Based on Return on Assets (ROA –Accounting Measure)

	Exp. sign	All firm years	All firm years	2002	2003	2004	2005	2006
Adjusted R^2		.063	.115	-.086	.007	.021	.042	.102
Standard error		.116	.114	.115	.115	.127	.126	.110
Durbin-Watson		.904	.925	2.010	1.794	2.114	1.980	1.918
F-value		3.522(.000)***	3.125(.000)***	.747(.763)	1.028(.419)	1.144(.331)	1.180(.298)	1.615(.097)*
No. of observations		500	500	100	100	100	100	100
Constant		.048(.383)	.046(.435)	-.016(.931)	.155(.185)	.050(.748)	-.108(.542)	-.088(.600)
Board size	+	-.003(.138)	-.002(.311)	-.003(.630)	-.007(.242)	-.003(.714)	-.002(.805)	.000(.971)
CEO duality	-	.023(.159)	.029(.037)**	.032(.418)	.043(.261)	.022(.668)	-.004(.944)	.083(.048)**
Non-executiv. dtors.	+	-.001(.016)**	-.002(.032)**	-.001(.613)	-.002(.061)*	-.001(.282)	-.000(.993)	.000(.869)
Dtor. ownership	+	-.003(.044)**	-.003(.131)	-.004(.444)	.003(.594)	-.001(.780)	-.005(.297)	-.002(.585)
Dtor. ownership^2	-/+	.000(.060)*	.000(.104)	.000(.812)	-.000(.850)	.000(.763)	.000(.226)	.000(.501)
Dtor. ownership^3	-/+	-.000(.093)*	-.000(.106)	-.000(.991)	-.000(.927)	.000(.735)	-.000(.222)	-.000(.533)
Board diversity	+	.036(.004)***	.021(.112)	.022(.517)	.053(.109)	.034(.369)	.019(.591)	.013(.687)
Board meetings	+	-.002(.418)	-.003(.324)	-.004(.612)	.007(.297)	-.006(.512)	-.003(.572)	.012(.111)
Audit committee	+	.038(.680)	.050(.581)	.196(.330)	-.023(.890)	.110(.525)	.248(.177)	-.334(.066)*
Nomination com.	+	.021(.122)	.021(.091)*	.016(.669)	.022(.570)	.052(.211)	.017(.690)	.008(.813)
Remuneration com.	+	.051(.539)	.034(.641)	.005(.970)	.028(.844)	-.055(.779)	-.036(.811)	-.141(.278)
Firm size	+	-	.001(.928)	-.013(.706)	-.010(.774)	-.041(.249)	.032(.328)	.004(.878)
Capital structure	-/+	-	.000(.021)**	-.001(.089)*	.000(.970)	.000(.840)	-.001(.108)	-.001(.084)*
Sales growth	+	-	.001(.000)***	.002(.045)*	.002(.014)**	.003(.014)**	.002(.029)**	.001(.106)
Capital expenditure	-/+	-	-.002(.105)	-.004(.377)	-.005(.200)	.002(.674)	-.004(.266)	-.003(.335)
Dual-listing	+	-	.024(.138)	-.014(.738)	.021(.579)	.002(.956)	.022(.598)	.038(.275)
Audit firm size	-	-	.010(.559)	-.057(.289)	-.034(.428)	.018(.677)	.037(.402)	.015(.691)
Basic materials		-	-.011(.611)	.080(.159)	.007(.887)	-.032(.559)	-.021(.708)	-.020(.662)
Consumer services		-	-.002(.925)	.034(.514)	-.110(.385)	-.051(.307)	.046(.333)	.024(.557)
Industrials		-	-.014(.464)	.034(.509)	-.040(.025)**	-.042(.396)	-.008(.879)	.002(.971)
Technology		-	.006(.772)	.016(.791)	-.046(.367)	.021(.691)	.011(.828)	.025(.544)
Year 2002		-	-.014(.457)	-	-	-	-	-
Year 2004		-	-.011(.550)	-	-	-	-	-
Year 2005		-	-.012(.495)	-	-	-	-	-
Year 2006		-	-.002(.928)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison. Director ownership^2 and director ownership^3 refers to director ownership squared and director ownership cubed, respectively.

Table 15: A Summary Table of All Hypotheses and Results for the Equilibrium-Variable Model Based on All Firm Years

Dependent Varaiabe	Return on Assets (ROA)					Tobin's Q (Q-ratio)			
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 diversity	1	+	+	Insignificant	Rejected	+	-	Insignificant	Rejected
Board size	2	+	-	insignificant	Rejected	+	+	Significant(10%)	Accepted
CEO duality	3	-	+	Significant(5%)	Rejected	-	-	Insignificant	Rejected
Non-exec. dtors.	4	+	-	Significant(5%)	Rejected	+	+	Insignificant	Rejected
Board meetings	5	+	-	Insignificant	Rejected	+	+	Insignificant	Rejected
Audit committee	6	+	+	Insignificant	Rejected	+	+	Insignificant	Rejected
Nomination com.	6	+	+	Significant(10%)	Accepted	+	-	Insignificant	Rejected
Remuneration co.	6	+	+	Insignificant	Rejected	+	-	Insignificant	Rejected
Dtor. ownership	7	+	-	Insignificant	Rejected	+	-	Significant(10%)	Rejected
Dtor. ownership^2	7	-/+	+	Insignificant	Rejected	-/+	+	Insignificant	Rejected
Dtor. ownership^3	7	-/+	-	Insignificant	Rejected	-/+	-	Insignificant	Rejected

Notes: The Table presents a summary of all the seven hypotheses tested and results for the *equilibrium-variable* model. Columns 2 to 6 present information relating to hypotheses 1 to seven with regard to the ROA, while columns 7 to 10 do similarly with respect to the Q-ratio. The information in columns 7 to 10 wil be referred to in the discussions at subsection 8.1.1.2. Director ownership^2 refers to director ownership squared, whilst director ownership^3 refers to director ownership cubed.

However, the results differ from prior studies that document a statistically significant and positive link between board size and accounting returns (e.g., Sanda *et al*., 2005; Haniffa and Hudaib, 2006; Mangena and Tauringana, 2008). Theoretically, it implies that larger boards are less effective. Within the South African context, this appears to indicate further that board appointments may be made in order to meet affirmative action provisions, such as black empowerment and employment equity targets rather than for the quality of their contributions to board decisions.

CEO duality, board diversity, and the existence of audit, nomination and remuneration committees, are found to be positively associated with accounting returns, but only CEO duality and the existence of a nomination committee are significant for the pooled sample. CEO duality is further significant in year 2006. The statistically significant and positive association between CEO duality and ROA rejects hypothesis three (see column 6 of Table 15) that CEO duality significantly impacts negatively on firm financial performance. It also does not lend empirical support to the recommendations of corporate governance codes, including King II that the roles of company chairman and CEO should be split.

Empirically, this finding is different from the results of previous studies that report a statistically significant and negative relationship between ROA and role duality (e.g., Rechner and Dalton, 1991; Haniffa and Hudaib, 2006). Specifically, it does not lend empirical support to the results of Ho and Williams (2003) who report a statistically significant and negative association between CEO duality and the intellectual capital performance of 84 South African listed firms. In contrast, the results lend empirical support to the findings of Donaldson and Davis (1991) and Boyd (1995) that there is a statistically significant and positive nexus between role duality and ROA. Theoretically, it suggests that role duality allows a visionary and charismatic CEO the opportunity to have a sharper focus on firm objectives without excessive board interference (Haniffa and Cooke, 2002, p.321). It also facilitates quick decision-making, which may improve financial performance.

The statistically significant and positive coefficient on the presence of a nomination committee supports hypothesis six (see column 6 of Table 15) that the presence of a nomination committee impacts positively on accounting returns. It also offers empirical support to the recommendations of many corporate governance codes, including King II that call for the establishment of board committees. Empirically, it rejects the results of Bozec (2005) who reports a statistically insignificant relationship between ROA and the establishment of a nomination committee in a sample of 25 Canadian listed firms from 1976 to

2005. Theoretically, the establishment of a nomination committee can improve the process by which directors are appointed, as well as the independence of the board and its decisions. Arguably, this can potentially impact positively on firm financial performance by enhancing the effectiveness with which the board carries out its monitoring and advisory functions.

On the other hand, the results suggest that the presence of audit and remuneration committees are positively related to ROA, but both are statistically insignificant. This does not support hypothesis six (see column 6 of Table 15), as well as the recommendations of King II. Given the high adoption rate of audit and remuneration committees, their insignificance in explaining ROA is not empirically too surprising. This is because, and as has already been discussed in chapter six, less than 10% of the sampled firms' do not have audit and remuneration committees, which results in less variation among them. This also raises questions as to the methodological appropriateness for estimating the corporate governance-financial performance link by applying the *equilibrium-variable* model. This is because it can be argued that if all firms were to fully comply or not to completely comply with some of the single corporate governance provisions, then there will simply be no cross-sectional variations in the variables for them to be value relevant in any regression.

The statistically insignificant relationship between board diversity and ROA means that hypothesis one (see column 6 of Table 15) is rejected. As has been discussed in subsection 6.5 of chapter six, this is less empirically surprising. This is because the number of non-whites and women representation on South African corporate boards are small such that they may not be able to have any significant impact on board decisions. Empirically, it does not support the results of Swartz and Firer (2005) that South African listed firms significantly enhance their intellectual capital performance by having ethnically diversed board of directors. However, the positive coefficients are consistent with the findings of Adler (2001) who report that board diversity impact positively on accounting returns. By contrast, it rejects the results of Shrader *et al*. (1997) who find a negative association between board diversity and ROA. The positive coefficient is also consistent with theory. It has been suggested that board diversity increases creativity and innovation in decision-making due to differences in cognitive abilities, which impacts positively on performance (Carter *et al*., 2003, p.36).

The percentage of non-executive directors (NEDs) and frequency of board meetings are negatively related to accounting returns, but only the percentage of NEDs is statistically significant for the full sample. The statistically significant and negative relationship between the percentage of NEDs and ROA means that hypothesis four (see column 6 of Table 15) is

not supported. This finding is also contrary to the expectations of many corporate governance codes, including King II, which promote the inclusion of more NEDs on corporate boards. Empirically, it also does not support the results of prior South African studies of Ho and Williams (2003) and Mangena and Chamisa (2008) that indicate that more NEDs impact positively on firm performance. However, it supports previous corporate governance evidence (e.g., Weir and Laing, 2000; Fich and Shivdasani, 2006; Haniffa and Hudaib, 2006), which reports a negative link between the percentage of NEDs and ROA.

Theoretically, stewardship theory suggests that non-executive directors often command less knowledge about the business, and find it difficult to understand the complexities of the firm (Weir and Laing, 2000, p.267). This negatively affects performance. The statistically insignificant and negative ROA-the frequency of board meetings nexus means that hypothesis five (see column 6 of Table 15) can be rejected. It also implies that the recommendations of King II that South African corporate boards must hold a minimum of four meetings in a year are not empirically supported. Empirically, this finding is consistent with the result of El Mehdi (2007) who reports a statistically insignificant association between the frequency of board meetings and ROA for a sample of 24 Tunisian listed firms from 2000 to 2005. By contrast, it does not support the results of Mangena and Tauringana (2006) who document a statistically significant and positive relationship between the frequency of board meetings and ROA in a sample of 157 Zimbabwean listed firms from 2001 to 2003.

Theoretically, the negative coefficient on the frequency of board meetings under the ROA supports the idea that frequent board meetings are not necessarily beneficial. A higher frequency of board meetings, for example, can result in higher costs in the form of managerial time, travel expenses, refreshment, and directors' meetings fees.

Director shareownership is found to be negatively related to accounting returns, but not statistically significant. This implies that hypothesis seven (see column 6 of Table 15) is not supported. In contrast, it is consistent with the results of previous South African studies (e.g., Ho and Williams, 2003; Mangena and Chamisa, 2008). For example, using a sample of 84 South African listed firms, Ho and Williams (2003) report a negative association between director ownership and a firm's physical and intellectual capital performance. Theoretically, the negative coefficient can be explained by the entrenchment hypothesis. The hypothesis states that at high levels of shareholding, directors may hold sufficient voting power to protect themselves against any disciplinary actions from minority shareholders. This motivates

managers to engage in opportunistic behaviour, including the consumption of more perquisites, which impacts negatively on firm financial performance.

To replicate the results of Morck *et al*. (1988) and McConnell and Servaes (1990), two additional ownership variables – director ownership squared and cubed are introduced. Specifically, Morck *et al*. (1988) document a positive director ownership-performance link at lower levels (0% to 5% - *interests convergence*), a negative relationship at moderate levels (5% to 25% - *entrenchment*), and additional positive association at higher levels (above 25% - *interests convergence*). This results in a non-linear relationship between director ownership and performance.

The results show that director ownership squared and director ownership cubed[82] are negatively and positively associated with ROA, respectively, but both are statistically insignificant. The positive and negative coefficient on director ownership squared and director ownership cubed, respectively, suggests the presence of a non-linear relationship. However, the statistically insignificant coefficients fail to offer empirical support to past evidence, which indicates significant curvilinear director ownership-performance link (e.g., Morck *et al*., 1988; McConnell and Servaes, 1990). Overall, the statistically insignificant and negative coefficient on director shareownership does not support the director entrenchment hypothesis. Similarly, statistically insignificant coefficients on director shareownership cubed and squared also fail to offer evidence to neither support the director interest alignment hypothesis nor director entrenchment hypothesis even at higher levels of director shareownership.

With respect to the control variables, and consistent with predictions, firm size, capital structure, sales growth and dual-listing are found to be positively associated with accounting returns, whilst capital expenditure is negatively related to ROA for the pooled sample. Audit firm size is also positively related to ROA for the full sample. However, only capital structure and sales growth are statistically significant for the combined sample, whereas firm size, capital structure and dual-listing are significant over the entire sample period. The statistically

[82] Following Beiner *et al*. (2006), the coefficients on director shareownership, directorship shareownership squared, and director shareownership cubed are interpreted separately. This is because unlike Morck *et al*. (1988) and McConnell (1990) who investigate the non-linear director shareownership-firm value relationship in isolation, in this study and similar to Beiner *et al*. (2006), the curvilinear relationship is explored alongside eight other corporate governance mechanisms. Director shareownership levels are, therefore, not classified from 0% to 5%, 5% to 25%, and 25% above range, as done by Morck *et al*. (1988) and McConnell and Sevaes (1990). However, and as has been reported above, in this study, director shareownership ranges from 0% to 94% for the pooled sample. This makes it difficult to *ex ante* determine the potential turning points and the direction of the coefficients on director shareownership squared and director shareownership cubed. Therefore, the coefficients on the director shareownership variables are interpreted separately based on the *post ante* predicted coefficients and statistical significance.

significant and positive coefficient on capital structure implies that higher levels of gearing can significantly increase performance by reducing agency conflicts often associated with having 'free cash flows' by self-serving managers (Jensen, 1993, p.323). The positive coefficient on firm size offers empirical support to past evidence, which suggests a positive link between firm size and ROA (e.g., Weir and Laing, 2000; Bozec, 2005). The positive, but statistically insginficant relationship between audit firm size and ROA for the full sample is theoretically not expected.

By contrast, the statistically significant and positive sales growth-ROA link is consistent with theory and previous evidence that, on average, firms that generate higher sales are more likely to report higher accounting profits (Klapper and Love, 2004; Shabbir and Padget, 2005). Similarly, the positive coefficient on dual-listing supports recent cross-country evidence that includes South Africa by Charitou and Louca (2009), which indicates that cross-listed firms are associated with higher operating accounting returns than their non cross-listed counterparts.

In contrast, the negative relationship between capital expenditure and ROA indicates that investments in assets are capital intensive, but often tend to have positive impact on future profitability (Weir *et al.*, 2002, p.589). This negatively affects current accounting profits. It also seems to suggest the existence of of lagged structure relationship between ROA and capital expenditure. As a robustness test, a lagged corporate governance-financial performance structure will be estimated in chapter nine. Finally, the results show that none of the industry and year dummies is significant for the combined sample. This fails to support prior results of Shabbir and Padgett (2005), and Haniffa and Hudaib (2006) that suggest that accounting returns of firms differ across different industries and financial years.

8.1.1.2 ***Results Based on Market Measure of Financial Performance (Q-ratio)***

Table 16 contains OLS regression results for the *equilibrium-variable* model based on the market based measure of financial performance (Q-ratio). Similarly, the variables investigated in this model are the first 11 corporate governance variables. As has been explained above, to facilitate comparison and easy following, Table 15 presents a summary of all seven hypotheses and results for the *equilibrium-variable* model based on all firm years for both the ROA and the Q-ratio. Column 3 of Table 16 first reports the results of multivariate regression of the Q-ratio only on the 11 corporate governance variables, while columns 4 to 9 present the results of multivariate regression of the Q-ratio on the 11 corporate governance

variables and the control variables for the pooled sample, as well as for each of the five firm-years, respectively.

Consistent with the ROA, Column 3 of Table 16 indicates that the *F-value* is statistically significant at the 1% level. This suggests that the null hypothesis that the coefficients of the 11 corporate governance variables are jointly equal to zero can be rejected. It implies that the coefficients on the 11 corporate governance mechanisms can jointly explain significant differences in the sampled firms' market value. The adjusted R^2 is approximately 6%, which is also virtually the same as the adjusted R^2 obtained for the ROA. This means that at least 6% of the variations in the sampled firms' market value (Q-ratio) can be explained jointly by the 11 corporate governance variables.

With the exceptions of the negative coefficient on the existence of an audit committee, and the positive coefficient on CEO duality, the signs of the coefficients of the remaining 9 corporate governance mechanisms are as theoretically expected (see column 7 of Table 15). However, only board diversity is statistically significant. The statistically significant coefficient on the constant term in column 3 of Table 16 appears to suggest that there may be omitted variables bias. Therefore, to investigate whether the lack of significant relationship between the Q-ratio and the corporate governance structures is spuriously caused by some omitted variables, the control variables are added to the regressions in Columns 4 to 9 of Table 16.

Table 16 indicates that the *F-Value* is statistically significant for the pooled sample, and for each of the five firm-years except 2005. The adjusted R^2 for each of the five years is between 11% and 24%, and 29% for the combined sample. This is consistent with the results of previous studies. For instance, Weir *et al*. (2002, p.597), and Haniffa and Hudaib (2006, p.1053) report adjusted R^2 of 22% and 28%, respectively, for their pooled regressions of the Q-ratio on a group of corporate governance and control variables.

Of particular interest, the adjusted R^2 of the regressions of ROA and the Q-ratio on the 11 corporate governance mechanisms alone are virtually the same. However, including the control variables leads to substantially higher adjusted R^2 for the Q-ratio than for the ROA. This implies that the observed difference in the ability of the 11 corporate governance variables to explain the variations in the ROA and Q-ratio is accounted for by the contribution of the control variables.

With respect to the 11 corporate governance structures, the results show some level of sensitivities when the control variables are added. First, the direction of the coefficients on

CEO duality, board diversity, and the existence of audit, nomination and remuneration committees have changed. Second, board diversity, which was statistically significant, is now insignificant, whereas board size and director ownership that were statistically insignificant, are now significant. These sensitivities may be due to omitted variables bias arising out of the exclusion of the control variables. Therefore, the discussion below is based on the estimated coefficients that include the control variables.

To begin with, and in contrast to accounting returns, board size is found to be positively related to the market based measure of performance and statistically significant for the full sample. This lends support to hypothesis two (see column 10 of Table 15) that there is a statistically significant and positive relationship between the Q-ratio and board size. It also supports past evidence that documents a statistically significant and positive nexus between the Q-ratio and board size (e.g., Adams and Mehran, 2005; Beiner *et al*., 2006; Henry, 2008; Mangena and Tauringana, 2008). It, however, contradicts the results of past studies that report a statistically significant and negative link between board size and the Q-ratio (e.g., Yermack, 1996; Vefeas 1999a and b; Haniffa and Hudaib, 2006; Cheng *et al*., 2008; Coles *et al*., 2008; Guest, 2009).

Theoretically, this indicates that the market perceives larger boards as more effective. This is because larger boards offer greater access to their firms' external environment, which reduces uncertainties and facilitates securing of critical resources, such as finance, raw materials and contracts (e.g., Pearce and Zahra, 1992; Goodstein *et al*., 1994). Within the South African context, securing and renewing profitable government and mining contracts, for example, are usually tied-up with meeting black economic empowerment and employment equity targets (e.g., Murray, 2000; Malherbe and Segal, 2003). As has already been discussed in chapter six, however, larger firms have significantly higher levels of compliance with black economic empowerment and employment equity provisions. This means that larger firms may be more likely to secure profitable government backed black economic empowerment contracts that may help them to receive higher market valuation than their smaller counterparts.

CEO duality and board diversity are found to be negatively related to market valuation, but both are statistically insignificant over the entire sample period. The coefficients are in the opposite direction to those of the accounting returns. The statistically insignificant and negative coefficient on CEO duality does not support hypothesis three (see column 10 of Table 15), as well as the recommendations of King II. It implies that CEO duality has no impact on the sampled firms' market value. Empirically, this finding is in line with prior

studies that report a statistically insignificant link between the Q-ratio and CEO duality (e.g., Vefeas and Theodorou, 1998; Sanda *et al*., 2005; Haniffa and Hudaib, 2006). Specifically, the finding offers further empirical support to the results of Mangena and Chamisa (2008) that role duality has no impact on on the likelihood that a firm will be suspended from listing on the JSE in a sample of 81 South African listed firms. The negative coefficient, however, suggests that the market perceives CEO duality as a bad practice. This is because it tends to give too much power to one person who can choose to engage in opportunistic activities.

The statistically insignificant and negative coefficient on board diversity implies that hypothesis one (see column 10 of Table 15) is similarly rejected. It also contradicts the recommendations of King II and the results of Carter *et al*. (2003) that suggest a statistically significant and positive link between board diversity and the Q-ratio. This finding is, however, in line with the result of Rose (2007) that indicates that board diversity has statistically insignificant relationship with the Q-ratio. Theoretically, this suggests that the market views diversed board members as bringing their individual interests to the board. The greater the diversity of these interests, the higher the potential for conflicts and factions to emerge, which impairs boardroom cohesion and performance (Goodstein *et al*., 1994, p.243).

Of special note, the differences in the sensitivities of board size and the other corporate governance mechanisms, that will be discussed below, towards the two performance measures, may be explained by the differences in their respective effects, strengths, and weaknesses. For example, and as has been discussed in subsection 5.2.2.3 of chapter five, as a historical measure, ROA is unable to reflect current changes in market valuation. By contrast, as a market measure, the Q-ratio reflects expected future developments that may be masked by current fluctuations in business conditions. It also offers empirical support to previous evidence, which suggests that insiders (managers – ROA) and outsiders (shareholders – Q-ratio) value corporate governance differently (Black *et al*., 2006a, p.370; Haniffa and Hudaib, 2006). Overall, it appears to justify the use of both accounting and market based measures of performance, allowing each measure to complement the weaknesses of the other.

In contrast to the ROA, the coefficients on the percentage of NEDs and the frequency of board meetings are positive, but the coefficient on the percentage of NEDs is not statistically significant over the entire sample period, while the coefficient on the frequency of board meetings is only significant in 2003. The statistically insignificant and positive relationship between the percentage of NEDs and the Q-ratio does not offer empirical support to the recommendations of King II and hypothesis four (see column 10 of Table 15).

Table 16: OLS Regression Results of the Equilibrium-Variable Model Based on Tobin's Q (Q-ratio – Market Measure)

	Exp. Sign	All firm years	All firm years	2002	2003	2004	2005	2006
Adjusted R^2		.062	.290	.171	.164	.243	.110	.153
Standard error		.623	.542	.501	.492	.455	.641	.651
Durbin-Watson		1.032	.983	2.008	1.740	2.105	1.905	2.007
F-value		3.466(.000)***	7.690(.000)***	1.660(.076)*	1.749(.048)**	2.286(.006)***	1.504(.108)	1.763(.042)**
No. of observations		500	500	100	100	100	100	100
Constant		1.322(.000)***	.642(.024)**	.572(.466)	.799(.113)	2.076(.000)***	.451(.618)	-.576(.559)
Board size	+	.020(.101)	.022(.064)*	.003(.910)	.030(.251)	.028(.257)	.026(.412)	.038(.226)
CEO duality	-	.002(.985)	-.117(.153)	-.082(.635)	-.140(.390)	-.143(.442)	-.310(.320)	-.078(.756)
Non-executive dtors.	+	.003(.278)	.003(.255)	.003(.572)	-.002(.582)	.006(.159)	.004(.607)	.006(.296)
Dtor. ownership	+	-.011(.217)	-.018(.084)*	.000(.995)	.008(.700)	-.005(.781)	-.051(.053)*	-.038(.130)
Dtor. ownership^2	-/+	.000(.287)	.000(.153)	-.000(.910)	-.000(.564)	.000(.786)	.002(.065)*	.001(.147)
Dtor. ownership^3	-/+	-.000(.264)	-.000(.192)	-.000(.809)	-.000(.713)	-.000(.571)	-.000(.070)*	-.000(.116)
Board diversity	+	.179(.008)***	-.025(.701)	-.129(.384)	-.026(.852)	.073(.583)	.010(.956)	-.073(.694)
Board meetings	+	.021(.147)	.011(.424)	.014(.669)	.080(.010)***	-.002(.946)	-.001(.967)	.033(.460)
Audit committee	+	-.354(.473)	.068(.876)	.380(.664)	-.272(.698)	-1.093(.182)	.849(.362)	1.123(.291)
Nomination com.	+	.089(.220)	-.105(.141)	-.128(.420)	-.157(.348)	.019(.899)	.051(.813)	-.242(.231)
Remuneration com.	+	.229(.689)	-.119(.765)	.580(.313)	.239(.691)	-.134(.811)	.154(.839)	.534(.485)
Firm size	-	-	-.183(.003)***	.057(.706)	-.164(.264)	-.125(.325)	-.292(.179)	-.313(.157)
Capital structure	-/+	-	-.003(.000)***	-.006(.012)**	-.002(.218)	-.003(.082)*	-.004(.127)	-.005(.049)**
Sales growth	+	-	.002(.124)	.006(.048)**	.000(.982)	.007(.094)*	.008(.075)*	.004(.384)
Capital expenditure	-/+	-	.020(.005)***	.013(.484)	.002(.903)	.001(.954)	.031(.085)*	.019(.321)
Dual-listing	+	-	.086(.267)	.169(.372)	.135(.415)	.015(.919)	.093(.660)	-.072(.726)
Audit firm size	+	-	.271(.001)***	.315(.098)*	.333(.074)*	.291(.068)*	.220(.323)	.411(.066)*
Basic materials		-	.428(.000)***	.478(.057)*	.527(.023)**	.184(.343)	.251(.376)	.616(.024)**
Consumer services		-	.551(.000)***	.372(.101)	.421(.046)**	.390(.031)**	.585(.018)**	.393(.126)
Industrials		-	.217(.002)***	.183(.410)	.221(.269)	.212(.230)	.057(.825)	.718(.014)**
Technology		-	.308(.000)***	-.027(.916)	.184(.397)	.382(.050)**	.162(.547)	.409(.065)*
Year 2002		-	-.022(.811)	-	-	-	-	-
Year 2004		-	.183(.033)**	-	-	-	-	-
Year 2005		-	.398(.000)***	-	-	-	-	-
Year 2006		-	.581(.000)***	-	-	-	-	-

Notes: coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison. Director ownership^2 and director ownership^3 refers to director ownership squared and director ownership cubed, respectively.

The positive coefficient on the percentage of NEDs, however, lends support to the results of previous South African studies (e.g., Ho and Williams, 2003; Mangena and Chamisa, 2008). Mangena and Chamisa (2008) report, for example, that South African corporate boards dominated by NEDs are less likely to be suspended from the stock exchange. The statistically insignificant and positive nexus between the frequency of board meetings and the Q-ratio indicates that hypothesis five (see column 10 of Table 15) is also not empirically supported. It also implies that the recommendations of King II that South African corporate boards must hold a minimum of four meetings in a year are not empirically supported. It is also not in line with the results of prior studies that report a statistically significant and negative association between the frequency of board meetings and the Q-ratio (e.g., Vefeas 1999a; Carcello *et al*., 2002; Fich and Shivdasani, 2006).

By contrast, the positive coefficient supports the results of Karamanou and Vefeas (2005) and Mangena and Tauringana (2006) that document a positive relationship between the frequency of board meetings and the Q-ratio. Unlike the finding of this study, however, the results of Karamanou and Vefeas (2005) and Mangena and Tauringana (2006) were statistically significant. The positive, but statistically insignificant nexus between the frequency of board meetings and the Q-ratio also indicates that even though the frequency of board meetings has no valuation implications for the sampled firms, the market perceives it as a good corporate governance practice. This is because a higher frequency of board meetings can lead to enhanced managerial monitoring.

Similar to the results of the ROA, the existence of a remuneration committee is positively related to the Q-ratio. By contrast, the coefficients on the existence of audit and nomination committees are negative. Also, the coefficients on all three board committees are statistically insignificant over the entire sample period. This rejects hypothesis six (see column 10 of Table 15) and does also not lend empirical support to the recommendations of King II. The mixed and insignificant results may be explained by the fact that there is generally a high level of compliance with board committees, which results in insufficient variation among the sampled firms.

As has been explained above, this also brings into question as to the methodological appropriateness for estimating the corporate governance-financial performance link by using the *equilibrium-variable* model. This is because it can be argued that if all firms were to fully comply or not to completely comply with some of the single corporate governance provisions,

then there will simply be no cross-sectional variations in the variables for them to be value relevant in any regression.

Empirically, the findings are consistent with the results of prior studies that report a statistically insignificant relationship between board committees and the Q-ratio (e.g., Vefeas and Theodorou, 1998; Weir and Laing, 2000; Weir *et al*., 2002). Vefeas and Theodorou (1998), for example, report a statistically insignificant nexus between the presence of audit, nomination, and remuneration committees and the Q-ratio. By contrast, 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 the Q-ratio (e.g., Vefeas, 1999a; Karamanous and Vefeas, 2005). The finding is also not consistent with the results of Mangena and Chamisa (2008). Mangena and Chamisa (2008) report that the presence of an audit committee significantly reduces the possibility of a firm being suspended from listing on the JSE in a sample of 81 South African listed firms.

The results of director ownership and director ownership cubed are negatively correlated to market performance, whilst director ownership squared is positively associated with the Q-ratio. All of them are only statistically significant in 2005. This indicates that hypothesis seven is not supported (see column 10 of Table 15). The statistically significant and negative link between director ownership and the Q-ratio supports the entrenchment hypothesis (Short and Keasey, 1999; Beiner *et al*., 2006), as well as the results of previous South African studies (e.g., Ho and Williams, 2003; Mangena and Chamisa, 2008).

The implication of this finding is that at high levels of shareholding, directors tend to concentrate on maximising their own utility, such as guaranteed employment with attractive salaries to the disadvantage of other shareholders. This is because they hold enough voting power to effectively insulate themselves against any disciplinary action. The evidence of significant positive and negative coefficients on director ownership squared and director ownership cubed, respectively, offers additional empirical support to the results of Morck *et al*. (1988) and McConnell and Servaes (1990), who report significant non-monotonic relationship between director ownership and the Q-ratio. Overall, the statistically significant and negative coefficient on director ownership suggests director entrenchment with no evidence of a reversal to interest alignment even at higher levels of director ownership.

With respect to the control variables, all of them show the hypothesised relationships with the Q-ratio. Also, firm size, capital structure, audit firm size and capital expenditure are statistically significant for the combined sample, whereas sales growth is statistically

significant in 2002, 2004 and 2005. Audit firm size is also statistically significant for all firm years except 2005. Dual-listing, however, is not significant over the entire sample period. All the industry and year dummies except 2002 are significant for the pooled sample. As has been explained above, this also means that the substantial difference in the adjusted R^2 between ROA and the Q-ratio is explained by the contribution of the control variables.

The statistically significant and negative coefficient on firm size offers empirical support to the results of previous studies that report a negative relationship between firm size and the Q-ratio (e.g., Agrawal and Knoeber, 1996; Durnev and Kim, 2005), but contradicts the findings of those that establish a positive relationship (e.g., Yermack, 1996; Carter *et al*., 2003). Similarly, the significant negative coefficient on capital structure indicates that firms that use more debt restrict their financial flexibility and capacity to pursue positive NPV projects (Myers, 1977, p.148).

On the contrary, the statistically significant and positive coefficients on sales growth and capital expenditure suggest that faster growing firms receive higher valuation from the market, because of the expectation that they will generate higher future performance (Klapper and Love, 2004, p.712). The positive coefficient on dual-listing is consistent with recent evidence (e.g., Klapper and Love, 2004; Black *et al*., 2006a). Theoretically, this implies that South African firms that cross-list to the UK and US markets, and submit themselves to increased investor protection associated with those markets, are better able to exploit growth opportunities due to the greater access to external capital (Melvin and Valero, 2009, p.66). The positive and statistically significant coefficient on audit firm size over the entire sample period except 2005 means that firms that are audited by a big four audit firm receive higher market valuation than those that are audited by a non big four audit firm.

Finally, consistent with prior studies (e.g., Durnev and Kim, 2005; Haniffa and Hudaib, 2006), the results show that a firm's industry and year of operation affects its Q-ratio. The industry dummies show that consumer services firms (have highest statistically significant coefficient) performed significantly better than their counterparts in the other four industries. Similarly, the year dummies indicate that the average firm received significantly higher market valuation in 2006 (highest statistically significant coefficient) than in any other year.

To conclude, this subsection has discussed the results of the *equilibrium-variable* model based on both the ROA and the Q-ratio. In line with the prior *equilibrium-variable* literature, the results based on both the ROA and the Q-ratio are generally mixed. First, the findings suggest that regardless of the firm financial performance measure used, board

diversity has no statistically significant impact on firm financial performance in South Africa. This fails to support hypothesis one (see columns 6 and 10 of Table 15). It does not also lend support to 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 and non-whites that are currently on South African corporate boards.

Second, the findings indicate that market returns (Q-ratio) are significantly higher if a firm has a larger board size, but this is not reflected in any significant measure in its accounting returns (ROA). This statistically significant and positive relationship between the Q-ratio and board size supports hypothesis two (see column 10 of Table 15). By contrast, the statistically insignificant and negative relationship between ROA and board size do not support hypothesis two (see column 6 of Table 15). The positive board size and the Q-ratio relationship also contradicts much of the prior UK and US evidence (e.g., Yermack, 1996; Vefeas, 1999; Shabbir and Padget, 2005; Guest, 2009). However, it lends empirical support to a number of non UK and US studies (e.g., Beiner *et al*., 2006; Henry, 2008; Mangena and Tauringana, 2008).

This appears to imply that within the UK and US context, the stock market values the ability of smaller corporate boards to effectively monitor and advise managers higher than the potential greater access to resources that is usually associated with larger boards. In contrast, and within the South African context, the positive association between board size and the Q-ratio seems to indicate that greater access to a firm's external environment, which may facilitate securing critical resources that is often associated with larger boards, is rather highly valued by the stock market.

Third, the findings indicate that firms that combine the roles of board chairman and CEO generate significantly higher accounting returns than their counterparts that split the roles. This fails to support hypothesis three (see column 6 of Table 15). However, it has no significant impact on market valuation (also fails to support hypothesis three, see column 10 of Table 15) even though role or CEO duality is generally considered by the market as a negative corporate governance practice. This implies that the policy of King II and the JSE's Listing Rules for South African firms to follow Cadbury-style suggestion to split the two roles may not be appropriate. A major theoretical implication of the statistically significant and positive ROA-CEO duality relationship is that role duality allows a visionary and charismatic CEO the opportunity to have a sharper focus on firm objectives without excessive board interference.

Fourth, the findings indicate that boards with a higher percentage of non-executive directors generate significantly lower accounting returns, rejecting hypothesis four (see column 6 of Table 15). Further, even though having more non-executive directors on the board is perceived positively by the market, it has no significant impact on market valuation. This does not support hypothesis four (see column 10 of Table 15). It also implies that the Cadbury-style recommendation of King II and the JSE's Listing Rules that South African boards should consist of a majority of non-executive directors may not necessarily be applicable in South Africa.

Theoretically, the statistically significant and negative association between the percentage of non-executive directors and ROA supports stewardship theory. It suggests that non-executive directors often command less knowledge about the business, and find it difficult to understand the complexities of the firm. Also, corporate boards dominated by non-executive directors tend to stifle managerial initiative and delay strategic action, which arise from excessive managerial monitoring. This can impact negatively on a firm's ability to generate higher accounting returns.

Fifth, the findings suggest that the frequency of board meetings has no statistically significant impact on financial performance, regardless of the measure used. The statistically insignificant nexus between the frequency of board meetings and firm financial performance indicates that hypothesis five (see columns 6 and 10 of Table 15) is not empirically supported. It also implies that the recommendations of King II that South African corporate boards must hold a minimum of four meetings in a year are not empirically supported.

Sixth, the findings are mixed when it comes to board subcommittees. The findings indicate that firms that have established a nomination committee tend to generate higher accounting returns. This supports hypothesis six (see column 6 of Table 15). By contrast, the findings suggest that firms with audit and remuneration committees have no impact on accounting returns and market valuation. This fails to support hypothesis six (see columns 6 and 10 of 15). It generally implies that the Cadbury-style suggestion of King II and the JSE's Listing Rules that South African listed firms should establish audit, nomination, and remuneration committees may not be applicable.

The seventh and final finding indicates that the market values firms with higher director shareownership significantly lower, but higher director ownership appears to have no significant impact on accounting returns. This does not offer empirical support to hypothesis seve (see columns 6 and 10 of Table 15). It also implies that higher director shareownership

may result in director entrenchment and expropriation to the disadvantage of minority shareholders. Overall, and as expected, the results suggest that some of the single corporate governance mechanisms impact positively on firm financial performance, others impact negatively on the financial performance, whereas some seem to have no impact on the financial performance of the sampled firms.

The next subsection will discuss the results of the *compliance-index* model to test hypothesis eight. Specifically, the results based on the accounting based measure of financial performance (ROA) will first be discussed, followed by those based on the market based measure of financial performance (Q-ratio).

8.1.2 **Empirical Results: The Compliance-Index Model**

8.1.2.1 ***Results Based on the Accounting Measure of Financial Performance (ROA)***

Table 17 contains OLS regression results for the *compliance-index* model based on the accounting based measure of financial performance (ROA). For this model, the main variable of focus is the South African Corporate Governance Index (the *SACGI*). Column 3 of Table 17 first presents the results of a simple regression of ROA on the *SACGI* alone, whereas columns 4 to 9 report the results of multivariate regression of ROA on the *SACGI* and the control variables for the pooled sample, as well as for each of the five firm-years, respectively.

Column 3 of Table 17 suggests that the *F-value* of the simple regression is statistically significant at the 1% level. This means that the null hypothesis that the coefficient on the *SACGI* is equal to zero can be rejected. It indicates that the coefficient on the *SACGI* can explain significant variations in the sampled firms' accounting returns. The adjusted R^2 is approximately 10%. This implies that at least 10% of the variations in the sampled firms' accounting returns (ROA) can be explained by the quality of their internal corporate governance structures (the *SACGI*). This is relatively better compared with those reported by prior South African studies. Specifically, in a cross-country sample that include South Africa, Klapper and Love (2004, p.719) report an adjusted R^2 of 3% for a simple regression of ROA on their composite corporate governance index. As hypothesised (i.e., hypothesis eight), and in line with the suggestions of the parametric and non-parametric correlation coefficients, the coefficient on the *SACGI* is positive (.002) and statistically significant at the 1% level. This also supports the positive (.08) and significant ($p<.01$) relationship reported by Klapper and Love (2004, p.719).

Table 17: OLS Regression Results of the Compliance-Index Model Based on Return on Assets (ROA – Accounting Measure)

	Exp. Sign	All firm years	All firm years	2002	2003	2004	2005	2006
Adjusted R^2		.102	.189	.233	.071	.187	.165	.133
Standard error		.117	.111	.109	.110	.119	.119	.107
Durbin-Watson		.869	.881	2.097	1.834	1.727	2.155	1.892
F-value		57.706(.000)***	8.751(.000)***	3.736(.000)***	1.686(.090)*	3.071(.002)***	2.777(.004)***	2.383(.012)**
No. of observations		500	500	100	100	100	100	100
Constant		-.021(.1661)	.005(.808)	.000(.998)	.022(.614)	-.055(.259)	.002(.966)	.042(.378)
SACGI	+	.002(.0001)***	.002(.000)***	.003(.001)***	.002(.010)***	.002(.002)***	.002(.036)**	.001(.080)*
Firm size	+	-	.013(.165)	.009(.649)	-.006(.812)	.004(.869)	.056(.018)**	.002(.905)
Capital structure	-/+	-	.000(.004)***	-.001(.044)**	-.000(.830)	.000(.371)	-.001(.161)	-.001(.008)***
Sales growth	+	-	.002(.000)***	.002(.000)***	.001(.021)**	.002(.018)**	.001(.032)**	.002(.011)**
Capital expenditure	-/+	-	-.001(.563)	-.003(.295)	-.002(.506)	.002(.557)	-.001(.688)	-.001(.624)
Dual-listing	+	-	.012(.397)	-.027(.422)	.011(.732)	.007(.832)	.027(.446)	.038(.217)
Audit firm size	-	-	-.015(.270)	-.021(.473)	-.037(.240)	-.004(.900)	-.006(.854)	-.017(.566)
Basic materials		-	-.034(.043)**	.004(.907)	-.005(.893)	-.057(.154)	-.066(.100)*	-.043(.227)
Consumer services		-	-.021(.183)	-.034(.333)	-.061(.088)*	-.051(.204)	.025(.532)	.018(.603)
Industrials		-	-.025(.121)	-.033(.350)	-.028(.428)	-.054(.166)	-.012(.766)	.020(.571)
Technology		-	.004(.790)	-.012(.734)	-.010(.774)	-.002(.954)	.011(.778)	.044(.210)
Year 2002		-	.000(.998)	-	-	-	-	-
Year 2004		-	-.019(.224)	-	-	-	-	-
Year 2005		-	-.017(.305)	-	-	-	-	-
Year 2006		-	-.006(.698)	-	-	-	-	-

Notes: coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison.

To ascertain whether the statistically significant positive relationship could be spuriously caused by omitted control variables, the regressions in columns 4 to 9 of Table 17 include the control variables. They show that the *F-value* of each model is statistically significant. This means that the coefficients on the *SACGI* and the control variables can jointly explain significant variations in the sampled firms' accounting returns. The adjusted R^2 for each of the five years is between 7% to 23% for the 2002-2006 period and 19% for the pooled sample. Statistically, this means that between 7% to 23% of the variations in the sampled firms' accounting returns (ROA) can be explained by the quality of their internal corporate governance structures (the *SACGI*) and the control variables. Over the full five-year sample period, the model possesses an average of 19% explanatory power. This compares with the adjusted R^2 of 29% for the pooled sample, including the control variables, of Klapper and Love (2004).

Colum 4 of Table 17 indicates that the *SACGI* remains positive and statistically significant, after adding the control variables, over the entire sample period. This supports hypothesis eight that there is a statistically significant and positive relationship between the *SACGI* and firm financial performance, based on ROA. It also means that, on average, better-governed South African listed firms are associated with higher accounting returns than their poorly-governed counterparts. Specifically, the finding can be quantified as a one standard deviation improvement in the average firm's mean internal corporate governance (the *SACGI*) score from 60% to 82%, can be expected to be associated with an increase in its average accounting returns (ROA) by at least 4% (22.03 x .002) from 9% to 13%, *certeris paribus*.

Overall, the results are generally consistent with those of previous corporate governance studies (e.g., Gompers *et al*., 2003; Shabbir and Padget, 2005; Cui *et al*., 2008), but specifically with the findings of Klapper and Love (2004, p.719) and Chen *et al*. (2009). Using a cross-country sample that includes South African listed firms, Klapper and Love (2004) document a positive (.10) and statistically significant (p<.01) relationship between higher firm-level corporate governance quality and accounting returns (ROA).

Similarly, in a cross-country sample that includes South Africa, Chen *et al*. (2009) report a statistically significant and negative relationship between a firm-level composite corporate governance index and cost of equity capital. Theoretically, this suggests that better-governed firms in their sample are able to raise capital at cheaper cost to better exploit growth opportunities that helps in boosting accounting returns.

With respect to the control variables, the coefficient on capital structure and sales growth are statistically significant for the pooled sample, whereas firm size is only significant in year 2005. In contrast, the coefficients on audit firm size, dual-listing and the year dummies are not significant in any period, while all except the basic materials industry dummy is significant for the full sample, and also in year 2005.

The positive and statistically significant ($p<.05$) coefficient on firm size in 2005 is not consistent with expectations. It indicates that larger firms tend to be associated with higher accounting returns. It also contradicts previous results of Ho and Williams (2003), but is in line with those of Gompers *et al.* (2003), Klapper and Love (2004) and Shabbir and Padget (2005). As hypothesised, the coefficient on sales growth is significant and positively associated with financial performance as measured by ROA over the entire sample period. Theoretically, past sales growth tend to be positively correlated with future growth opportunities (Klapper and Love, 2004, p.720). This implies that firms with higher past sales growth are likely to be associated with higher accounting returns.

Similarly, and in line with predictions, the coefficient on capital structure (gearing) is positive and statistically significant for the pooled sample. It is, however, significant and negative in the year 2002 and 2006. As has already been discussed in subsection 5.2.2 of chapter five, gearing can either impact positively or negatively on ROA. The statistically significant and negative coefficient in 2002 and 2006, for example, suggests that due to the costs of financial distress, such as bankruptcy that are usually associated with higher levels of gearing, firms that use more debt restrict their financial flexibility and capacity to pursue positive NPV projects (Myers, 1977, p.148).

By contrast, the statistically significant and positive coefficient for the pooled sample indicate that higher levels of gearing can increase accounting returns by reducing agency conflicts associated with 'free cash flows' by opportunistic managers (Jensen, 1986, p.323). The negative relationship between gearing and performance also supports previous findings. Specifically, Bevan and Danbolt (2002, 2004) and Ho and Williams (2003) report statistically significant and negative relationship between gearing and accounting profits. The negative sign on the coefficient of audit firm size is theoretically expected, but it is statistically insignificant. This implies that audit firm size appears to have no impact on the sampled firms' accounting returns.

The statistically insignificant coefficients on dual-listing and the year dummies reject the hypotheses that dual-listing and firm year affect a firm's accounting returns. The negative

and statistically insignificant coefficient on dual-listing further rejects the results of Charitou and Louca (2009). Using a cross-country sample that include South Africa, Charitou and Louca (2009) find that dual-listing is positively associated with operating accounting returns.

It also rejects the suggestions of cross-country surveys conducted in emerging markets that include South Africa by CLSA (2000) and Deutsche Bank (2002) that cross-listing is expected to impact positively on operating financial performance. Finally, the significant negative coefficient on the basic materials industry dummy implies that basic materials firms tend to be associated with significantly lower accounting returns than their counterparts. This offers support to the results of Haniffa and Hudaib (2006) that a firm's industry of operation can affect its accounting (ROA) performance.

8.1.2.2 ***Results Based on the Market Measure of Financial Performance (Q-ratio)***

Table 18 contains OLS regression results for the *compliance-index model* based on the market based measure of financial performance (Q-ratio). Similarly, the main variable of focus is the *SACGI*. Column 3 of Table 18 first presents the results of a simple regression of the Q-ratio on the *SACGI* only, whilst columns 4 to 9 report the results of multivariate regression of the Q-ratio on the *SACGI* and the control variables for the full sample in addition to a regression for each of the five firm-years, respectively.

Consistent with the results of the ROA, Column 3 of Table 18 suggests that the *F-value* of the simple regression is statistically significant at the 1% level. This suggests that the null hypothesis that the coefficient on the *SACGI* is equal to zero can be rejected. It implies that the *SACGI* can explain statistically significant variations in the sampled firms' market value. The adjusted R^2 is 10%, which is very similar to the adjusted R^2 obtained for the ROA. This also indicates that at least 10% of the variations in the sampled firms' market value (Q-ratio) can be explained by the quality of their internal corporate governance structures (the *SACGI*). This is also an improvement in the results reported by Klapper and Love (2004). It is, however, very similar to the results of Black *et al*. (2006a).

Using a cross-country sample that includes South Africa, Klapper and Love (2004, p.719) report an adjusted R^2 of 3% for a simple regression of the Q-ratio on their composite corporate governance index. In a simple regression of the Q-ratio on their composite corporate governance index, Black *et al*. (2006a, p.381) document adjusted R^2 of 12%.

Table 18: OLS Regression Results of the Compliance-Index Model Based on Tobin's Q (Q-ratio – Market Measure)

	Exp. Sign	All firm years	All firm years	2002	2003	2004	2005	2006
Adjusted R^2		.100	.292	.160	.218	.071	.142	.167
Standard error		.617	.548	.506	.469	.530	.632	.641
Durbin-Watson		1.018	1.039	2.089	1.936	1.966	1.933	2.185
F-value		56.633(.000)***	14.729(.000)***	2.716(.005)***	3.503(.000)***	1.690(.089)*	2.495(.009)***	2.804(.004)***
No. of observations		500	500	100	100	100	100	100
Constant		.926(.000)***	.720(.000)***	.899(.000)***	.681(.000)***	.985(.000)***	1.172(.000)***	1.094(.000)***
SACGI	+	.009(.000)***	.004(.008)***	.001(.737)	.003(.015)**	.001(.667)	.002(.706)	.005(.096)*
Firm size	-	-	-.172(.000)***	.011(.912)	-.265(.009)***	-.209(.056)*	-.178(.154)	-.199(.110)
Capital structure	-/+	-	-.003(.000)***	-.003(.070)*	-.001(.344)	-.001(.561)	-.004(.069)*	-.006(.007)***
Sales growth	+	-	.001(.373)	.003(.226)	-.003(.223)	.002(.537)	.004(.291)	.002(.638)
Capital expenditure	-/+	-	.020(.001)***	.014(.309)	.014(.303)	.003(.831)	.039(.015)**	.027(.077)*
Dual-listing	+	-	.192(.006)***	.321(.039)**	.135(.334)	.146(.328)	.269(.152)	.136(.455)
Audit firm size	+	-	.158(.016)**	.134(.327)	.183(.172)	.160(.295)	.098(.571)	.143(.412)
Basic materials		-	.237(.004)***	.192(.266)	.238(.149)	.204(.248)	.080(.707)	.342(.110)
Consumer services		-	.416(.000)***	.257(.118)	.355(.021)**	.439(.014)**	.451(.033)**	.533(.014)**
Industrials		-	.099(.209)	-.032(.844)	-.043(.780)	.230(.178)	.032(.880)	.234(.268)
Technology		-	.215(.006)***	.184(.263)	.151(.323)	.206(.227)	.063(.765)	.358(.085)*
Year 2002		-	.053(.501)	-	-	-	-	-
Year 2004		-	.178(.024)**	-	-	-	-	-
Year 2005		-	.397(.000)***	-	-	-	-	-
Year 2006		-	.565(.000)***	-	-	-	-	-

Notes: coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison.

As predicted (i.e., hypothesis eight), the *SACGI* is positive (.009) and statistically significant at the 1% level. This finding also supports the results of prior studies. Specifically, in a simple regression of the Q-ratio on their composite corporate governance indices, Klapper and Love (2004) and Black *et al*. (2006a) separately report statistically significant and positive relationships of .011 and .006, respectively.

The statistically significant coefficient on the constant term in column 3 of Table 18 seems to suggest that there may be omitted variables bias. Therefore, to control for potential omitted variables bias, control variables are added to the regressions in columns 4 to 9 of Table 18. In line with the results for the ROA, Column 4 of Table 18 shows that the *F-value* of each model is statistically significant. It indicates that the coefficients on the *SACGI* and the control variables can jointly explain significant variations in the sampled firms' market value. The adjusted R^2 for each of the five years is between 7% and 21%, and 29% for the combined sample. This is generally similar to the results of prior South African studies. Using cross-country samples that include South Africa, Klapper and Love (2004, p.719), Durnev and Kim (2005, p.1482), and Morey *et al*. (2009, p.260) report adjusted R^2 that include control variables of 37%, 34%, and 17%, respectively.

As expected (i.e., hypothesis eight), Table 18 indicates that the coefficient on the *SACGI* is positive over the entire sample period. However, the coefficient is statistically significant for the combined sample, as well as in 2003 and 2006, but insignificant in 2002, 2004 and 2005[83]. The statistically significant coefficient for the pooled sample, and in 2003 and 2006 supports hypothesis eight that there is a statistically significant and positive relationship between the *SACGI* and the Q-ratio.

This indicates that investors reward South African listed firms that show higher standards of corporate governance with higher market valuation. Specifically, the result can be interpreted as a one standard deviation improvement in the average firm's internal corporate governance (the *SACGI*) score from 60% to 82%, can be expected to be associated with an

[83]The statistically insignificant coefficients in 2004 and 2005 in particular are not empirically too surprising because, and as has already been discussed in chapter six, compliance with the *SACGI* generally improves over time. As variability in corporate governance standards across the sample reduces over time, the variability in market valuation (variation in the Q-ratio over time will be discussed further in chapter nine) among the sampled firms appears to also reduce. That is, with convergence of corporate governance standards over time, the ability of the *SACGI* to explain valuation differences among the sampled firms seems to also reduce. This also offers firm-level evidence to support the results of cross country studies, including Klapper and Love (2004), Durnev and Kim (2005), Chen *et al*. (2009), and Morey *et al*. (2009), which suggest that corporate governance matters more in countries with poor legal and investor protection regimes.

increase in its average market valuation (Q-ratio) by at least 20% (22.03 x .009) from 1.49 to 1.79, all else equal.

Of particular interest, and as expected, the adjusted R^2 for the pooled sample of 29%, and the valuation impact of 20% for the Q-ratio, are substantially higher when compared with those of the ROA. As has already been discussed in subsection 5.2.2.3 of chapter five, this may be explained by the fact that ROA is a historical measure, which reflects actual accounting profits from the operations of firms. By contrast, as a market based measure, Q-ratio reflects potential future growth opportunities of firms. This implies that the association between firm-level improvements in the quality of corporate governance and financial performance is more likely to be tighter for the market based measure (Q-ratio) than for the accounting based measure of performance (ROA). The adjusted R^2 of the full sample in the regression analysis when the control variables are added is higher for the Q-ratio than for the ROA. The adjusted R^2 for the ROA and Q-ratio, however, become essentially the same when the control variables are excluded. This further suggests that the control variables account more for the observed differences in the adjusted R^2 between the two performance measures.

Overall, the positive relationship between the Q-ratio and the *SACGI* offers additional empirical support to the extant corporate governance literature, as well as the results of prior South African studies. For example, Beiner *et al*. (2006), Black *et al*., (2006a), and Henry (2008) find that corporate governance is positively correlated with the Q-ratio for a sample of Swiss, South Korean, and Australian listed firms, respectively. Similarly, using cross-country samples that include South Africa, Klapper and Love (2004), Durnev and Kim (2005), and Morey *et al*. (2009) separately report a statistically significant and positive link between the Q-ratio and the quality of a firm's corporate governance.

The evidence of a statistically significant and positive internal corporate governance-performance link is also in line with the extant theory. It has been suggested that compliance with a Code of Best Governance Practice, such as King II, is a major way by which firms signal to investors that they are better-governed, and by implication working in the best interests of shareholders (Shabbir and Padget, 2005, p.1). The positive perception is then translated by investors into higher valuation for such firms perceived by the market to be better-governed.

With regard to the control variables, the coefficient on sales growth, year 2002 and industrials firms' dummies are not statistically significant, whereas the rest are statistically significant for the combined sample. In line with predictions, firm size, and capital structure

are negatively associated with the Q-ratio, whilst sales growth, capital expenditure, audit firm size and dual-listing are positively correlated with the Q-ratio for the full sample.

Across the years, the negative coefficient on firm size is further statistically significant in 2003 and 2004, whereas the negative coefficient on capital structure is also significant in 2002, 2005 and 2006. The negative relationship between gearing and performance suggests that more profitable firms tend to use less debt than equity. This is because equity offers managers more financial flexibility (Shabbir and Padget, 2005, p.19). The negative size-performance link also indicates that investors perceive smaller firms as better performers than their larger counterparts (Haniffa and Hudaib, 2006, p.1052). Empirically, the findings are consistent with the results of prior corporate governance studies. Specifically, Agrawal and Knoeber (1996), Durnev and Kim (2005), and Henry (2008) report statistically significant and negative association between the Q-ratio and firm size.

Across the years, the positive coefficient on capital expenditure is also statistically significant in 2005 and 2006. The statistically significant and positive coefficients on capital expenditure offers empirical support to the theory that firms with greater investment in assets, innovation and technology, are more able to stimulate faster growth, and tend to be associated with superior sustainable performance (Jermias, 2007, p.829). The positive relationship between capital expenditure and the Q-ratio generally supports the results of prior studies (e.g., Black *et al*., 2006a; Brown *et al*., 2009).

Apart from the full sample, the positive coefficient on dual-listing is also statistically significant at the 5% level in 2002. The statistically significant and positive coefficient on dual-listing in 2002 supports the idea that firms resort to cross-listing as a way of reducing the agency costs of controlling shareholders by offering them greater access to cheaper external capital. This makes them better able to take advantage of growth opportunities relative to their non-dual-listed counterparts (Doidge *et al*., 2009, p.425; Melvin and Valero, 2009, p.66). Evidence of a statistically significant and positive dual-listing-performance link is also consistent with the results of recent corporate governance studies. Specifically, using cross-country samples that include South Africa, Klapper and Love (2004) and Charitou and Louca (2009) independently report that cross-listed firms generate higher financial performance than their non dual-listed counterparts. The positive and statistically significant coefficient on audit firm size for the pooled sample implies that the market values firms that are audited by a big four audit firm higher than those that are audited a non big four audit firm.

Of special interest is that the coefficients on all of the industry and year dummies for the combined sample are positive. As has been explained above, except for the coefficients on industrials firms and year 2002, which are statistically insignificant, all the industry and the year dummies for the pooled sample are statistically significant. The positive industry coefficients suggest that, on average, industrial firms (positive but insignificant coefficient) performed poorly compared with their counterparts in the other four industries. Similarly, and in line with the suggestions of the descriptive statistics, performance was lower for the average firm in 2002 than in the other years. By contrast, the results indicate that consumer services firms received higher (highest significant positive coefficient) market valuation than their counterparts. Also, and similar to the results of the descriptive statistics, the year coefficients show that the average sampled firm's market valuation was higher in 2006 (highest significant positive coefficient) than in the other years.

Overall, the results offer empirical support to prior evidence that suggests that a firm's industry and year of operation can affect its financial performance. Specifically, Klapper and Love (2004), Beiner *et al*. (2006), and Haniffa and Hudaib (2006) separately report statistically significant industrial differences in the levels of financial performance, whereas Shabbir and Padget (2005) and Henry (2008) independently find that financial performance of firms tend to differ over time.

To sum up, this subsection has presented the results of the *compliance-index* model. Consistent with the prior literature, it shows that irrespective of the performance measure used, on average, better-governed firms are associated with significantly higher financial performance than their poorly-governed counterparts. Generally, this offers empirical support to hypothesis eight. However, and interpreting the coefficients of the simple regressions, the association between the Q-ratio and firm-level corporate governance appears to be stronger than the relationship between firm-level corporate governance and ROA. This is theoretically expected because, as a historical based measure, accounting profit reflects actual company performance, while as a market based measure, the Q-ratio captures NPV of all future growth opportunities.

By contrast, when simple regressions of the performance measures (ROA and Q-ratio) against the *SACGI* without the control variables are run, the results show that the ability of the *SACGI* to explain variations in the ROA and Q-ratio are very similar. However, when the control variables are added, the explanatory power of the Q-ratio becomes substantially higher

than the ROA. This indicates that the contribution of the control variables accounts more for the observed difference in the *SACGI*'s ability to explain variations in the ROA and Q-ratio.

As have been discussed in chapters five, six and seven, the *SACGI* will be split into two: the *Social-SACGI* and the *Economic-SACGI*. This is to help in quantifying the economic consequence of complying with the nine South African context specific affirmative action and stakeholder corporate governance provisions (*the Social-SACGI*) on South African listed firms. Therefore, the next subsection will discuss the results obtained based on estimating the *Social-SACGI* and the *Economic-SACGI*.

8.1.3 **OLS Regression Results of the Link between Financial Performance and Sub-Indices**

Table 19 contains the regression results of the financial performance proxies (ROA and Q-ratio) on the two constructed sub-indices: the *Social-SACGI* and the *Economic-SACGI*. As have been explained in chapters five and six, the *Social-SACGI* consists of nine South African context specific affirmative action and stakeholder corporate governance provisions. These are board diversity on the basis of ethnicity (BDIVE1) and gender (BDIVG1), policies and practices with respect to black economic empowerment (BEE), HIV/Aids (HIV), employment equity (PEQ), health and safety (PHS), environment (PEP), corporate social investment (CSI), and ethics (DCE). The *Economic-SACGI* is made up of the remaining 41 'conventional' corporate governance provisions. Methodologically, splitting the *SACGI* is in line with past corporate governance studies (e.g., Durnev and Kim, 2005; Black *et al*., 2006a). For example, Durnev and Kim (2005) split their composite corporate governance index into investor protection, transparency, and social awareness sub-indices.

The rationale is to empirically investigate whether compliance with the two sub-indices results in different impacts on the sampled firms' financial performance. This is because, and from a theoretical perspective, it has been contended that the inclusion of the South African context specific affirmative and stakeholder issues as part of the general corporate governance provisions for listed firms to comply by King II imposes excessive costs burden on them (e.g., Kakabadse and Korac-Kakabadse, 2002; LSE, 2007). If this contention holds, then *a priori*, it can be expected that compliance with the *Social-SACGI* is more likely to negatively affect the sampled firms' financial performance. By contrast, compliance with the *Economic-SACGI* can be expected to have a positive impact on the sampled firms' financial performance.

Table 19: OLS Regression Results of Financial Performance on the Social and Economic Sub-indices

Performance Variable	Exp. sign	ROA	Q-ratio	ROA	Q-ratio	ROA	Q-ratio	ROA	Q-ratio
Adjusted R^2		.104	.103	.181	.298	.089	.087	.179	.291
Standard error		.117	.617	.112	.545	.118	.622	.112	.520
Durbin-Watson		.871	1.027	.873	1.040	.864	1.018	.978	1.059
F-value		58.641(.000)***	58.163(.000)***	8.332(.000)***	15.110(.000)***	49.892(.000)***	50.103(.000)***	8.233(.000)***	14.600(.000)***
No. of observations		500	500	500	500	500	500	500	500
Constant		-.004(.743)	1.011(.000)***	.030(.142)	.716(.000)***	-.013(.398)	.970(.000)***	.011(.614)	.746(.000)
Social-SACGI	-	.001(.000)***	.001(.000)***	.001(.000)***	.003(.009)***	-	-	-	-
Economic-SACGI	+	-	-	-	-	.002(.000)***	.009(.000)***	.002(.000)***	.006(.010)***
Firm size	-/+	-	-	.008(.384)	-.180(.000)***	-	-	.014(.140)	-.172(.000)***
Capital structure	-/+	-	-	.000(.002)***	-.003(.000)***	-	-	.000(.002)***	-.003(.000)***
Sales growth	+	-	-	.001(.000)***	.001(.476)	-	-	.002(.000)***	.001(.345)
Capital expenditure	-/+	-	-	-.001(.416)	.019(.002)***	-	-	-.001(.670)	.021(.001)***
Dual-listing	+	-	-	.016(.236)	.168(.006)***	-	-	.019(.191)	.210(.002)***
Audit firm size	-/+	-	-	.002(.905)	.161(.009)***	-	-	-.012(.368)	.172(.010)***
Basic materials		-	-	-.042(.010)***	.230(.004)***	-	-	-.034(.043)**	.232(.004)***
Consumer services		-	-	-.019(.244)	.408(.000)***	-	-	-.019(.240)	.423(.000)***
Industrials		-	-	-.022(.177)	.101(.196)	-	-	-.025(.124)	.101(.202)
Technology		-	-	-.000(.995)	.200(.011)**	-	-	.007(.675)	.219(.005)***
2002		-	-	-.009(.573)	.049(.526)	-	-	-.001(.961)	.047(.552)
2004		-	-	-.016(.321)	.175(.025)**	-	-	-.018(.264)	.183(.020)**
2005		-	-	-.012(.462)	.391(.000)***	-	-	-.014(.374)	.404(.000)***
2006		-		-.001(.993)	.559(.000)***			-.004(.823)	.574(.000)***

Notes: coefficients are in front of parenthesis. ***, and ** denote p-value is significant at the 1% and 5% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison.

Columns 3 and 4 of Table 19 present the regression results of ROA and Q-ratio on the *Social-SACGI* alone without the control variables. The *F-values* of both regressions are statistically significant at the 1% level. Therefore, the null hypothesis that the coefficient on the *Social-SACGI* is equal to zero can be rejected. It means that the coefficient on the *Social-SACGI* can explain significant differences in the sampled firms' financial performance. The adjusted R^2 is approximately 10% for both the ROA and Q-ratio. This means that on its own, the *Social-SACGI* can explain approximately 10% of the variability in the sampled firms' ROA and Q-ratio. This is very similar to the adjusted R^2 reported in Column 3 of Tables 17 and 18 for the *SACGI*, but statistically 0.2% and 0.3% higher in the case of ROA and the Q-ratio, respectively. As have been discussed in chapters six and seven, this is expected because the average firm's compliance level with the *Social-SACGI* was higher (67%) than the average firm's compliance level (60%) with the *SACGI*. This explains the marginally higher explanatory power of the *Social-SACGI* compared with the *SACGI*.

The coefficient on the *Social-SACGI* under both the ROA and Q-ratio is positive and statistically significant at the 1% level. The positive link between the *Social-SACGI* and the two financial performance proxies (ROA and Q-ratio) is contrary to theoretical expectations. This implies that, on average, firms that comply better with the South African context specific affirmative action and stakeholder corporate governance provisions (*the Social-SACGI*) are associated with higher accounting returns and/or receive higher market valuation.

The statistically significant coefficient on the constant term in column 4 (under the Q-ratio) of Table 19 seems to suggest that there may be omitted variables bias. As a result, to test whether the unexpected positive relationship between the *Social-SACGI* and the performance proxies is spuriously caused by some omitted variables, the control variables are added to the regressions in Columns 5 and 6 of Table 19. The *F-values* of both regressions are statistically significant at the 1% level. This means that the null hypothesis that the coefficients on the *Social-SACGI* and the control variables are jointly equal to zero can be rejected. This indicates that the coefficients on the *Social-SACGI* and the control variables can jointly explain significant differences in the sampled firms' financial performance. The adjusted R^2 is approximately 18% and 30% for the ROA and Q-ratio, respectively. This means that the *Social-SACGI* together with the control variables can explain approximately 18% and 29% of the variability in the sampled firms' ROA and Q-ratio, respectively. This is also very similar to the adjusted R^2 reported in Column 4 of Tables 17 and 18 for the *SACGI* with the control

variables, but statistically 0.8% lower with respect to the ROA, and .6% higher in the case of the Q-ratio.

Similar to the results of the *SACGI*, when simple regressions are run, the ability of the *Social-SACGI* to explain variations in the ROA and Q-ratio are essentially the same. However, once control variables are included, the ability of the *Social-SACGI* to explain variations in the Q-ratio is substantially (12%) higher than the ROA. This implies that the observed difference in explanatory power between the ROA and Q-ratio can be attributed to the effects of the control variables.

With respect to the coefficient on the *Social-SACGI*, it remains positive under both performance measures, the ROA and Q-ratio. The main difference, however, is that whereas the coefficient under the ROA remains unchanged at .001, that of the Q-ratio has increase from .001 to .003. This means that the valuation impact for complying with the *Social-SACGI* when control variables are included is higher at 9% (i.e., 29.21 x .003) for the Q-ratio than for the ROA at 3% (i.e., 29.21 x .001). As has already been explained above, this is theoretically expected because, as a market based measure, Q-ratio captures discounted future expected cash flows without accounting for potential deviations from actual cash flows. By contrast, as a historical based measure, ROA reflects actual accounting profits from operations, including deviations from projected profits. This explains the observed difference in valuation consequences of complying with the *Social-SACGI* between the ROA and Q-ratio.

What then explains the positive rather than the theoretically expected negative relationship between the *Social-SACGI* and financial performance proxies? As have been discussed in chapters six and seven, both the Pearson and Spearman correlation coefficients indicate that the levels of compliance with the *Social-SACGI* are statistically significant and positively correlated with the levels of compliance with the *SACGI*. This shows that, on average, the sampled firms' with higher total corporate governance (the *SACGI*) scores also tend to comply better with the South African context specific affirmative action and stakeholder corporate governance provisions (the *Social-SACGI*).

Practically, and as will be explained further below, this means that the valuation consequences of complying with the South African context specific affirmative action and stakeholder corporate governance provisions appears to outweigh the costs implications such that there is a net positive impact on financial performance. Empirically, the positive coefficient offers support to the results of Durnev and Kim (2005, p.1482) who report a

positive, but statistically insignificant, relationship between their social awareness sub-index and the Q-ratio.

Despite being contrary to theoretical expectations, evidence that the sampled firms tend to be associated with higher accounting returns (ROA) or investors value (the Q-ratio) compliance with the affirmative action and stakeholder corporate governance provisions in South Africa is, however, less surprising. As has been discussed in chapters two and three, even though the South African corporate governance model is predominantly Anglo-American, listed firms are officially required to comply with a number of affirmative action and stakeholder provisions. This compels listed firms to depict some of the major characteristics of both the '*shareholding*' and '*stakeholding*' governance models. Most of these affirmative action and stakeholder provisions are meant to address some of the apparent negative social and economic legacies of Apartheid in South Africa.

As has also been discussed in chapter three, apart from being part of King II and the JSE's listing rules, some of the stakeholder provisions, such as employment equity (PEP) and black economic empowerment (BEE) are backed by enforceable statutory legislation. There are also occasional implicit threats from government (political cost) of its intentions to introduce more stringent laws if firms do not voluntarily comply (e.g., Rossouw *et al*., 2002; West, 2009). This implies that listed firms, and especially large companies, are more likely to voluntarily comply with the South African context specific affirmative action and stakeholder provisions in order to minimise potential political costs, such as strigent regulation, taxation, and nationalisation (Watts and Zimmerman, 1978, p.115; Andreasson, 2009, p.22). Together, they appear to compel firms to comply with the affirmative action and stakeholder provisions, and also seems to explain why compliance with the *Social-SACGI* is higher than the *SACGI*.

Crucially, and of a particular relevance to basic materials and technology firms, securing and renewing profitable government and mining contracts, for instance, are normally linked to satisfying black empowerment and employment equity targets (e.g., Murray, 2000; Malherbe and Segal, 2003). This means that compliance with the *Social-SACGI* may be a major way by which firms can gain access to valuable resources, including securing profitable government backed empowerment deals and contracts that can facilitate growth and improve long-term financial performance. This seems to serve as a major additional motivation for firms to voluntarily comply with the *Social-SACGI*, and hence, appears to explain the positive association between the *Social-SACGI* and both the ROA and Q-ratio.

With reference to the control variables, their statistical significance and direction of the coefficients remain very similar to those reported in column 4 of Tables 17 and 18, respectively. For example, the significance and the coefficients of firm size, capital structure, sales growth, capital expenditure, audit firm size and dual-listing under both the ROA and Q-ratio remain unchanged when compared with those of the combined *SACGI*, indicating that the results are stable. Overall, the results suggest that the *Social-SACGI* holds significant explanatory power over the variability in firm financial performance with or without the control variables.

Columns 7 and 8 of Table 19 report the regression results of ROA and Q-ratio on the *Economic-SACGI* alone without the control variables. The *F-values* of both regressions are statistically significant at the 1% level. This suggests that the null hypothesis that the coefficient on the *Economic-SACGI* is equal to zero can be rejected. It indicates that the coefficient on the *Economic-SACGI* can explain significant differences in the sampled firms' financial performance. The adjusted R^2 is approximately 9% for both the ROA and Q-ratio. This means that on its own, the *Economic-SACGI* can explain approximately 9% of the variability in the sampled firms' ROA and Q-ratio. This is approximately 1% less than the adjusted R^2 reported in Column 3 of Tables 17 and 18 for the *SACGI*. This is expected because, on average, the *Social-SACGI* holds more explanatory power than the *SACGI*. As a result, the *Economic-SACGI* appears to loose some of its explanatory power through the exclusion of the *Social-SACGI* from the *SACGI*. Consistent with theoretical predictions, the coefficient on the *Economic-SACGI* under both the ROA and Q-ratio is positive and statistically significant at the 1% significance level. This supports the previous conclusion that, on average, better-governed firms are associated with higher financial performance than their poorly-governed counterparts.

The statistically significant coefficient on the constant term in column 8 (under the Q-ratio) of Table 19 appears to suggest that there may be omitted variables bias. Therfore, to ascertain whether the positive relationship between the *Economic-SACGI* and the performance proxies is spuriously caused by some omitted variables, the control variables are included in the regressions in Columns 9 and 10 of Table 19. The *F-value* of both regressions are statistically significant at the 1% level. This implies that the null hypothesis that the coefficients on the *Economic-SACGI* and the control variables are jointly equal to zero can be rejected. This indicates that the coefficients on the *Economic-SACGI* and the control variables can jointly explain significant differences in the sampled firms' financial performance. The

adjusted R^2 is approximately 18% and 29% for the ROA and Q-ratio, respectively. This means that the *Economic-SACGI* together with the control variables can explain approximately 18% and 29% of the variability in the sampled firms' ROA and Q-ratio, respectively. This is also very similar to the adjusted R^2 reported in Column 4 of Tables 17 and 19 for the *SACGI* with the control variables, but statistically 1% and .1% less in the case of ROA and Q-ratio, respectively.

With respect to the coefficient on the *Economic-SACGI*, it remains positive under both the ROA and Q-ratio. The main difference, however, is that while the coefficient under the ROA remains the same at .002, that of the Q-ratio has decreased from .009 to .006. This may also be explained by the exclusion of the impact of the *Social-SACGI* from the *SACGI*.

With reference to the control variables, their statistical significance and direction of the coefficients remain essentially the same as those reported in column 4 of Tables 17 and 18, respectively. For example, the significance and the coefficient of firm size, capital structure, sales growth, capital expenditure, audit firm size and dual-listing under both the ROA and Q-ratio remain unchanged when compared with those of the combined *SACGI*, indicating that the results are stable. Overall, the results suggest that the *Economic-SACGI* holds significant explanatory power over the variability in the sampled firms' financial performance with or without the control variables. This reinforces the earlier conclusion that South African listed firms with higher quality corporate governance standards, on average, tend to be associated with higher financial returns than their counterparts with lower quality corporate governance standards.

In summing up, this subsection has examined the economic consequences of complying with the nine South African context specific affirmative action and stakeholder corporate governance provisions (the *Social-SACGI*) for South African listed firms. Contrary to theoretical expectations, compliance with the *Social-SACGI* is found to be statistically significant and positively related to both the ROA and Q-ratio. The main implication of this evidence is that South African listed firms that comply better with the nine affirmative action and stakeholder corporate governance provisons tend to be associated with significantly higher financial returns, as measured by the ROA and Q-atio than their counterparts that do not.

Despite being contrary to theoretical predictions, however, the results can be explained within the South African context. Compliance with the *Social-SACGI* appears to be a major way by which South African listed firms seem to reduce possible political costs and also gain access to valuable resources, such as securing profitable mining and government contracts to

expand growth opportunities and improve long-term financial performance. This appears to serve as a great motivation for firms to comply with the *Social-SACGI*, and thus may explain the positive relationship between the *Social-SACGI* and both the ROA and Q-ratio. As hypothesised, the *Economic-SACGI* is found to be statistically significant and positively associated with both the ROA and Q-ratio. Overall, the results support the earlier conclusion that, on average, better-governed South African listed firms tend to be associated with higher financial returns than their poorly-governed counterparts.

In the final section below, the empirical strengths of the *compliance-index* (*the Economic-SACGI*) model and the *equilibrium-variable* model will be assessed and compared using their respective results, as well as the summary regression diagnostics. Specifically, subsection 8.2.1 will compare their respective regression results, whilst subsection 8.2.2 will carry out similar comparison using their respective summary regression diagnostics.

8.2 **A COMPARISON OF THE RESULTS OF THE COMPLIANCE-INDEX AND THE EQUILIBRIUM-VARIABLE MODELS**

As has been discussed in subsection 5.2.1 of chapter five, the prior literature has mainly either used a *compliance-index* model or an *equilibrium-variable* model. To date, no researcher has used both approaches within the same study and context in order to assess their respective potential empirical strengths. This section attempts to fill this gap in the prior literature by comparing further the results obtained under the *compliance-index* and the *equilibrium-variable* models.

8.2.1 **A Comparison of the Empirical Results of the Compliance-Index and the Equilibrium-Variable Models**

Since the *compliance-index* model contains conventional (41 out of 50) and non-conventional (9 out of 50) corporate governance provisions, it may be in appropriate to compare its results with those of the *equilibrium-variable* model, which contains only conventional corporate governance mechanisms. As a result, the comparison is done by using the *Economic-SACGI* and the *equilibrium-variable* model. Comparing the results[84] of the

[84]Despite the fact that the two models have different number of explanatory variables, drawing comparisons of the respective strengths of their empirical results is deemed appropriate. This is because both models are estimated based on the same dataset and context. More importantly, and as has been discussed in subsection 5.2.1 of chapter five, the models are based on distinct or contrasting ontological, epistemological, methodological and data requirements assumptions. For example, past researchers using the *compliance-index* model have usually composed some measure of a 'compliance or composite' corporate governance index in examining the corporate

equilibrium-variable model in Tables 14 and 16 to those of the *compliance-index* (*the Economic-SACGI*) in Table 19 model and ignoring possible endogenity problems and potential interdependences[85], a number of interesting findings emerge. The results contained in Table 19 show that irrespective of the performance measure used, the *Economic-SACGI* is statistically significant with consistent positive coefficient over the entire sample period (for brevity purposes, the results for the firm years are not reported here) in the case of the ROA. The *Economic-SACGI* is statistically insignificant in 2002, 2004 and 2005 (for brevity purposes, the results for the firm years are not presented here) with respect to the Q-ratio.

However, the *p-values* are relatively low (relatively close to becoming statistically significant) with consistently positive coefficients. Overall, and consistent with the results of recent researchers who also constructed some measure of 'composite' corporate governance index (e.g., Gompers *et al*., 2003; Beiner *et al*., 2006; Henry, 2008), it suggests that a firm's internal corporate governance structures significantly and positively impact on its financial (both accounting and market based measures) performance.

By contrast, and in line with previous evidence (e.g., Yermack, 1996; Vefeas, 1999; Haniffa and Hudaib, 2006), the results of the *equilibrium-variable* model presented in Tables 14 and 16 are highly mixed. Irrespective of the performance proxy used, most of the corporate governance variables are statistically insignificant, and even where they are found to be significant, the sign of the coefficients are not consistent across the performance measures. Overall, and consistent with past evidence (e.g., Weir and Laing, 2000; Weir *et al*., 2002), the results obtained from this model suggest either a statistically weak or insignificant relationship between the selected single internal corporate governance structures and financial performance.

In summary, it is evident from the reported results that the *compliance-index* (*Economic-SACGI*) model provides better empirical properties, as well as explanatory power than the *equilibrium-variable* model. In the next and last subsection, summary regression diagnostics will be examined further to ascertain whether similar conclusions can be drawn.

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governance-financial performance link (e.g., Gompers *et al*., 2003; Beiner *et al*., 2006; Black *et al*., 2006a; Henry, 2008; Morey *et al*., 2009). Similarly, the *equilibrium-variable* model researchers have applied different measures and/or number of single corporate governance metrics in assessing the corporate governance-financial performance relationship, such as board size (Yermack, 1996; Guest, 2009), director ownership (Morck *et al*., 1988; McConnell and Servaes, 1990), the frequency of board meetings (Vefeas, 1999a), board diversity (Carter *et al*., 2003), as well as a number of corporate governance provisions together (e.g., Laing and Weir, 1999; Weir *et al*., 2002; Bozec, 2005; Haniffa and Hudaib, 2006).

[85]In chapter nine, the extent to which the results reported in this chapter are robust or sensitive to the potential existence of endogeneities and interdependences among possible alternative corporate governance mechanisms will be examined.

8.2.2 **A Comparison of Summary Regression Diagnostics**

First, and as has been discussed in chapter seven, normal distributional properties and statistics were conducted for both the *compliance-index* (the *Economic-SACGI*) and *equilibrium-variable* models. They indicate that irrespective of the financial performance measure and regression diagnostic used, the *compliance-index* (the *Economic-SACGI*) model provides better distributional properties than the *equilibrium-variable* model. For example, while none of the computed tolerance statistics for the *compliance-index* (the *Economic-SACGI*) model is above the critical value of one, some of the *equilibrium-variables*, such as director ownership, have tolerance statistics well above the critical value of one. Similarly, the statistics show that the *equilibrium-variable* model possesses poor Cook's distances, condition indices, eigenvalues, variance proportions, VIF, and studentised residuals, in comparison with those of the *compliance-index* (the *Economic-SACGI*) model.

Second, Table 20 presents summary regression diagnostics from both the *compliance-index* (the *Economic-SACGI*) and the *equilibrium-variable* models. They have already been reported in Tables 14, 16 and 19, but have been repeated to facilitate comparison. Panels *A* to *G* report summary regression diagnostics for: the pooled sample, but without the control variables; the pooled sample with the control variables; 2002; 2003; 2004; 2005; and 2006 firm years, respectively.

For each model, adjusted R^2, *F-value* and its statistical significance, standard error, and Durbin-Watson statistics are reported. Briefly, the adjusted R^2 provides an indication of the extent to which the internal corporate governance variables are able to explain the observed variability in the financial performance measure under consideration. The higher the adjusted R^2, the greater the explanatory power of the model.

The *F-value* tests for whether the coefficients on all the independent (corporate governance) variables in a particular model are jointly significant. The lower the significance level (i.e., closer to zero), the better the model. The standard error is a measure of the standard deviation of the distribution of the regression residuals. The lower the standard errors, the better the model. Durbin-Watson statistic tests for the level of autocorrelation in a particular model. A higher Durbin-Watson statistic indicates the absence of serious autocorrelation problems.

Table 20: A Comparison of Summary Regression Diagnostics

Regression Diagnostics	Compliance-Index Model (*E-SACGI*)		Equilibrium-Variable Model	
	ROA	Q-ratio	ROA	Q-ratio
Panel A: All firm Years – without control variables				
Adjusted R^2	.089	.087	.063	.062
F-value	49.892	50.103	3.522	3.466
F-value significance	.000	.000	.000	.000
Standard error	.118	.622	.116	.623
Durbin-Watson statistic	.864	1.018	.904	1.032
All firm Years – with control variables				
Adjusted R^2	.179	.291	.115	.290
F-value	8.233	14.600	3.125	7.690
F-value significance	.000	.000	.000	.000
Standard error	.110	.520	.114	.542
Durbin-Watson statistic	.978	1.059	.925	.983
Panel C: 2002 firm Year				
Adjusted R^2	.218	.194	-.086	.171
F-value	3.867	3.479	.747	1.660
F-value significance	.000	.000	.781	.076
Standard error	.103	.492	.115	.501
Durbin-Watson statistic	2.125	2.064	2.010	2.008
Panel D: 2003 firm Year				
Adjusted R^2	.054	.206	.007	.164
F-value	1.634	3.158	1.028	1.749
F-value significance	.095	.000	.419	.048
Standard error	.109	.436	.115	.492
Durbin-Watson statistic	1.846	2.085	1.794	1.740
Panel E: 2004 firm Year				
Adjusted R^2	.204	.086	.021	.243
F-value	3.648	1.985	1.144	2.286
F-value significance	.000	.046	.331	.006
Standard error	.103	.518	.127	.455
Durbin-Watson statistic	1.864	1.959	2.114	2.105
Panel F: 2005 firm year				
Adjusted R^2	.185	.154	.042	.110
F-value	3.672	3.658	1.180	1.504
F-value significance	.000	.000	.298	.108
Standard error	.101	.624	.126	.641
Durbin-Watson statistic	2.423	1.938	1.980	1.905
Panel G: 2006 firm year				
Adjusted R^2	.168	.184	.102	.153
F-value	3.648	3.216	1.615	1.763
F-value significance	.000	.001	.097	.042
Standard error	.124	.636	.110	.651
Durbin-Watson statistic	1.804	2.328	1.918	2.007

In line with the better distributional properties shown by the *compliance-index* (the *Economic-SACGI*) model, irrespective of the financial performance measure and the summary regression diagnostic used, they indicate that the *compliance-index* (the *Economic-SACGI*)

model possesses better summary diagnostics than the *equilibrium-variable* model. For example, while the adjusted R^2 of the *compliance-index* (the *Economic-SACGI*) model in Panel *A* of Table 20 suggests that the *Economic-SACGI* can explain about 9% of the variability in the ROA that of the *equilibrium-variable* model indicates that the 11 corporate governance mechanisms can only explain about 6%. The same trend is observed in Panels *B* to *G* of Table 20 for the Adjusted R^2.

With regards to the *F-value*, while the *F-values* of the entire *compliance-index* (the *Economic-SACGI*) model are statistically significant, those of the *equilibrium-variable* model are not significant in years 2002 to 2005 in the case of the ROA, and in year 2005 with respect to the Q-ratio. The standard errors and Durbin-Watson statistics, however, present mixed evidence. While the standard errors and Durbin-Watson statistics of the *compliance-index* (the *Economic-SACGI*) model are lower and higher, respectively, in the case of the Q-ratio, the opposite holds when the ROA is examined. Overall, and consistent with the suggestions of the individual variables' *p-values* and coefficients, the *compliance-index* (the *Economic-SACGI*) model appears to possess better empirical properties and explanatory power than the *equilibrium-variable* model.

Methodologically, this implies that despite its costly and labour intensive nature, on average, it seems to be value relevant to construct some measure of a 'compliance or composite' corporate governance index when examining the corporate governance-financial performance relationship rather than to use single corporate governance mechanisms in isolation. A major explanation (as have been discussed in chapters five and six) is that because the construction of a *compliance-index* (the *Economic-SACGI*) involves the use of several corporate governance variables, it appears to be better able to capture actual qualitative differences in corporate governance disclosures across firms. Arguably, this makes it more likely to achieve better cross-sectional variation in the quality of corporate governance among the sampled firms with higher explanatory power than using the *equilibrium-variable* model.

8.3 **CHAPTER SUMMARY**

This chapter has focused on presenting and discussing the empirical results regarding the link between internal corporate governance structures and firm financial performance. Specifically, the chapter attempted to achieve four main objectives. First, it attempted to examine whether better-governed firms based on the *equilibrium-variable* model will be

associated with higher financial performance, as measured by return on assets (ROA) and Tobin's Q (Q-ratio). Consistent with the prior evidence, the results based on the *equilibrium-variable* model indicate either a statistically weak or no relationship between the eleven single corporate governance structures and firm financial performance examined. Second, it sought to investigate whether better-governed firms based on the *compliance-index* model will be associated with higher financial performance. The results based on the *compliance-index* model suggest that there is a statistically significant and positive relationship between the *SACGI* and firm financial performance. This means that, on average, better-governed South African listed firms tend to be associated with higher financial returns, as measured by ROA and the Q-ratio than their poorly-governed counterparts.

Third, the chapter attempted to quantify the economic consequences of complying with the *Social-SACGI* for South African listed firms. Contrary to theoretical expectations, the results suggest that firms that comply better with the *Social-SACGI* tend to be associated with higher financial returns than firms that comply less with the *Social-SACGI*. Evidence of a positive relationship between the *Social-SACGI* and financial performance is, however, consistent with the conditions within the South African corporate context. Within the South African corporate context, compliance with *Social-SACGI* appears to be a major *way* by which firms may gain access to critical business resources to enhance growth and improve financial performance.

Finally, the chapter compared the empirical strengths of the two models based on their respective summary regression results and diagnostics. Whilst the results of the *compliance-index* (the *Economic-SACGI*) model indicate a statistically significant and positive link with consistent coefficients, those of the *equilibrium-variable* model are ambiguous. A further comparison of the summary regression diagnostics indicates that, on average, the *compliance-index* (the *Economic-SACGI*) model show better empirical properties, as well as explanatory power than those of the *equilibrium-variable* model. A major methodologically implication is that despite its expensive and labour intensive nature, on average, it appears to be valuable to construct some measure of a 'compliance or composite' corporate governance index when investigating the governance-financial performance relationship than to use single corporate governance mechanisms in isolation.

A crucial issue is that the results presented so far ignores the possible existence of endogeneity problems, and/or interdependences among possible alternative corporate governance mechanisms. The positive link between the *SACGI* and firm financial performance

that has been established, for example, could be spurious. Therefore, in the next chapter (chapter nine), the main aim is to offer an indication of the extent to which the obtained empirical results are robust or sensitive to alternative estimations and explanations. In this regard, the robustness or sensitivity of the results to the existence of potential problems of endogeneity, and alternative corporate governance mechanisms will be thoroughly explored. More specifically, the results will be subjected to an extensive set of sensitivity analyses, including estimating: a lagged corporate governance-financial performance structure; an instrumental variable model; a two-stage least squares (2SLS) model; and a changes model.

CHAPTER NINE

ROBUSTNESS OR SENSITIVITY ANALYSES

9. INTRODUCTION

This chapter discusses results based on a series of robustness or sensitivity analyses. The central objective is to demonstrate how the results reported in chapter eight are robust or sensitive to alternative explanations and estimations. More specifically, the chapter subjects the results presented in chapter eight to an extensive set of sensitivity analyses, including carrying out a lagged financial performance-corporate governance structure, an instrumental variable (IV) model, a two-stage least squares (2SLS) model, and a changes model estimations. The remainder of the chapter is organised as follows. Section 9.1 briefly outlines the procedure suggested by Larcker and Rusticus (2008) for positive accounting researchers to address endogeneity problems in positive accounting research. Section 9.2 reports results based on estimating a lagged financial performance-corporate governance structure. Section 9.3 discusses results based on estimating an instrumental variable (IV) model. Section 9.4 reports results based on estimating a two-stage least squares (2SLS) model. Section 9.5 examines the relationship between year-on-year changes in both the financial performance proxies and the *SACGI*, whereas section 9.6 summarises the chapter.

9.1 RESULTS AIMED AT ADDRESSING THE EXISTENCE OF POTENTIAL ENDOGENITY PROBLEMS

As has already been explained in chapters five and eight, the results reported so far ignore the existence of possible endogenity problems, as well as interdependences among possible alternative corporate governance structures. Therefore, the next four sections examine the extent to which the reported results are robust or sensitive to the existence of potential endogenities and interdependences among possible alternative corporate governance mechanisms. However, before presenting the results based on the robustness or sensitivity tests, the procedure for addressing potential endogeneity problems is first outlined below.

As has been described in section 5.3 of chapter five, and unlike most of the prior literature, in this study, problems that the potential presence of endogeneity poses are

explicitly addressed. Specifically, the five-step procedure proposed by Larcker and Rusticus (2008, pp.25-31, 59) for positive accounting researchers is followed.

Briefly, Larcker and Rusticus (2008, p.25) suggest that the first step in addressing any concerns of endogeneity is to use rigorous accounting theory and logic to specify the endogenous (dependent) and exogenous (independent) variables within the structural equations. In chapters four and five, the theoretical links between the dependent and independent variables were discussed. Additionally, Larcker and Rusticus (2008) indicate that the researcher needs to explicitly point out some of the reasons why endogeneity may potentially be a problem.

As has also been discussed in subsection 5.3.1 of chapter five, due to potential omitted variables, measurement errors, equilibrium conditions and simultaneity or reverse causation, endogeneity could potentially be a problem in this study. Moreover, and as evident in chapter four, the corporate governance phenomenon is very complex. As a result, the study has relied on multiple, and sometimes conflicting theoretical perspectives, which arguably also increases the possibility that endogeneity could be introduced into the specified structural equations.

According to Larcker and Rusticus (2008), the second step involves exploring the various alternative ways of solving the endogeneity problem. As has been described in subsection 5.3.1, problems that the potential existence of endogeneity poses are explicitly addressed in four main ways. As will be discussed further below, these include estimating: (1) a lagged financial performance-corporate governance structure; (2) an instrumental variable model; (3) a two-stage least squares model; and (4) a changes model. The third step as suggested by Larcker and Rusticus (2008) involves conducting exogeneity test on the key explanatory variable to ascertain whether it is actually endogenous or not. In this case, following prior corporate governance studies (Shabbir and Padget, 2005, p.22; Beiner *et al*., 2006, p.267), the popular *Durbin-Wu-Hausman* exogeneity test will be followed below.

The fourth step suggested by Larcker and Rusticus (2008) is to demonstrate that any instrument used as a proxy for the original variable is a relevant and valid instrument. As will be explained further below, the predicted instrument to be used as a proxy for the *SACGI* (i.e., *P-SACGI*) in carrying out the instrumental variable (IV) estimation is a relevant and valid instrument. The final step suggested by Larcker and Rusticus (2008) is to compare the magnitude, statistical significance and signs of the OLS and endogeneity corrected estimations to ascertain the extent to which they are robust or sensitive to the presence of endogeneity problems.

In the following four sections, results based on the four endogeneity analyses will be discussed and compared with those based on the OLS estimates that have already been reported in chapter eight. Specifically, section 9.2 will present results obtained by estimating a lagged financial performance-corporate governance structure. Section 9.3 discusses results based on instrumental variable (IV) estimates. Section 9.4 reports results based on a two-stage least squares (2SLS) model, whereas section 9.5 presents results based on estimating a changes model.

9.2 RESULTS BASED ON ESTIMATING A LAGGED FINANCIAL PERFORMANCE-CORPORATE GOVERNANCE STRUCTURE

This section discusses results based on estimating a lagged financial performance-corporate governance structure to deal with endogeneity problems that may arise as a result of a time-lag in the financial performance-corporate governance relationship. Specifically, subsection 9.2.1 reports results obtained by estimating a lagged financial performance-corporate governance structure based on the *equilibrium-variable* model, while subsection 9.2.2 presents results obtained by estimating a lagged financial performance-corporate governance structure based on the *compliance-index* model.

9.2.1 Results from Estimating a Lagged Financial Performance-Corporate Governance Structure based on the Equilibrium-Variable Model

Columns 7 to 10 of Table 21 contain the results obtained by estimating a lagged financial performance-corporate governance structure for the *equilibrium-variable* model as specified in equation 11 in chapter five and repeated below:

$$\begin{aligned} FP_{it} = {} & \alpha_0 + \beta_1 BSIZE_{it-1} + \beta_2 NEDs_{it-1} + \beta_3 DUAL_{it-1} + \beta_4 BDIV_{it-1} \\ & + \beta_5 FBMs_{it-1} + \beta_6 ACOM_{it-1} + \beta_7 NCOM_{it-1} + \beta_8 RCOM_{it-1} \\ & + \beta_9 DTON_{it-1} + \beta_{10} DTON_{it-1}^{2} \\ & + \beta_{11} DTON_{it-1}^{3} \sum_{i=1}^{n} \beta_i CONTROLS_{it-1} + \varepsilon_{it-1} \end{aligned} \tag{11}$$

where *FP* refers to the financial performance proxies, as measured by the ROA and Q-ratio, and *BSIZE, NEDS, DUAL, BDIV, FBMs, ACOM, NCOM, RCOM, DTON*, $DTON^2$ and $DTON^3$ is defined as board size, the percentage of non-executive directors, CEO duality, board diversity, the frequency of board meetings, audit, nomination, and remuneration committees,

director shareownership, director shareownership squared, and director shareownership cubed, respectively. CONTROLS refers to the eight control variables, namely firm size, dual-listing, audit firm size, capital structure, capital expenditure, sales growth, industry, and year dummies. Lagging the variables also reduces the total firm-year observations from 500 to 400.

To facilitate comparison, and as suggested by Larker and Rusticus (2008), Columns 3 to 6 of Table 21 repeat the results based on estimating an un-lagged corporate governance-financial performance structure reported in Columns 3 and 4 of Tables 14 and 16 in chapter eight, respectively. Similar to the results of based on estimating the un-lagged structure contained in Columns 3 to 6 of Table 21, Columns 7 and 8 of Table 21 first present the results of a multivariate regression of the ROA and Q-ratio on the 11 corporate governance structures alone.

Columns 9 and 10 then report the results of a multivariate regression of the ROA and Q-ratio on the 11 corporate governance mechanisms and the control variables based on estimating a lagged structure, respectively. In line with the results based on estimating the un-lagged structure, Columns 7 and 8 indicate that the *F*-values for both the ROA and Q-ratio are statistically significant at the 1% level. This suggests that the null hypothesis that the coefficient on the *SACGI* is equal to zero can be rejected. This also implies that the coefficients on the 11 corporate governance variables can jointly explain significant variations in the sampled firms' accounting returns and market value, respectively.

The adjusted R^2 is approximately 9% and 6% for the ROA and Q-ratio, respectively. This implies that at least 9% and 6% of the differences in the sampled firms' accounting returns and market value can be explained by the 11 corporate governance structures, respectively. This is very similar to the results reported in Columns 3 and 4 of Table 21 based on estimating the un-lagged structure, but statistically 2.5% higher in the case of ROA, and .1% less with respect to the Q-ratio, respectively.

With reference to the coefficients on the 11 corporate governance variables in columns 7 and 8 of Table 20 based on estimating the lagged structure, three main cases of sensitivities can be observed when compared with those in Columns 3 and 4 of Table 21 based on estimating an un-lagged structure. First, the sign on the coefficient of CEO duality under the Q-ratio in Column 8 has changed from positive to negative, but remains statistically insignificant. Second, the direction of the coefficient on the frequency of board meetings under the ROA in Column 7 has changed from negative to positive, but also remains statistically insignificant.

Table 21: Results of the Equilibrium-Variable Model Based on a Lagged Financial Performance-Corporate Governance Structure

		Results Based on an Un-lagged Performance-Governance Structure				Results Based on a Lagged Performance-Governance Structure			
Perform. Var.	Exp.sign	ROA	Q-ratio	ROA	Q-ratio	ROA	Q-ratio	ROA	Q-ratio
Adjusted R^2		.063	.062	.115	.290	.088	.062	.105	.271
Standard error		.116	.623	.114	.542	.116	.624	.115	.550
Durbin-Watson		.904	1.032	.925	.983	.973	1.185	1.020	1.123
F-value		3.522(.000)***	3.466(.000)***	3.125(.000)***	7.690(.000)***	3.815(.000)***	2.932(.001)***	2.562(.000)***	5.963(.000)***
No. of observa.		500	500	500	500	400	400	400	400
Constant		.048(.383)	1.322(.000)***	.046(.435)	.642(.024)**	-.016(.783)	1.438(.000)***	-.026(.697)	.674(.037)**
Board size	+	-.003(.138)	.020(.101)	-.002(.311)	.022(.064)*	-.005(.039)**	.011(.440)	-.005(.086)*	.011(.414)
CEO duality	-	.023(.159)	.002(.985)	.029(.037)**	-.117(.153)	.010(.598)	-.024(.810)	.018(.365)	-.142(.130)
Per. of NEDs	+	-.001(.016)**	.003(.278)	-.002(.032)**	.003(.255)	-.001(.025)**	.003(.204)	-.001(.041)**	.004(.157)
Dtor ownership	+	-.003(.044)**	-.011(.217)	-.003(.131)	-.018(.084)*	-.003(.088)*	-.010(.331)	-.004(.107)	-.020(.060)*
Dtor ownership^2	-/+	.000(.060)*	.000(.287)	.000(.104)	.000(.153)	.000(.118)	.000(.448)	.000(.124)	.001(.136)
Dtor ownership^3	-/+	-.000(.093)*	-.000(.264)	-.000(.108)	-.000(.192)	-.000(.160)	-.000(.446)	-.000(.111)	-.000(.108)
Board diversity	+	.036(.004)***	.179(.008)***	.021(.112)	-.025(.701)	.042(.003)***	.213(.005)***	.033(.035)**	.012(.874)
Board meetings	+	-.002(.418)	.021(.147)	-.003(.328)	.011(.424)	.002(.421)	.022(.177)	.002(.539)	.010(.476)
Audit comm..	+	.038(.680)	-.354(.473)	.050(.581)	.068(.876)	.117(.209)	-.552(.270)	.118(.211)	-.260(.565)
Nom. comm..	+	.021(.122)	.089(.220)	.021(.095)*	-.105(.141)	.015(.336)	.084(.305)	.011(.530)	-.127(.124)
Rem. comm.	+	.051(.539)	.229(.689)	.034(.641)	-.119(.765)	.029(.727)	.326(.470)	.023(.784)	-.334(.414)
Firm size	-/+	-	-	.001(.928)	-.183(.003)***	-	-	-.002(.899)	-.178(.015)**
Capital structure	-/+	-	-	.000(.021)**	-.003(.000)***	-	-	.000(.924)	-.003(.002)***
Sales growth	+	-	-	.001(.000)***	.002(.124)	-	-	.001(.001)***	.004(.007)***
Capital expendit.	+	-	-	-.002(.105)	.020(.005)***	-	-	-.003(.063)*	.015(.044)**
Dual-listing	+	-	-	.024(.138)	.086(.267)	-	-	.020(.286)	.094(.292)
Audit firm size	-/+	-	-	.010(.559)	.271(.001)***	-	-	.012(.546)	.256(.007)***
Basic materials		-	-	-.011(.611)	.428(.000)***	-	-	-.015(.535)	.346(.004)***
Consumer service		-	-	-.002(.925)	.551(.000)***	-	-	-.001(.968)	.553(.000)***
Industrials		-	-	-.014(.464)	.217(.002)***	-	-	-.014(.531)	.194(.073)*
Technology		-	-	.006(.772)	.308(.000)***	-	-	-.001(.967)	.291(.012)**
2002		-	-	-.014(.457)	-.022(.811)	-	-	-	-
2004		-	-	-.011(.550)	.183(.033)**	-	-	.002(.913)	.252(.008)***
2005		-	-	-.012(.495)	.398(.000)***	-	-	.018(.389)	.485(.000)***
2006		-	-	-.002(.928)	.581(.000)***	-	-	.022(.293)	.640(.000)***

Notes: coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison. Director ownership^2 and director ownership^3 refers to director ownership squared and director ownership cubed, respectively. To facilitate comparison, and as suggested Larker and Rusticus (2008), Columns 3 to 6 repeat the results based on an un-lagged performance-corporate governance structure reported in Columns of 3 and 4 of Tables 14 and 16 in chapter eight, respectively, whereas Columns 7 to 10 present alternative results based on a lagged performance-corporate governance structure. Note further that the un-lagged structure is based on 500 firm year observations, whilst the lagged structure is based on 400 firm year observations.

Finally, the statistical significance of the coefficients on board size, director ownership squared, and director ownership cubed under the ROA in Column 7 have changed. Specifically, the coefficients on director ownership squared and director ownership cubed, which were statistically significant at the 10% level, are no longer statistically significant. By contrast, the coefficient on board size, which was statistically insignificant, is now statistically significant at the 5% level. The statistical significance and direction of the coefficients of the remaining 7 and 10 corporate governance variables under the ROA and Q-ratio, respectively, remain unchanged whether a lagged or un-lagged financial performance-corporate governance structure is estimated. This suggests that the majority of the results based on the un-lagged structure reported in chapter eight are not sensitive to a lagged financial performance-corporate governance structure.

The statistically significant coefficient on the constant term in columns 4 and 8 (under the Q-ratio) of Table 21 seems to suggest that there may be omitted variables bias. Therefore, to examine whether the limited sensitivities identified in the results of the lagged structure are spuriously caused by some omitted variables, the control variables are added to the regressions in columns 9 and 10 of Table 21. In line with the results reported in chapter eight, Columns 9 and 10 indicate that the *F*-values for both the ROA and Q-ratio remain statistically significant at the 1% level. Therefore, the null hypothesis that the coefficients on the 11 corporate governance mechanisms and the control variables are jointly equal to zero can be rejected. This also suggests that the 11 corporate governance structures and the control variables can jointly explain significant differences in the sampled firms' accounting returns and market value, respectively.

The adjusted R^2 is approximately 11% and 27% for the ROA and Q-ratio, respectively. This means that at least 11% and 27% of the differences in the sampled firms' accounting returns and market value can jointly be explained by the 11 corporate governance mechanisms and the control variables, respectively. This is also very similar to the results reported in Columns 3 and 4 of Table 21 based on estimating an un-lagged structure, but statistically 1.5% less in the case of ROA, and 1.9% less with respect to the Q-ratio, respectively. The slight reductions in explanatory power may also be explained by the 20% decrease in the number of firm-year observations (i.e., from 500 to 400).

Similar to the results based on estimating the un-lagged structure, the adjusted R^2 of the regressions of the ROA and Q-ratio on the 11 corporate governance mechanisms alone are essentially the same. However, once the control variables are added, the adjusted R^2 for the Q-

ratio becomes substantially higher than that of the ROA. This also implies that the difference in explanatory power between the ROA and Q-ratio can be attributed to the contribution of the control variables.

With regard to the coefficient on the 11 corporate governance variables based on an un-lagged structure under both the ROA and Q-ratio in Columns 9 and 10 of Table 21, a limited number of sensitivities can be identified. First, the sign of the coefficient on the frequency of board meetings in Column 9 under the ROA, which was negative is now positive, but remain statistically insignificant. Second, the statistical significance of the coefficients on board size, CEO duality, board diversity, and the existence of a nomination committee under the ROA in Column 9 have changed. Specifically, the coefficients on board size and board diversity, which were not statistically significant in Column 5, are now statistically significant in column 9. In contrast, the coefficient on CEO duality and the existence of a nomination committee which, were statistically significant in Column 5, are no longer statistically significant in column 9.

Third, the sign on the coefficients on board diversity and the presence of an audit committee under the Q-ratio in Column 10 have changed, but they remain statistically insignificant. Finally, board size, which was statistically significant under the Q-ratio in Column 6, is no longer statistically significant under the Q-ratio in Column 10. The direction and statistical significance of the coefficients on the remaining 6 and 8 corporate governance structures under the ROA and Q-ratio, respectively, remain unaffected whether a lagged or an un-lagged financial performance-corporate governance structure is estimated. Generally, the results suggest that the evidence regarding the sensitivity or robustness of the 11 corporate governance variables to a lagged financial performance-corporate governance structure is mixed. Specifically, whereas the coefficient on a majority of the 11 corporate governance mechanisms are robust to the estimation of a lagged structure, the coefficients on a limited number (i.e., board size, CEO duality, board diversity and frequency of board meetings) are sensitive to the estimation of a lagged structure with or without the control variables.

First, the observed sensitivities in some of the corporate governance mechanisms, such as board size and CEO duality may indeed suggest that there is a time-lag between them and firm financial performance. Second, the sensitivities may be due to misspecifications within the structural equation, such as potential omitted variables bias. Third, and as has already been pointed out above, it may also be explained by the differences in the number of firm-year observations. Overall and on a comparative basis, it offers additional empirical support to the

previous conclusion in chapter eight that the results of the *equilibrium-variable* model are generally conflicting.

With reference to the control variables, two main cases of sensitivities in the control variables to the estimation of a lagged structure can be identified. First, the positive sign on the coefficient on firm size in Column 5 under the ROA has now changed to negative in Column 9 of Table 21, but remain statistically insignificant. Second, the statistical significance of the coefficients on capital structure and capital expenditure under the ROA in Column 9, and sales growth under the Q-ratio in Column 10 have changed.

Specifically, the coefficients on capital expenditure under the ROA in Column 5 and sales growth under the Q-ratio in Column 6, which were statistically insignificant, are now statistically significant under the ROA and Q-ratio in Columns 9 and 10 of Table 21, respectively. By contrast, the coefficient on capital structure under the ROA in Column 5, which was statistically significant at the 5% level, is now statistically insignificant in Column 9 of Table 21. These sensitivities may indicate the existence a lagged structure relationships between capital expenditure and the ROA, between capital structure and the ROA, and between sales growth and the Q-ratio. The coefficient and statistical significance of the remaining control variables, including audit firm size, dual-listing, the year and industry dummies remain affected whether a lagged or an un-lagged structure is estimated.

In conclusion, this subsection has sought to ascertain the extent to which the results of the *equilibrium-variable* model based an un-lagged financial performance-corporate governance structure discussed in chapter eight are robust or sensitive to the estimation of a lagged financial performance-corporate governance structure. Generally, and consistent with results of the *equilibrium-variable* model reported in chapter eight, the evidence regarding the sensitivity or robustness of the results to a lagged or an un-lagged financial performance-corporate governance structure is mixed. While the direction and the statistical significance of the coefficients on a majority of the 11 corporate governance mechanisms examined remain unchanged whether a lagged or an un-lagged structure is estimated, a limited number (i.e., board size, CEO duality, board diversity and the frequency of board meetings) show some level of sensitivity.

As has been explained above, these sensitivities may suggest that there is indeed a financial performance-corporate governance time-lag for the sensitive corporate governance mechanisms, such as board size and CEO duality. It may also be explained by the differences in the number of observations between the lagged and un-lagged structures. Overall, these

findings offer further support to the earlier conclusions in chapter eight that there is either a statistically weak or insignificant relationship between most of the eleven individual internal corporate governance structures and financial performance.

The next subsection will also examine the extent to which the results of the *compliance-index* model based on estimating an un-lagged financial performance-corporate governance structure are robust or sensitive to an estimation of a lagged structure.

9.2.2 **Results from Estimating a Lagged Financial Performance-Corporate Governance Structure based on the Compliance-Index Model**

Columns 7 to 10 of Table 22 contain the results obtained by estimating a lagged financial performance-corporate governance structure for the *compliance-index* model. To facilitate comparison, and as suggested by Larker and Rusticus (2008), Columns 3 to 6 of Table 22 repeat results based on an un-lagged corporate governance-financial performance structure reported in Columns 3 and 4 of Tables 17 and 18 in chapter eight, respectively. Unlike the un-lagged structure equations, the lagged structure models are estimated as specified in equation 10 of chapter five and repeated below:

$$FP_{it} = \alpha_0 + \beta_1 SACGI_{it-1} + \sum_{i=1}^{n} \beta_i CONTROLS_{it-1} + \varepsilon_{it-1} \qquad (10)$$

where *FP* refers to the financial performance proxies, as measured by ROA and the Q-ratio, SACGI is the South African Corporate Governance Index, and CONTROLS refers to the eight control variables, namely firm size, dual-listing, audit firm size, capital structure, capital expenditure, sales growth, industry, and year dummies. Lagging the variables also reduces the total firm-year observations from 500 to 400.

The decision to estimate a lagged structure is motivated by the theory and evidence that there is a time-lag in the corporate governance-financial performance association (e.g., Vefeas, 1999a; Haniffa and Hudaib, 2006). One reason is that board decisions may have gestation periods within which they may be fully realised. As such, estimating a lagged structure is one way by which potential endogenity problems, such as reverse causality that may be associated with the corporate governance-financial performance time lag may be avoided.

Table 22: Results of the Compliance-Index Model Based on a Lagged Financial Performance-Corporate Governance Structure

		Results Based on an Un-lagged Performance-Governance Structure				Results Based on a Lagged Performance-Governance Structure			
Performance Variable	Exp. sign	ROA	Q-ratio	ROA	Q-ratio	ROA	Q-ratio	ROA	Q-ratio
Adjusted R^2		.102	.100	.189	.292	.095	.084	.142	.268
Standard error		.117	.617	.111	.548	.118	.633	.115	.566
Durbin-Watson		.869	1.018	.881	1.039	.904	1.056	.999	1.012
F-value		57.706(.000)***	56.633(.000)***	8.751(.000)***	14.729(.000)***	42.676(.000)***	37.583(.000)***	5.731(.000)***	11.442(.000)***
No. of observations		500	500	500	500	400	400	400	400
Constant		-.021(.166)	.926(.000)***	.005(.808)	.720(.000)***	-.011(.510)	1.041(.000)***	.010(.666)	.799(.000)***
SACGI	+	.002(.000)***	.009(.000)***	.002(.000)***	.004(.008)***	.002(.000)***	.009(.000)***	.002(.000)***	.003(.045)**
Firm size	+	-	-	.013(.165)	-.172(.000)***			.016(.152)	-.166(.003)***
Capital structure	-/+	-	-	.000(.004)***	-.003(.000)***			-.000(.843)	-.003(.002)***
Sales growth	+	-	-	.002(.000)***	.001(.373)			.001(.000)***	.008(.010)***
Capital expenditure	+	-	-	-.001(.563)	.020(.001)***			-.002(.267)	.010(.185)
Dual-listing	+	-	-	.012(.397)	.192(.006)***			.012(.474)	.226(.006)***
Audit firm size	-/+	-	-	-.015(.270)	.158(.016)**			-.015(.346)	.157(.041)**
Basic materials		-	-	-.034(.043)**	.237(.004)***			-.039(.042)**	.248(.009)***
Consumer services		-	-	-.021(.183)	.416(.000)***			-.012(.504)	.464(.000)***
Industrials		-	-	-.025(.121)	.099(.209)			-.021(.251)	.143(.115)
Technology		-	-	.004(.790)	.215(.006)***			.016(.395)	.208(.022)**
2002		-	-	.000(.998)	.053(.501)			-	-
2004		-	-	-.019(.224)	.178(.024)**			-.027(.112)	.185(.025)**
2005		-	-	-.017(.305)	.397(.000)***			-.011(.538)	.439(.000)***
2006		-		-.006(.698)	.565(.000)***			-.005(.778)	.577(.000)***

Notes: coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison. To facilitate comparison, and as suggested by Larcker and Rusticus (2008), Columns 3 to 6 repeat the results based on estimating an un-lagged financial performance-corporate governance structure reported in Columns 3 and 4 of Tables 17 and 18 in chapter eight, respectively, whereas Columns 7 to 10 contain alternative results based on estimating a lagged financial performance-corporate governance structure. Note further that the un-lagged structure is based on 500 firm year observations, whilst the lagged structure is based on 400 firm year observations.

Similar to the results based on estimating the un-lagged structure presented in Columns 3 to 6 of Table 22, Columns 7 and 8 of Table 22 first report the results of a simple regression of the ROA and Q-ratio on the *SACGI* alone, respectively. Columns 9 and 10 then report the results of a multivariate regression of the ROA and Q-ratio on the *SACGI* and the control variables based on estimating the lagged structure, respectively. Consistent with the results based on estimating the un-lagged structure, Columns 7 and 8 of Table 22 indicate that the *F*-values for both the ROA and Q-ratio are statistically significant at the 1% level. This means that the null hypothesis that the coefficient on the *SACGI* is equal to zero can be rejected. This also indicates that the coefficient on the *SACGI* can explain significant variations in the sampled firms' accounting returns and market value, respectively.

The adjusted R^2 is approximately 10% and 8% for the ROA and Q-ratio, respectively. This implies that at least 10% and 8% of the differences in the sampled firms' accounting returns and market value can be explained by the quality of their internal corporate governance structures, respectively. This is virtually similar to the results reported in Columns 3 and 4 of Table 22 based on estimating the un-lagged structure, but statistically .7% and 1.6% less for the ROA and Q-ratio, respectively. Similarly, the coefficient on the *SACGI* under both the ROA and Q-ratio remain positive and statistically significant at the 1% level. The magnitude of the coefficient under both the ROA and Q-ratio remain the same at .002 and .009, respectively. This means that generally the results reported in chapter seven are not sensitive to estimating a lagged financial performance-corporate governance structure.

The statistically significant coefficient on the constant term in columns 4 and 8 (under the Q-ratio) of Table 22 appears to indicate that there may be an omitted variables bias. As a result, to investigate whether the lack of sensitivity of the results to estimating a lagged structure is falsely caused by some omitted variables, the control variables are added to the regressions in columns 9 and 10 of Table 22. In line with the results based on estimating the un-lagged structure, Columns 9 and 10 indicate that the *F*-values for both the ROA and Q-ratio are statistically significant at the 1% level. Therefore, the null hypothesis that the coefficients on the *SACGI* and the control variables are jointly equal to zero can be rejected. This suggests that the *SACGI* and the control variables can jointly explain significant differences in the sampled firms' accounting returns and market value, respectively.

The adjusted R^2 is approximately 14% and 27% for the ROA and Q-ratio, respectively. This means that at least 14% and 27% of the differences in the sampled firms' accounting returns and market value can be explained by the *SACGI* and the control variables,

respectively. Statistically, this is 4.7% and 2.4% less compared with the adjusted R^2 for the ROA and Q-ratio in Columns 5 and 6 of Table 22 based on estimating the un-lagged structure, respectively. The reductions in explanatory power may be explained by the 20% decrease in the number of firm-year observations (i.e., from 500 to 400). Consistent with the results of the un-lagged structure, when a simple regression is run, the ability of the *SACGI* to explain variations in the ROA and Q-ratio are essentially the same. However, once the control variables are added, the explanatory power of the *SACGI* under the Q-ratio becomes substantially higher than that of the ROA. This implies that the difference in explanatory power between the ROA and Q-ratio can be attributed to the contribution of the control variables.

Similarly, the coefficient on the *SACGI* under both the ROA and Q-ratio remain positive, but whereas the coefficient on the *SACGI* under the ROA remains statistically significant at the 1% level, that of the Q-ratio is now statistically significant at the 5% level. Also, while the magnitude of the coefficient on the *SACGI* under the ROA remains unchanged at .002, that of the Q-ratio has witnessed a slight derease from .004 to .003. Also, the slight reductions in the level of statistical significance of the coefficient under the Q-ratio may be explained by the 20% decrease in the number of firm-year observations (i.e., from 500 to 400).

Generally, the results based on estimating the lagged financial performance-corporate governance structure are essentially the same as those based on estimating the un-lagged structure with or without the control variables. This supports the previous conclusion in chapter eight that South African listed firms with higher corporate governance standards tend to be associated with higher financial performance than their counterparts with poor corporate governance standards. As will be discussed further in section 9.5, one reason for the limited change in the results based on estimating the lagged and un-lagged financial performance-corporate governance structures may be that the year-by-year changes in the *SACGI* observed in chapter six are not substantial enough to cause any statistically significant changes in the firm financial performance proxies.

With reference to the control variables, the statistical significance, the direction and magnitude of the coefficients on firm size, capital expenditure, dual-listing, audit firm size, the industry and the year dummies under both the ROA and Q-ratio remain essentially unchanged. By contrast, the statistical significance and the direction of the coefficient on capital structure under the ROA, and the statistical significance of the coefficient on sales growth under the Q-ratio have changed. Specifically, the coefficient on capital structure under the ROA which was

positive and statistically significant at the 1% level is now negative and statistically insignificant. Similarly, the coefficient on sales growth under the Q-ratio, which was statistically insignificant, is now statistically significant at the 1% level. These sensitivities may suggest that a lagged structure relationship exists between capital structure and ROA, and between sales growth and the Q-ratio.

In short, this subsection has sought to ascertain the extent to which the results of the *compliance-index* model based on estimating an un-lagged financial performance-corporate governance structure discussed in chapter eight are robust or sensitive to estimating a lagged structure. Generally, apart from a limited number of changes in the magnitude and statistical significance levels that are observed and described above, the general evidence is that the *compliance-index* model results reported in chapter eight are essentially robust whether a lagged or an un-lagged financial performance-corporate governance structure is estimated.

Overall, the results support the earlier conclusion in chapter eight that there is a statistically significant and positive relationship between the *SACGI* and firm financial performance. The general tenor of such a relationship remains the same whether an accounting or a market based financial performance proxy is used. As has already been explained above, one reason for the limited change in the results based on estimating the lagged and un-lagged financial performance-corporate governance structures may be that the year-on-year changes in the *SACGI* observed in chapter six are not substantial enough to cause any statistically significant changes in the firm financial performance measures. On comparative basis, however, the results of the *compliance-index* model are generally more stable, and show better empirical properties than those of the *equilibrium-variable* model.

The next section will discuss the results of the *compliance-index* model based on estimating an instrumental variable model.

9.3 **RESULTS OF THE COMPLIANCE-INDEX MODEL BASED ON INSTRUMENTAL VARIABLE (IV) ESTIMATION**

This section reports the results of the *compliance-index* model based on instrumental variable (IV) estimates rather than OLS estimates. As has already been stated above, to be able to conduct *IV* estimation, exogeneity test will have to be first conducted to determine whether or not the *SACGI* is actually endogenous. In this regard, following prior corporate governance studies (Shabbir and Padget, 2005, p.22; Beiner *et al*., 2006, p.267), the popular *Durbin-Wu-Hausman* exogeneity test is followed. The procedure involves two stages.

As specified in equation 13 below, in the first stage, the *SACGI* is assumed to be endogenous in equation 1, and is regressed on the eight control variables considered to be exogenous to the *SACGI*. These are: firm size (LNTA), capital structure (GEAR), sales growth (SGROWTH), capital expenditure (CAPEX), dual-listing (DUALLIST), audit firm size (BIG4), the five industry dummies (INDUST), and the five year dummies (YD). The resulting regression residuals from equation 13 are saved and referred to as *R-SACGI*.

$$SACGI_{it} = \alpha_0 + \beta_1 LNTA_{it} + \beta_2 GEAR_{it} + \beta_3 SGROWTH_{it} + \beta_4 CAPEX_{it} + \beta_5 DUALIST_{it} + \sum_{i=1}^{n} \beta_i INDUST_{it} + \sum_{i=1}^{n} \beta_i YD + \varepsilon_{it} \quad (13)$$

In the second stage, and as specified in equation 14 below, the financial performance proxies (FP - ROA and Q-ratio) are regressed on the *SACGI*, the saved regression residuals (*R-SACGI*), and the control variables (CONTROLS). If the coefficient on the saved regression residuals (*R-SACGI*) is statistically significant, then it can be concluded that the *SACGI* is endogenously related to firm financial performance.

$$FP_{it} = \alpha_0 + \beta_1 SACGI_{it} + \beta_2 R\_SACGI_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (14)$$

In contrast, if the coefficient on the *R-SACGI* is statistically insignificant, then it will indicate that the *SACGI* is exogenously related to firm financial performance. As has been described in subsection 5.3.1 of chapter five, this will imply that OLS estimates of the regression coefficients will be biased and inconsistent. This can result in wrong interpretations of the research findings (Larcker and Rusticus, 2008, p.10). However, and as has also been noted in subsection 5.3.1 of chapter five, there are substantial disagreements within the positive accounting literature as to whether endogeneity is a problem that needs to be considered in accounting research (Chenhall and Moers, 2007a and b; Larcker and Rusticus, 2007; van Lent, 2007). Specifically, van Lent (2007, pp.197-198, 203) suggests that in practice there is little that can be done about endogeneity even if it exists, and as such researchers should be bold enough to ignore any threats that the existence of endogeneity may pose.

Columns 3 and 4 of Table 23 report the results of *Durbin-Wu-Hausman* exogeneity test. The results of the test are mixed: the coefficient on the *R-SACGI* under the ROA is statistically insignificant, whereas the coefficient under the Q-ratio is statistically significant at the 5%

level. This suggests that the *SACGI* is exogenously (i.e., not determined within the equation) related to the ROA, but endogenously (i.e., determined within the equation) related to the Q-ratio. To be more cautious, and also following previous corporate governance studies (e.g., Shabbir and Padget, 2005; Beiner *et al.*, 2006), however, the *IV* estimation is conducted for both the ROA and Q-ratio.

As has been discussed in subsection 5.3.1 of chapter five, the *IV* estimation technique involves two stages. The first stage involves finding a proxy variable (*an instrument*) for the *SACGI*, which correlates highly with the *SACGI* (i.e., *relevant*), but correlates lowly or uncorrelated with the regression residuals (i.e., *valid*). Finding an instrument that satisfies the *relevance* and *validity* criteria is extremely difficult (Durnev and Kim, 2005, p.1483). As a result, and as has been explained in subsection 5.3.1 of chapter five, this study follows a two-stage procedure proposed by Beiner *et al*. (2006, p.267).

$$SACGI_{it} = \alpha_0 + \beta_1 BSIZE_{it} + \beta_2 INSTSHDNG_{it} + \beta_3 BLKSHDNG_{it} + \beta_4 CGCOM_{it} + \beta_5 BIG4_{it} + \sum_{i=1}^{n} \beta_i CONTROLS_{it} + \varepsilon_{it} \quad (15)$$

In the first stage, and as specified in equation 15, the *SACGI* is regressed on board size (BSIZE), institutional shareholding (INSTSHDNG), block shareholding (BLKSHDNG), the presence of a corporate governance committee (CGCOM)[86], and the eight control variables (CONTROLS) considered to be exogenously related to the *SACGI*. These are: firm size (LNTA), capital structure (GEAR), sales growth (SGROWTH), capital expenditure (CAPEX), dual-listing (DUALLIST), audit firm size (BIG4), the five industry dummies (INDUST), and the five year dummies (YD). In the second stage, the predicted regression values from equation 15 are saved (*P-SACGI*). The *SACGI* is then replaced with the *P-SACGI* (i.e., the predicted instrument) to re-estimate the *compliance-index* model.

However, before the *P-SACGI* can be used to re-estimate the *compliance-index* model, it has to be ascertained whether it is a *relevant* and *valid* instrument for the *SACGI*. Table 24 reports a correlation matrix of the financial performance proxies, the *SACGI*, the *P*-SACGI, the *R-SACGI*, and the alternative corporate governance mechanisms[87].

[86]As has been defined in subsection 5.3.1.2 of chapter five, this committee is a dummy variable that takes the value of 1 if a firm has separate committee specifically tasked to monitor its compliance with corporate governance standards or regulations, 0 otherwise.

[87]Section 9.4 will discuss the results based on estimating a two-stage least squares model and the availability of alternative corporate governance mechanisms. Table 24 will, therefore, be referred to again in section 9.4.

Table 23: Results of the Compliance-Index Model Based on Instrumental Variable (IV) Estimates

	Exp. Sign	Durbin-Wu-Hausman Test		Instrumental Variable Estimates		OLS Estimates	
Adjusted R^2		.184	.312	.168	.318	.189	.292
Standard error		.118	.531	.116	.543	.111	.548
Durbin-Watson		.880	1.085	.856	1.068	.881	1.039
F-value		7.986(.000)***	15.346(.000)***	7.964(.000)***	16.341(.000)***	8.751(.000)***	14.729(.000)***
No. of observations		500	500	500	500	500	500
Performance Measure		ROA	Q-ratio	ROA	Q-ratio	ROA	Q-ratio
Constant		.012(.540)	.368(.034)**	-.012(.764)	.542(.000)***	.008(.808)	.720(.000)***
SACGI	+	.002(.028)**	.010(.006)***	-	-	.002(.000)***	.004(.008)**
R-SACGI	-/+	.003(.486)	-.006(.045)**	-	-	-	-
P-SACGI	+	-	-	.002(.000)***	.008(.005)***	-	-
Firm size	-/+	.046(.298)	-.248(.010)***	-.010(.362)	-.263(.000)***	.013(.165)	-.172(.000)***
Capital structure	-/+	.000(.009)***	-.005(.000)***	.000(.010)***	-.003(.006)***	.000(.004)***	-.003(.000)***
Sales growth	+	.001(.010)***	.001(.486)	.002(.000)***	.002(.258)	.002(.000)***	.001(.373)
Capital expenditure	+	-.000(.741)	.014(.009)***	-.001(.498)	.017(.008)***	-.001(.563)	.020(.001)***
Dual-listing	+	.029(.284)	.049(.754)	.011(.496)	.118(.162)	.012(.397)	.192(.006)***
Audit firm size	-/+	-.020(.246)	.245(.006)***	-.019(.325)	.131(.046)**	-.015(.270)	.158(.016)**
Basic materials		-.081(.048)**	.382(.000)***	-.028(.068)*	.265(.002)***	-.034(.043)**	.237(.004)***
Consumer services		-.019(.423)	.425(.000)***	-.027(.148)	.586(.000)***	-.021(.183)	.416(.000)***
Industrials		-.038(.116)	.094(.428)	-.018(.169)	.048(.429)	-.025(.121)	.099(.209)
Technology		.027(.469)	.145(.034)**	.023(.562)	.094(.345)	.004(.790)	.215(.006)**
Year 2002		-.021(.675)	.142(.108)	-.002(.798)	.148(.025)**	.000(.998)	.053(.501)
Year 2004		-.065(.128)	.116(.159)	-.034(.156)	.136(.084)*	-.019(.224)	.178(.024)**
Year 2005		-.010(.743)	.436(.000)***	-.022(.218)	.524(.000)***	-.017(.305)	.397(.000)***
Year 2006		-.003(.876)	.584(.000)***	-.014(.431)	.672(.000)***	-.006(.698)	.565(.000)***

Notes: coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison. Columns 3 and 4 contain results of the *Durbin-Wu-Hausman* Test. As has already been explained in subsection 5.3.1.1 of chapter five, the *R-SACGI* is the saved residuals of a regression of the *SACGI* on the eight control variables. This has also been specified in *equation 13*. The *P-SACGI* is the predicted instrument to be used as a proxy for the *SACGI*. As has also been described in subsection 5.3.1.2 of chapter five, the *P-SACGI* is the saved predicted values of a regression of the *SACGI* on variables exogenous to the *SACGI*, including board size, the presence of corporate governance committee, block shareholding, institutional shareholding, as well as the eight control variables. This has also been specified *in equation 15*. Columns 5 and 6 report coefficient estimates based on the predicted instrument (the *P-SACGI*). To facilitate comparison, and as suggested Larcker and Rusticus (2008), Columns 7 and 8 repeat OLS estimates contained in Column 4 of Tables 17 and 18 in chapter eight, respectively.

Table 24: Correlation Matrix of Performance and Alternative Corporate Governance Mechanisms for All (500) Firm Years

	ROA	Q-ratio	SACGI	P-SACGI	R-SACGI	DUA-LIST	LEV	BSIZE	BIG4	GEAR	INST-SHDNG	BLK-SHDNG	CGCOM	LNTA
ROA		.391***	.276***	.235***	.181***	.133***	-.108**	-.060*	.130***	-.126***	.158***	-.027*	.111***	.027*
Q-ratio	.283***		.372***	.384***	.168***	.258***	-.121***	.145***	.196***	.081*	.225***	-.092**	.197***	-.123***
SACGI	.322***	.320***		.868***	.539***	.483***	.116***	-.042*	.480***	.019*	.347***	-.285***	.547***	.032*
P-SACGI	.276***	.326***	.864***		.132***	.551***	.116***	.005	.544***	.021*	.410***	-.342***	.630***	.309***
R-SACGI	.155***	.138***	.556***	.108**		.016*	.048*	.019*	.241***	.006	.114**	-.132***	.136***	-.578***
DUA-LIST	.144***	.236***	.471***	.543***	.001		.130***	-.110***	.331***	.037*	.322***	-.139***	.480***	.006
LEV	-.087*	-.151***	.066*	.075*	.006	.109**		-.042*	.051*	-.049*	.011*	.041*	.144***	-.002
BSIZE	-.040*	.131***	.000	.094**	.003	-.000	-.032*		.024*	.144***	.104**	.171***	-.067*	-.428***
BIG4	.131***	.181***	.477***	.544***	.209***	.331***	.079*	.039*		.057*	.097**	-.165***	.260***	.093**
GEAR	-.096**	.046*	.000	.008	.026*	.000	.000	.090**	.043*		.003	-.016*	-.104**	-.101**
INST-SHDNG	.116***	.162***	.314***	.364***	.104**	.270***	.037*	.154***	.073*	.009		.237***	.264***	-.008
BLK-SHDNG	-.052*	-.073*	-.287***	-.331***	-.125***	-.133***	.066*	.176***	-.160***	-.061*	.299***		-.112***	-.149***
CGCOM	.145***	.148***	.537***	.624***	.148***	.480***	.124***	-.020*	.260***	-.078*	.241***	-.098**		.093**
LNTA	.051*	-.127***	.000	.294***	-.639***	.000	-.005	-.446**	.097**	-.084*	-.013*	-.138***	.088**	

Notes: the bottom left half of the table contains Pearson's parametric correlation coefficients, whilst the upper right half of the table reports Spearman's non-parametric correlation coefficients. ***, ** and * denote correlation is significant at the 1%, 5% and 10% level, respectively. Variables are defined as follows: return on assets (ROA), Tobin's Q (Q-ratio), the South African Corporate Governance Index (the *SACGI*), *Predicted-SACGI* (*P-SACGI*), *Residual-SACGI* (*R-SACGI*), *dual-listing (*DUALIST*)*, leverage (LEV), board size (BSIZE), audit firm size (BIG4), capital structure/gearing (GEAR), institutional shareholding (INSTSHDNG), block shareholding (BLKSHDNG), corporate governance committee (CGCOM), and firm size (LNTA).

As the skewness and kurtosis statistics contained in Table 12 of chapter seven suggests that the variables show some level of non-normal behaviour, Table 24 reports both the Pearson parametric and the Spearman non-parametric correlation coefficients. Similar to Table 13 of chapter seven, the bottom left half of the table reports Pearson parametric correlation coefficients, whereas the upper right half of the table presents Spearman's non-parametric alternative.

The results show that the *P-SACGI* (predicted instrument) is highly significant and positively correlated with the *SACGI* (.864 and .868 for the Pearson and Spearman correlation coefficients, respectively). By contrast, and unlike the *SACGI*, which is highly correlated with the *R-SACGI* (regression residuals) (.556 and .539 for the Pearson and Spearman correlation coefficients, respectively), the *P-SACGI* is lowly correlated with the *R-SACGI* (.108 and .132 for the Pearson and Spearman correlation coefficients, respectively). This suggests that *P-SACGI* is to a greater extent a relevant and valid instrument for the *SACGI*. It also means that replacing the *SACGI* with the *P-SACGI* in the *compliance-index* model should results in an unbiased and consistent coefficient estimate, particularly for the coefficient on the *P-SACGI* under the Q-ratio.

Columns 5 and 6 of Table 23 contain the results of the *compliance-index* model based on the instrumental variable (the *P-SACGI*). To facilitate comparison, and as suggested by Larcker and Rusticus (2008), Columns 7 and 8 repeat the OLS results of the *compliance-index* model contained in Column 4 of Tables 17 and 18 of chapter eight, respectively. Columns 5 and 6 of Table 23 indicate that the *F-values* for both the ROA and Q-ratio remain statistically significant at the 1% level. Therefore, the null hypothesis that the coefficients on the *P-SACGI* and control variables are jointly equal to zero can be rejected. It implies that the *P-SACGI* and the control variables can jointly explain significant variations in the ROA and Q-ratio, respectively.

The adjusted R^2 of approximately 17% for the ROA based on the instrumental variable estimates in Column 5 is statistically 2 percentage point lower than the 19% based on the OLS estimates in Column 7. The adjusted R^2 for the Q-ratio based on the instrumental variable estimates in Column 6 is also similar to that of the OLS estimates in Column 8, but statistically 2.6% higher. This means that the coefficient on the *P-SACGI* and the control variables can explain approximately 17% and 32% of the variations in the sampled firms' accounting returns and market value, respectively.

Similarly, the coefficients on the *P-SACGI* under both the ROA and Q-ratio in Columns 5 and 6, respectively, remain positive and statistically significant at the 1% level. Consistent with the suggestions of the *Durbin-Wu-Hausman* exogeneity test that the *SACGI* is actually exogenously related to the ROA, the coefficient on the *P-SACGI* under the ROA in Column 5 remains unchanged at .002 when compared with the OLS estimate in Column 7. By contrast, the coefficient on the *P-SACGI* under the Q-ratio in Column 6 has increased by approximately 50% from .004 in Column 8 to .008 in Column 6. This is consistent with the suggestions of the *Durbin-Wu-Hausman* test that the *SACGI* is actually endogenously related to the Q-ratio.

The increase in the coefficient on the *P-SACGI* under the Q-ratio is expected. This is because, and as will be clarified further in section 9.4, past studies suggest that instrumental variables tend to over-predict (e.g., Beiner *et al*., 2006; Henry, 2008). For example, the coefficient on the Henry (2008)'s internal corporate governance score for a sample of 116 Australian listed firms increased from an OLS estimate of .056 to .074 under the instrumental variable estimate. Generally, the results based on the instrumental variable estimates indicate that the statistically significant and positive financial performance-corporate governance relationship reported in chapter eight is robust whether the instrumented part (the *P-SACGI*) or the un-instrumented part of the *SACGI* (the *SACGI*) is used. Overall, the results support the earlier conclusion in chapter eight that South African listed firms with better corporate governance standards tend to be associated with higher financial performance than their counterparts with poor corporate governance standards.

With respect to the control variables, three cases of sensitivities can be identified. First, the coefficient on firm size, which was positive under the ROA in Column 7 of Table 23 is now negative, but remains statistically insignificant in Column 5 of Table 23. Second, the coefficient on dual-listing under the Q-ratio in Column 8, which was statistically significant at the 1% level, is no longer statistically significant in Column 6. Third, the coefficient on the year 2002 dummy under the Q-ratio in Column 8 of Table 23, which was statistically insignificant, is now statistically significant at the 5% level in Column 6. Apart from these sensitivities, the coefficients and statistical significance of the estimates based on the instrumental variables in Column 5 and 6 of Table 23 are generally essentially similar to the OLS estimates in Column 7 and 8 of Table 23.

In summary, this section has examined the extent to which the results of the *compliance-index* model reported in chapter eight are sensitive or robust to the existence of an

endogenous relationship between the financial performance proxies and the *SACGI*. The results of the *Durbin-Wu-Hausman* test aimed at determining whether the *SACGI* is endogenously related to the proxies are mixed. Specifically, it suggests that the *SACGI* is exogenously related to the ROA, but endogenously related to the Q-ratio. To be more cautious, and also following prior corporate governance studies, however, instrumental variable (IV) estimates are conducted for both the ROA and Q-ratio.

The results based on the instrumental variable estimates suggest that there is a statistically significant and positive relationship between firm financial performance and corporate governance. The tenor of such a positive relationship remains unchanged whether an accounting or a market based measure of performance is used. Generally, the findings are consistent with the results of the *compliance-index* model based on the OLS estimates presented in chapter eight. Overall, the results support the earlier conclusion in chapter eight that, on average, better-governed South African firms tend to be associated with higher financial performance than their poorly-governed counterparts.

The next section will discuss the results of the *compliance-index* model based on estimating a two-stage least squares (2SLS) model and the existence of alternative corporate governance mechanisms.

9.4 RESULTS BASED ON ESTIMATING TWO-STAGE LEAST SQUARES, ALTERNATIVE CORPORATE GOVERNANCE MECHANISMS AND POSSIBLE INTERDEPENDENCES

As has been discussed in subsection 5.3.1.3 of chapter five, most of the prior corporate governance studies have examined the wealth effects of corporate governance structures in isolation (e.g., Morck *et al*., 1988; Yermack, 1996; Vefeas, 1999a; Guest, 2009). However, in practice, it can be argued that shareholders will rarely rely on a single corporate governance mechanism to monitor managerial behaviour. The existence of alternative corporate governance structures, for example, suggests that OLS regression of financial performance on single corporate governance mechanisms may lead to omitted variable bias and spurious correlations (Agrawal and Knoeber, 1996, p.378; Beiner *et al*., 2006, p.252). It is also possible for interactions or independences to exist among alternative corporate governance structures in order to maximise their efficiency and effectiveness.

Therefore, following Agrawal and Knoeber (1996) and Beiner *et al*. (2006), a set of four[88] alternative corporate governance mechanisms are simultaneously estimated along with the *SACGI*. These are: (1) leverage; (2) block shareholding; (3) institutional shareholding; and (4) board size. These four corporate governance structures are not included in the broad composite corporate governance index, the *SACGI*.

To ascertain the level of correlation among the variables, Table 24 contains a correlation matrix for the financial performance proxies, the four alternative corporate governance mechanisms, and the exogenous variables. The correlation coefficients for the exogenous variables cover those that were not reported in Table 13 of chapter seven due to limited space. These are dual-listing (DUALLIST), audit firm size (BIG4), firm size (LNTA), and the presence of a corporate governance committee (CGCOM). Similar to Table 13, the bottom left half of Table 24 contains the Pearson parametric correlation coefficients, while the upper right half presents the Spearman non-parametric correlation coefficients.

Generally, both the Pearson and Spearman correlation coefficients contained in Table 24 suggest that there are low[89] correlations among the SACGI, the four alternative corporate governance mechanisms and the exogenous variables. First, dual-listing (DUALLIST) and audit firm size (BIG4) are statistically significant and positively correlated. Both are also significant and positively correlated with the *SACGI*. This is consistent with the results reported in chapter six, which suggest that, on average, cross-listed and big four audited firms comply better with the *SACGI*. Second, and as hypothesised, the existence of a corporate governance committee (CGCOM) is statistically significant and positively associated with the *SACGI*. This indicates that firms that set up a corporate governance committee to monitor compliance with corporate governance rules tend to have better governance standards.

Third, audit firm size, dual-listing and the presence of a corporate governance committee are significant and positively associated with both the ROA and Q-ratio. This is expected because these firms also tend to have better corporate governance standards. As has already been described in chapter seven, block (BLKSHDNG) and institutional shareholdings

[88]Even though there are other alternative corporate governance structures, such as the market for corporate control, data is only available for the four alternative corporate governance mechanisms used in this study at the time of data collection.

[89]Before winsorising at the 5% and 95% levels, there was a statistically significant low (.308) correlation between the alternative corporate governance mechanism, leverage (LEV) and the control variable capital structure (GEAR). After winsorising, the correlation between them was very high (.938). This was resolved by regressing the GEAR on LEV and the remaining seven control variables. The regression residuals (R-GEAR), which correlated lowly (.000) with LEV, but quite highly (.348) with GEAR was used as a proxy for capital structure (GEAR).

(INSTSHDNG) are significant and negatively and positively associated with the *SACGI*, respectively. As will be discussed further below, this suggests that block shareholding and the *SACGI* are substitutes, whereas institutional shareholding and the *SACGI* are complements. Fourth, and as expected, audit firm size, dual-listing, and the presence of a corporate governance committee are all significant and positively associated with institutional shareholding, but significant and negatively correlated with block shareholding.

Similarly, institutional shareholding is significant and positively related to the ROA and Q-ratio, while block shareholding is negatively associated with the ROA and Q-ratio. Fifth, and consistent with predictions, leverage (LEV) is significant and positively associated with the *SACGI*, but significant and negatively associated with the ROA and Q-ratio. Finally, board size is significant and positively associated with the Q-ratio, indicating that the market perceives larger boards as more effective.

The next subsection will discuss the results of the *compliance-index* model based on estimating a two-stage least squares (2SLS) model and the existence of alternative corporate governance mechanisms. Specifically, subsection 9.4.1 will report results based the ROA, whereas subsection 9.4.2 will discuss results based on the Q-ratio.

9.4.1 **Regression Results from Estimating Two-Stage Least Squares Based on ROA**

As has been explained above, past studies suggest that firms tend to use multiple corporate governance mechanisms to limit opportunistic activities of managers (e.g., Agrawal and Knoeber, 1996; Beiner *et al*., 2006). A major implication is that a regression of the ROA on a single corporate governance mechanism can result in omitted variable endogenity as have been discussed above and also in chapter five. To avoid this, and following Agrawal and Knoeber (1996) and Beiner *et al*. (2006), four alternative corporate governance mechanisms in addition to the *SACGI* are introduced. These are leverage, block shareholding, institutional shareholding, and board size. They are the only alternative corporate governance structures for which data was available at the time of data collection. They do not also form part of the broad compliance corporate governance index, the *SACGI*.

Table 25: Regression Results from a Two-Stage Least Squares Estimation of Equations (4) – (9) Based on ROA

Dependent Variable (*Equation*)	Exp. sign	SACGI (4)	Leverage (5)	Block shareholding (6)	Inst. shareholding (7)	Board size (8)	ROA (9)
Adjusted R^2		.657	.034	.302	.297	.216	.758
Standard error		.128	.122	.175	.218	.029	.076
Durbin-Watson		.804	.643	1.104	.924	.842	.791
F-value		48.550(.000)***	2.087(.008)***	13.628(.000)***	13.302(.000)***	7.828(.000)***	84.352(.000)***
No. of observations		500	500	500	500	500	500
Constant		.355(.000)***	.070(.024)**	.573(.000)***	.051(.371)	-1.162(.058)*	.418(.000)***
SACGI	-/+	-	.001(.008)***	-.005(.000)***	.005(.000)***	-.016(.055)*	.002(.000)***
Leverage	-/+	.001(.000)***	-	.002(.020)**	-.001(.447)	-.006(.462)	-.074(.000)***
Block ownership	-/+	-.003(.000)***	.001(.020)**	-	.005(.000)***	.008(.213)	-.001(.036)**
Institutional owners.	-/+	.002(.000)***	-.000(.496)	.004(.000)***	-	.016(.001)***	.004(.010)***
Board size	-/+	-.005(.055)*	-.003(.297)	.006(.107)	.012(.004)***	-	-.012(.008)***
ROA	-/+	.301(.000)***	-.123(.014)**	.062(.386)	.005(.955)	-.260(.782)	-
Corporate gov. com.	-/+	.118(.000)***	-	-	.018(.469)	.516(.065)*	-
Audit firm size	-/+	.149(.000)***	-	-	-	.724(.010)***	-.018(.341)
Firm size	-/+	-.050(.000)***	-.002(.872)	-.043(.011)**	.048(.024)**	-2.239(.000)***	-.265(.000)***
Capital structure	-/+	-.000(.842)	-	-.002(.036)**	-	.011(.224)	-.000(.842)
Sales growth	-/+	.020(.502)	.000(.899)	.001(.013)**	-.001(.273)	.000(.986)	.002(.000)***
Capital expenditure	-/+	.270(.066)*	.003(.039)**	.002(.319)	.000(.961)	.002(.928)	.082(.000)***
Dual-listing	-/+	.061(.001)***	-	-	-	-.314(.316)	-.064(.000)***
Basic materials		-.043(.026)**	-.014(.436)	.020(.437)	.035(.264)	-.161(.637)	-.128(.000)***
Consumer services		.023(.216)	.004(.803)	-.045(.076)*	.087(.006)***	-.060(.859)	-.037(.031)**
Industrials		.036(.054)*	.028(.120)	.026(.311)	-.021(.496)	.104(.755)	.094(.005)***
Technology		.003(.859)	-.017(.318)	.025(.319)	-.019(.549)	-.023(.944)	-.096(.000)***
Year 2002		-.081(.000)***	.017(.329)	-.062(.014)**	.066(.036)**	-.091(.785)	.058(.000)***
Year 2004		.061(.001)***	-.011(.524)	.018(.473)	-.012(.711)	.088(.791)	-.032(.000)***
Year 2005		.074(.000)***	-.017(.330)	.021(.414)	-.030(.335)	.137(.680)	-.080(.000)***
Year 2006		.093(.000)***	-.014(.419)	.009(.718)	-.030(.348)	.181(.590)	-.043(.000)***

Notes: Coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison. As has been explained in subsection 5.3.1.3 of chapter five, to limit endogenity problems, four alternative corporate governance mechanisms in addition to the *SACGI* are introduced. These are: leverage, block shareholding, institutional shareholding, and board size. They are the alternative corporate governance structures for which data was available at the time of data collection. They do not also form part of the broad composite index, the *SACGI*. Equations 4 to 9 are estimated as a system of simultaneous equations by using two-stage least squares. Specifically, in the first stage, each of equations 4 to 8 specified in subsection 5.3.1.3 of chapter five and reported in Columns 3 to 7 are first estimated along with their respective control variables. The resulting predicted values (i.e., instrumented or predicted part of each corporate governance structure) are saved. In the second stage, the *SACGI*, leverage, block shareholding, institutional shareholding, and board size are replaced with their instrumented or predicted values from equations 4 to 8 in equation 9, respectively. Equation 9, specified in subsection 5.3.1.3 of chapter five and reported in Column 8 is subsequently estimated along with the control variables.

As has been discussed in subsection 5.3.1.3 of chapter five, the four alternative corporate governance mechanisms in addition to the *SACGI* are estimated simultaneously using two-stage least squares (2SLS). Specifically, in the first stage, each of equations 4 to 8 specified in subsection 5.3.1.3 of chapter five is estimated along with their respective control variables. The resulting predicted values (i.e., instrumented or predicted part of each corporate governance structure) are saved. In the second stage, each corporate governance mechanism is replaced with its saved predicted instrument from the first stage estimations in equation 9 as specified in subsection 5.3.1.3 of chapter five. Equation 9 is subsequently estimated along with the eight control variables.

As has also been explained in chapter five, financial performance (ROA) is also included in equations 4 to 8 as an independent variable, but as the dependent variable in equation 9. The main rationale is to test for the possible existence of endogeneities or simultaneities between the five corporate governance structures and the ROA. That is, it permits each of the five corporate governance structures to affect financial performance, but also allows the ROA to affect the choice of each of the five corporate governance mechanisms.

Table 25 contains the results from a two-stage least squares estimation of equations 4 to 9 based on the ROA as discussed in subsection 5.3.1.3 of chapter five. As can be observed, each of the five corporate governance mechanism acts as either the dependent or the independent variable in one of equations 4 to 8 along with their respective exogenous (control) variables. Similar to the inclusion of the ROA, the rationale is to allow for possible interrelations or interdependences (i.e., complementarities or substitutions) to exist among the five corporate governance structures.

The *F*-values of equations 4 to 8 in Columns 3 to 7 of Table 25 are all statistically significant at the 1% level. This means that the null hypothesis that the coefficients on the exogenous variables reported in Columns 3 to 7 of Table 23 are jointly equal to zero can be rejected. It implies that the coefficients on the explanatory variables in Columns 3 to 7 can jointly explain significant differences in the *SACGI*, leverage, block shareholding, institutional shareholding, and board size, respectively. The adjusted R^2 ranges between 3% for equation 5 in Column 4 to 66% for equation 4 in Column 3 of Table 25.

This is consistent with the adjusted R^2 reported by prior corporate governance studies. For example, using five alternative corporate governance mechanisms in addition to a broad composite corporate governance index, Beiner *et al*. (2006, p.265) report adjusted R^2 ranging between 41% for their leverage to 44% for their broad composite corporate governance index.

Similarly, using six alternative corporate governance mechanisms, Black *et al*. (2006a, p.390) report adjusted R^2 of 19% for their disclosure sub-index to 77% for their shareholder rights sub-index.

Generally, the results from equations 4 to 8 contained in Columns 3 to 7 of Table 25 present an interesting pattern of statistically significant interdependences among most of the five corporate governance mechanisms. As the results for the *SACGI* from equation 4 reported in Column 3 of Table 25 show, all four alternative corporate governance structures are statistically significantly related to the *SACGI*. Also, leverage and institutional shareholding are positively related to the *SACGI*, whereas board size and block shareholding have a negative relationship with the *SACGI*.

Empirically, the evidence of a statistically significant and negative *SACGI*-block shareholding relationship in Column 3 of Table 25, suggests substitutability between the *SACGI* and block shareholding. This also supports the idea that firms optimally choose corporate governance structures, whereby a greater usage of one corporate governance mechanism results in a lesser usage of another. Theoretically, this is consistent with the hypothesis that firms with poor corporate governance structures can compensate that with a dominant vigilant block shareholder (e.g., Agrawal and Knoeber, 1996; Beiner *et al*., 2006). By contrast, the statistically significant and positive relationship between the *SACGI* and institutional shareholding in Column 3 of Table 25 indicates that they complement each other. It supports the theory that due to their relative superior knowledge and financial clout, greater institutional shareholding impacts positively on internal corporate governance structures (e.g., Core, 2001; Shabbir and Padget, 2005).

The statistically significant and positive coefficient between the *SACGI* and ROA in Column 3 of Table 25 indicates that there is a reverse relationship between the *SACGI* and accounting performance. That is, firms with higher *SACGI* scores do not only help to generate higher accounting returns, but that there is also reverse association – firms with higher ROA also seems to adopt better corporate governance mechanisms.

With regard to the findings for leverage from equation 5 presented in Column 4 of Table 25, the results show that the *SACGI* and block shareholding are statistically significant and positively associated with leverage. By contrast, institutional shareholding and board size in Column 4 of Table 25 are statistically insignificant and negatively related to leverage. This means that South African listed firms with higher levels of leverage may not be necessarily associated with higher *SACGI* scores and greater block shareholding. The statistically

significant and positive association between leverage and the *SACGI,* and between leverage and block shareholding in Column 4 of Table 25, indicate that there a complementarity relationship between leverage and the *SACGI,* and between leverage and block shareholding. It means that firms with good corporate governance standards are better placed to raise debt at a cheaper cost.

Empirically, the statistically significant and positive leverage-block shareholding relationship in Column 4 of Table 25 offers empirical support to the reported findings of Agrawal and Knoeber (1996). In contrast, it does not support the results of Beiner *et al*. (2006) who report statistically insignificant and negative association between block shareholding and leverage. The statistically significant and negative leverage-ROA relationship in Column 4 of Table 25 suggests that there is a simultaneous or reverse association between the ROA and leverage. That is, due to the high cost of financial distress and less flexibility often associated with leverage (Myers, 1977, p.148), managers of profitable firms are less likely to rely on debt financing, but also highly levered firms generate poor accounting returns.

With reference to the results for block shareholding from equation 6 reported in Column 5 of Table 25, they show that a lower *SACGI* score, a greater institutional shareholding and leverage are statistically significantly associated with block shareholding. This evidence is consistent with the results of Beiner *et al*. (2006) who document similar interrelations among the same three corporate governance mechanisms. By contrast, it fails to support the results of Agrawal and Knoeber (1996) who report a statistically significant negative relationship between block and institutional shareholdings.

Since it costs more to acquire larger ownership stakes, especially in larger firms, the statistically significant and positive block shareholding-institutional shareholding association in Column 5 of Table 25 is more consistent with prior theory. That is, block shareholders are more likely to be institutional shareholders than the other way round. The statistically significant and negative relationship between block shareholding and the *SACGI,* but the positive association between block shareholding and leverage in Column 5 of Table 25, indicates that there is a significant reverse association between block shareholding and leverage. The statistically significant and positive reverse association between block shareholding and leverage is, however, theoretically less expected.

This is because as block shareholding is associated with poor internal corporate governance standards (i.e., *SACGI* scores), it is expected that it will be more difficult for such firms to raise external debt from the market. A plausible explanation may be that even though

firms dominated by block shareholders tend to have poor corporate governance structures, they are still able to raise debt from the market, but possibly at a significantly higher cost. Finally, the coefficient on the ROA in Column 5 of Table 25 is positive, but statistically insignificant, suggesting that more profitable firms may not necessarily be dominated by block shareholders.

With respect to the findings for institutional shareholding from equation 7 contained in Column 6 of Table 25, they indicate that a higher *SACGI* score, a greater block shareholding, and a larger board size are statistically significantly associated with institutional shareholding. The negative, but statistically insignificant relationship between institutional shareholding and leverage offers empirical support to the results of Agrawal and Knoeber (1996).

Evidence of a statistically significant and positive institutional shareholding-block shareholding, and institutional shareholding-*SACGI* associations in Column 6 of Table 25 imply that there are statistically significant reverse interdependences among these three alternative corporate governance mechanisms. This means that better-governed firms are more attracted to institutional shareholders, but also the presence of institutional shareholders can impact positively on internal corporate governance mechanisms. Finally, the coefficient on the ROA in Column 6 of Table 23 is negative, but statistically insignificant, indicating that more successful firms may not necessarily attract institutional shareholders.

With reference to the results for board size from equation 8 reported in Column 7 of Table 25, they suggest that board size is statistically significantly associated with a lower *SACGI* score and a greater institutional shareholding. It also implies that there is a reverse statistically significant and positive association between board size and institutional shareholding, but a reverse statistically significant and negative relationship between board size and the *SACGI*. This also means that board size and the *SACGI* appear to be substitutes, whereas board size and institutional shareholding seem to be complements.

Finally, the coefficient on the ROA in Column 7 of Table 25 is negative, but statistically insignificant. This indicates that more financially successful firms may not necessarily end up with having larger board size. Overall, the results suggest interesting patterns of interdependences or simultaneities among the five corporate governance mechanisms, as well as between the ROA and the five corporate governance structures. This indicates that the use of 2SLS to estimate the corporate governance-financial performance relationship appears to be appropriate.

Considering the exogenous (control) variables in Columns 3 to 7 of Table 25, most of the coefficients have the expected signs with some being statistically significant and others not. For example, big four audited firms, cross-listed firms, and firms which have established corporate governance committees in Column 3 of Table 25 tend to have significantly higher *SACGI* scores. As hypothesised, the coefficient on capital expenditure is statistically significant and positively related to the *SACGI*. The significant negative relationship between the *SACGI* and firm size in Column 3 of Table 25 is, however, surprising without any immediate convincing explanation. A possible explanation is that it may be due to sensitivities arising out of the specification of the system of equations, such as omitted variable(s) bias. The industry and year dummies in Column 3 of Table 25 also show that corporate governance standards significantly differ across different industries and years.

With regard to leverage in Column 4 of Table 25, all the control variables, including the year and industry dummies, are statistically insignificant, except capital expenditure. This explains the relatively low reported adjusted R^2 of equation 5. The statistically significant and positive leverage-capital expenditure association in Column 4 of Table 25 indicates that firms with heavy investment in fixed assets tend to have higher levels of debt.

Block shareholding in Column 5 of Table 25 is statistically significant and negatively correlated with firm size and capital structure. However, it also shows that block sharehoding is statistically significant and positively associated with sales growth, as hypothesised. Consistent with prediction, institutional shareholding in Column 6 of Table 25 is statistically significant and positively associated with firm size. This is because larger firms are more attractive to institutional investors (Agrawal and Knoeber, 1996, p.383). Similarly, and consistent with predictions, audit firm size and the presence of a corporate governance committee in Column 7 of Table 25 are statistically significant and positively associated with board size. The statistically significant and negative relationship between firm size and board size Column 7 of Table 25 is theoretically unexpected. It may be due to sensitivities arising out of potential misspecification of the system of equations, such as potential omitted variable(s).

Equation 9 in Column 8 of Table 25 allows for the existence of potential interdependences or simultaneities among the alternative corporate governance structures. It also utilises the ROA as an explanatory variable in predicting the instrumented part of all five corporate governance mechanisms. This allows the ROA to affect each corporate governance

mechanism, but also permits the corporate governance structures to affect the ROA in order to capture potential complementary, simultaneous or substitution effects.

The *F*-value of equations 9 in Column 8 of Table 25 is significant at the l% level. Therefore, the null hypothesis that the coefficients for the exogenous variables are jointly equal to zero can be rejected. In addition to capturing the control variables, the adjusted R^2 is 76% in Column 8 of Table 25. This is very high, but consistent with theoretical and empirical expectations (e.g., Agrawal and Knoeber, 1996; Gujarati, 1995, 2003; Wooldridge, 2002)[90]. For example, Black *et al*. (2006a) report that the adjusted R^2 increased from 33% with regard to the un-instrumented composite corporate governance index to 64% in the case of the instrumented composite corporate governance index. This suggests their instrumented composite corporate governance index's predictions are greater than the un-instrumented one.

With regard to the coefficients of the corporate governance mechanisms in Column 8 of Table 25, they suggest significant evidence of interdependences or simultaneities among the alternative corporate governance structures. Most importantly, the *SACGI* remains positive and statistically significant in Column 8 of Table 25. The magnitude of the coefficient on the *SACGI* also remains unchanged at .002 as reported in Column 4 of Table 17 of chapter eight. This means that the earlier conclusion in chapter eight that, on average, better-governed firms tend to be associated with higher accounting returns than their poorly-governed counterparts is robust whether alternative corporate governance mechanisms are present or not. Leverage, block shareholding, institutional shareholding and board size in Column 8 of Table 25 are all statistically significant at the 1% level.

Following past studies (e.g., Agrawal and Knoeber, 1996; Beiner *et al*., 2006; Black *et al*., 2006a) and assuming instrument validity, the statistically significant and negative relationship between the ROA and block shareholding in Column 8 of Table 25 supports the entrenchment hypothesis. It implies that block shareholders seem to be more interested in the private benefits of control at the expense of minority shareholders than engaging in effective

[90] Theoretically, the instrumented part of each corporate governance mechanism contains portions of the remaining four alternative corporate governance structures, as well as parts of the ROA. Empirically, this makes the instrumented parts of the corporate governance mechanisms to predict financial performance more strongly than their un-instrumented counterparts (e.g., Beiner *et al*., 2006; Black *et al*., 2006a). This means that, while inferences from the regression diagnostics, statistical significance and direction of coefficients may be accurate, their true magnitudes are more likely to be over or underestimated (Beiner *et al*., 2006, p.271). This is because they measure the strength of the instrumented parts of the corporate governance mechanisms to predict financial performance rather than the corporate governance mechanisms themselves. This also means that the high adjusted R^2 may be spurious. Indeed, the main aim of the analysis is to ascertain whether there are significant interdependences (substitution or complementary effects) exist among the alternative corporate governance mechanisms rather than the explanatory power of the model.

monitoring of managers. The statistically significant and negative impact of leverage on the ROA fails to lend support to the tax advantage theory of capital structure and the effective utilisation of free cash flow theory of agency (e.g., Myers, 1977; Jensen, 1986).

Also, the statistically significant and negative coefficient between the ROA and board size in Column 8 of Table 25 suggests that larger boards are ineffective. With respect to the South African context, it indicates board appointments may be made in order to meet black economic empowerment and employment equity targets rather than for the quality of their contributions to board decisions. By contrast, the statistically significant and positive relationship between ROA and institutional shareholding in Column 8 of Table 25 supports the suggestions of Barr *et al*. (1995, p.19). Barr *et al*. (1995) suggest that despite the pervasiveness of complex institutional cross-holdings and pyramidical structures in South Africa, it represents an efficient way by which South African companies are able to finance new growth opportunities without giving up substantial control.

Unlike the *SACGI*, the control variables in Column 8 of Table 25 show some level of sensitivities when compared with the results presented in Column 4 of Table 17 in chapter eight. First, the directions of the coefficient on firm size, capital structure, capital expenditure and dual-listing in Column 8 of Table 25 have changed. Second, firm size, capital expenditure, dual-listing, the industry and the year dummies that were not statistically significant, are now statistically significant at the 1% level. This partly explains the relatively high reported adjusted R^2. It suggests that in the presence of alternative corporate governance structures, the reported results for the control variables in chapter eight are not robust. These sensitivities may be due to misspecifications within the system of equations, such as potential omitted variable(s) bias. Generally, the results in Column 8 of Table 25 indicate that the control variables interrelate differently with the instrumented part of the alternative corporate governance mechanisms.

Together, the results in Column 8 of Table 25 imply that a higher *SACGI* score, a greater institutional shareholding along with a lesser block shareholding, a smaller board size and a lesser debt usage is associated with higher accounting returns. The results also show significant reverse associations between the ROA, the *SACGI*, and leverage. This suggests that higher accounting returns is significantly associated with a higher *SACGI* score, but a lesser debt usage. Overall, allowing for the existence of potential interdependences or endogeneities among the alternative corporate governance mechanisms, the results support the previous conclusion in chapter eight that, on average, better-governed South African listed sampled

firms tend to be associated with higher accounting returns than their poorly-governed counterparts.

9.4.2 ***Regression Results from Estimating Two-Stage Least Squares Based on Q-ratio***

This subsection discusses results from the two-stage least squares (2SLS) analysis based on the Q-ratio. Similar to the preceding subsection, the four alternative corporate governance mechanisms in addition to the *SACGI* are estimated simultaneously using two-stage least squares. Specifically, in the first stage, each of equations 4 to 8 specified in subsection 5.3.1.3 of chapter five is estimated along with their respective control variables. The resulting predicted values (i.e., instrumented or predicted part of each corporate governance structure) are saved. In the second stage, each corporate governance mechanism is replaced with its saved predicted instrument from the first stage estimations in equation 9 as specified in subsection 5.3.1.3 of chapter five. Equation 9 is subsequently estimated along with the seven control variables.

Financial performance (Q-ratio) is also added to equations 4 to 8 as an independent variable, but as the dependent variable in equation 9. The aim is to test for the potential existence of endogeneities or simultaneities by allowing each of the five corporate governance mechanisms to affect financial performance, but also permitting the Q-ratio to affect the choice of each corporate governance mechanisms.

Table 26 presents the results from a two-stage least squares estimation of equations 4 to 9 based on the Q-ratio. Each of the five corporate governance mechanisms appear on the left-hand side of one of equations 4 to 8 and the right-hand side of each, of the other equations, along with their respective exogenous (control) variables. Similar to the inclusion of the Q-ratio, the rationale is to capture potential simultaneity, substitution or complementary effects among the five corporate governance structures.

The *F*-values of equations 4 to 8 in Colums 3 to 7 of Table 26 are all statistically significant at the 1% level. This suggests that the null hypothesis that the coefficients on the exogenous variables reported in Columns 3 to 7 of Table 26 are jointly equal to zero can be rejected. It means that the coefficients on the independent variables in Columns 3 to 7 jointly explain significant differences in the *SACGI*, leverage, block shareholding, institutional shareholding, and board size, respectively. The adjusted R^2 ranges between 6% for leverage in equation 5 in Column 4 to 63% for the *SACGI* in equation 4 in Column 3.

This is similar to the adjusted R^2 reported by prior corporate governance studies (e.g., Agrawal and Knoeber, 1996; Durnev and Kim, 2005). For example, using four alternative corporate governance mechanisms in addition to a broad composite corporate governance index, Durnev and Kim (2005, p.1480) report adjusted R^2 ranging between 12% for their social awareness index to 50% for their composite corporate governance index.

Generally, the results from equations 4 to 8 in Columns 3 to 7 of Table 26 offer evidence of statistically significant interrelations among most of the five corporate governance mechanisms. With regard to the results from equation 4 presented in Column 3 of Table 26, the *SACGI* is statistically significant and negatively related to block shareholding and board size, but statistically significant and positively associated with leverage and institutional shareholding.

Empirically, the evidence of a statistically significant and negative coefficient on block shareholding in Column 3 of Table 26 suggests the existence of a substitution effect between the *SACGI* and block shareholding. Theoretically, it offers support to the suggestion that block shareholding can minimise the agency problems between managers and shareholders by reducing information asymmetry (e.g., Agrawal and Knoeber, 1996; Beiner *et al*., 2006). In contrast, the statistically significant and positive *SACGI*-institutional shareholding relationship in Column 3 of Table 26 suggests the existence of a complementary effect between the *SACGI* and institutional shareholding. Theoretically, this is consistent with the notion that because of their information and financial advantages, greater institutional shareholding impacts positively on internal corporate governance structures (Core, 2001; Shabbir and Padget, 2005).

Unlike the ROA, the coefficient on the Q-ratio in Column 3 of Table 26 is positive, but not statistically significant. This suggests that there is no simultaneous or reverse association relationship between the *SACGI* and the Q-ratio. That is, firms with higher *SACGI* scores do receive significantly higher market valuation, but firms with higher Q-ratio may not necessarily adopt better corporate governance mechanisms.

With respect to the findings for leverage from equation 5 contained in Column 4 of Table 26, the results indicate that the *SACGI* and block shareholding are significant and positively associated with leverage. This suggests that South African listed firms with high gearing are associated with higher *SACGI* scores and greater block shareholding. Empirically, this offers support to the results of Agrawal and Knoeber (1996) who report statistically significant and positive association between leverage and block shareholding. In contrast, it

does not lend support to the findings of Beiner *et al*. (2006) who document a statistically significant and negative relationship between their constructed good corporate governance index and leverage. The coefficient on the Q-ratio in Cloumn 4 of Table 26 is negative and statistically significant. This means that not only are highly valued firms less likely to rely on debt financing, but also firms that are highly geared do receive lower market valuation.

With reference to the results for block shareholding from equation 6 presented in Column 5 of Table 26, the analysis suggests that a lower *SACGI* score, but a larger board size, a greater institutional shareholding, and a greater debt usage are statistically significantly associated with block shareholding. The relationships between the *SACGI,* leverage and block ownership in Column 5 of Table 26 are evidence of the existence of significant reverse associations between three alternative corporate governance mechanisms. This means that firms with better internal corporate governance structures can afford to have dispersed shareholdings, and the presence of a block shareholder is likely to increase debt usage and vice-versa.

This evidence supports the results of Beiner *et al*. (2006). They report that their composite good corporate governance index is statistically significant and negatively correlated with block shareholding. Leverage and board size in Column 5 of Table 26, however, are statistically significant and positively associated with block shareholding. Also, institutional shareholding in Column 5 of Table 26 is statistically significant and positively associated with block shareholding. The evidence of a positive block shareholding-institutional shareholding relationship does not support the results of Agrawal and Knoeber (1996). The results of Agrawal and Knoeber (1996) suggest a statistically significant and negative link between block and institutional shareholdings. Finally, the coefficient on the Q-ratio in Column 5 of Table 26 is negative, but statistically insignificant. This indicates that firms dominated by block shareholders may not necessarily receive statistically significant lower market valuation.

With reference to the findings for institutional shareholding from equation 7 reported in Column 6 of Table 26, they suggest that a higher *SACGI* score, a greater block shareholding, and a larger board size are statistically significantly associated with institutional shareholding. The statistically significant and positive relationship between the *SACGI,* block shareholding and institutional shareholding in Column 6 of Table 26, suggests the existence of significant reverse interrelations among the corporate governance structures.

Table 26: Regression Results from a Two-Stage Least Squares Estimation of Equations (4) – (9) Based on Q-ratio

Dependent Variable (*Equation*)	Exp. Sign	SACGI (4)	Leverage (5)	Block shareholding (6)	Inst. shareholding (7)	Board size (8)	Q-ratio (9)
Adjusted R^2		.633	.055	.302	.299	.221	.963
Standard error		.133	.121	.175	.217	.028	.125
Durbin-Watson		.765	.651	1.106	.922	.845	.854
F-value		43.777(.000)***	2.797(.000)***	13.624(.000)***	13.446(.000)***	8.027(.000)***	684.952(.000)***
No. of observations		500	500	500	500	500	500
Constant		.358(.000)***	.101(.001)***	.580(.000)***	.035(.553)	-1.390(.027)**	3.085(.000)***
SACGI	-/+	-	.001(.009)***	-.004(.000)***	.005(.000)***	-.017(.030)**	.000(.783)
Leverage	-/+	.001(.053)*	-	.001(.040)**	-.000(.600)	-.003(.692)	-.385(.000)***
Block ownership	-/+	-.003(.000)***	.001(.044)**	-	.005(.000)***	.008(.200)	-.083(.000)***
Institutional owners.	-/+	.003(.000)***	-.000(.659)	.004(.000)***	-	.015(.002)***	.036(.004)***
Board size	-/+	-.006(.030)**	-.000(.543)	.006(.098)*	.018(.007)***	-	-.064(.047)**
Q-ratio	-/+	.017(.130)	-.041(.000)***	-.012(.399)	.020(.199)	.336(.081)*	-
Corporate gov. com.	-/+	.121(.000)***	-	-	.019(.451)	.550(.049)**	-
Audit firm size	-/+	.152(.000)***	-	-	-	.674(.017)**	.112(.058)*
Firm size	-/+	-.047(.000)***	-.008(.499)	-.044(.010)***	.051(.018)**	-2.187(.000)***	-.342(.000)***
Capital structure	-/+	-.000(.413)	-	-.002(.031)**	-	.011(.230)	-.001(.010)***
Sales growth	-/+	.001(.026)**	-.000(.714)	.001(.005)***	-.001(.246)	-.001(.902)	.001(.038)**
Capital expenditure	-/+	.002(.146)	.004(.005)***	.002(.267)	-.000(.854)	-.005(.857)	.184(.000)***
Dual-listing	-/+	.067(.000)***	-	-	-	-.391(.213)	.031(.096)*
Basic materials		-.060(.002)***	-.023(.899)	.021(.403)	.028(.379)	-.232(.497)	.036(.068)*
Consumer services		.012(.540)	.021(.236)	-.042(.105)	.078(.015)**	-.193(.576)	.472(.000)***
Industrials		.028(.149)	.034(.052)*	.025(.322)	-.024(.452)	.077(.816)	.653(.009)***
Technology		.002(.149)	-.010(.546)	.027(.279)	-.023(.469)	-.097(.773)	-.541(.000)***
Year 2002		-.087(.000)***	.020(.262)	-.061(.015)**	.064(.041)**	-.105(.752)	.243(.000)***
Year 2004		.055(.004)***	-.002(.899)	.019(.460)	-.015(.628)	.034(.917)	.028(.469)
Year 2005		.067(.001)***	-.002(.993)	.024(.351)	-.038(.228)	.009(.979)	.324(.000)***
Year 2006		.087(.000)***	.007(.687)	.015(.574)	-.041(.199)	.000(.999)	.458(.000)***

Notes: Coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison. As has been explained in subsection 5.3.1.3 of chapter five, to limit endogenity problems, four alternative corporate governance mechanisms in addition to the *SACGI* are introduced. These are: leverage, block shareholding, institutional shareholding, and board size. They are the alternative corporate governance structures for which data was available at the time of data collection. They do not also form part of the broad composite index, the *SACGI*. Equations 4 to 9 are estimated as a system of simultaneous equations by using two-stage least squares. Specifically, in the first stage, each of equations 4 to 8 specified in subsection 5.3.1.3 of chapter five and reported in Columns 3 to 7 are first estimated along with their respective control variables. The resulting predicted values (i.e., instrumented or predicted part of each corporate governance structure) are saved. In the second stage, the *SACGI*, leverage, block shareholding, institutional shareholding, and board size are replaced with their instrumented or predicted values from equations 4 to 8 in equation 9, respectively. Equation 9, specified in subsection 5.3.1.3 of chapter five and reported in Column 8 is subsequently estimated along with the control variables.

This implies that institutional shareholders are more likely to invest in firms with better internal corporate governance structures, but also the presence of institutional shareholders can significantly influence managers to improve internal corporate governance mechanisms. Finally, and unlike the ROA, the coefficient on the Q-ratio in Column 6 of Table 26 is positive, but statistically insignificant. This indicates that higher market valuation is not necessarily significantly associated with institutional shareholding.

With respect to the results for board size from equation 8 contained in Column 7 of Table 26, they suggest that a lower *SACGI* score, but a greater institutional shareholding, is statistically significantly associated with board size. It also indicates the existence of significant reverse associations between board size, institutional shareholding and the *SACGI*. The statistically significant and negative relationship between board size and the *SACGI* in Column 7 of Table 26 indicates that they are substitutes or larger boards appear to have lower *SACGI*. The statistically significant and positive association between board size and institutional shareholding suggests that they are complements.

Finally, the coefficient on the Q-ratio under board size in Column 7 of Table 26 is positive and statistically significant at the 1% level. This suggests the presence of a significant reverse association between the Q-ratio and board size. This implies that firms with larger boards receive higher market valuation, but also it is presumably more attractive for prospective board members to join firms that are financially successful. To summarise, the results in Columns 3 to 7 of Table 26 support the existence of significant interrelations or simultaneities among the five corporate governance structures, as well as between the Q-ratio and the five corporate governance mechanisms. Crucially, it seems to justify the reliance on the 2SLS technique to simultaneously estimate the relationship between the corporate governance mechanisms and the Q-ratio.

With regard to the exogenous (control) in Columns 3 to 7 of Table 26, most of the coefficients show the hypothesised signs with some being significant and others not. For instance, and as expected, audit firm size, sales growth, dual-listing and the presence a corporate governance committee in Column 3 of Table 26 are significantly positively associated higher *SACGI* scores. By contrast, the negative coefficient on firm size in Column 3 of Table 26 is theoretically unexpected. It, however, does not come with immediate cogent theoretical explanation. It may, for example, be due to potential misspecifications in the system of equations, such as omitted variable(s) bias. They coefficients on the year dummies

in Column 3 of Table 26 also indicate that corporate governance standards significantly differ across different financial years, as hypothesised.

With respect to leverage in Column 4 of Table 26, and consistent with the prediction, it is statistically significant and positively associated with capital expenditure. With regard to block ownership in Column 5 of Table 26, and as predicted, it is statistically significant and negatively associated with firm size and capital structure. Also, leverage is statistically significant and positively related to sales growth as expected in Column 5 of Table 26. Similarly, and consistent with expectations, firm size is statistically significant and positively associated with institutional shareholding in Column 6 of Table 26. Finally, and consistent with predictions, board size is statistically significant and positively associated with the presence of a corporate governance committee and audit firm size in Column 7 of Table 26.

Finally, equation 9 in Column 8 of Table 26 allows for the existence of possible interrelations or endogeneities among the five corporate governance mechanisms. It also utilises the Q-ratio as an exogenous variable in predicting the instrumented portion of all five corporate governance mechanisms. This permits the Q-ratio to affect each corporate governance structure, but also allows the corporate governance mechanisms to affect the Q-ratio in order to capture probable complementary, simultaneous or substitution effects among the variables.

The *F*-value of equation 9 in Column 8 of Table 26 is statistically significant at the l% level. Therefore, the null hypothesis that the coefficients on the exogenous variables are jointly equal to zero can be rejected. The adjusted R^2 is 96%, which is excessively high. However, it is theoretically and empirically not too surprising. This is because, and as has been explained above, prior econometric theory (e.g., Gujarati, 1995, 2003; Wooldridge, 2002; Brooks, 2003), and past corporate governance studies (e.g., Agrawal and Knoeber, 1996; Black *et al*., 2006; Black *et al*., 2006a), suggest that the instrumented parts of corporate governance mechanisms tend to predict financial performance more strongly than their un-instrumented counterparts.

This also means that the very high adjusted R^2 may be spurious. In fact, and has been explained above, the main aim of the analysis is to ascertain whether there are significant interdependences (substitution or complementary effects) exist among the alternative corporate governance mechanisms rather than the explanatory power of the model.

Examining the coefficients on the corporate governance structures in Column 8 of Table 26, they offer evidence of significant interrelations among the alternative corporate

governance mechanisms. Unlike the ROA, however, it indicates that the magnitude and the statistical significance of the coefficient on the *SACGI* are not robust to the presence of alternative corporate governance mechanisms. First, the coefficient on the *SACGI* in Column 8 of Table 26, which was statistically significant at the 1% level in Column 4 of Table 18 of chapter seven, is no longer statistically significant. Second, the magnitude of the coefficient has reduced significantly from .004 to .000. These sensitivities may be arising from equation misspecifications due to the presence of the alternative corporate governance mechanisms, such as potential omitted variable(s) bias. It may also be due to the use of the instrumented part of the variables. The results do not support the previous conclusion in chapter eight that there is a statistically significant and positive relationship between the Q-ratio and the *SACGI*.

By contrast, the remaining four alternative corporate governance structures in Column 8 of Table 26 are all statistically significant. Following previous corporate governance studies (e.g., Agrawal and Knoeber, 1996; Beiner *et al*., 2006; Black *et al*., 2006a) and assuming instrument validity, the negative coefficient on block shareholding offers empirical support to the entrenchment hypothesis (e.g., Morck *et al*., 1988; McConnell and Servaes, 1990). The negative relationship between the Q-ratio and leverage does not support the tax advantages of using debt and efficient use of free cash flows as suggested by capital structure and agency theories, respectively (e.g., Myers, 1977; Jensen, 1986).

Similarly, the negative coefficient on board size suggests that the market perceives larger boards as ineffective. Within the South African context, this seems to suggest that the willingness to meet black economic empowerment and employment equity targets tend to take precedence over the potential to make quality contributions to board decisions when appointments to corporate boards are made.

In contrast, the positive association between the Q-ratio and institutional shareholding offers empirical support to the suggestion of Barr *et al*. (1995, p.19) that despite the pervasiveness of complex institutional cross-holdings and pyramidical structures in South Africa, it represents an efficient way by which firms are able to raise external capital to finance growth without surrendering significant control.

With respect to the control variables in Column 8 of Table 26, they generally exhibit the expected signs, and are all statistically significant when compared with those reported in Column 4 of Table 18 in chapter eight. For example, and as expected, capital expenditure, sales growth, audit firm size and dual-listing in Column 8 of Table 26 are statistically significant and positively associated with the Q-ratio. Similarly, and as predicted, firm size

and capital structure are statistically significantly negatively correlated with the Q-ratio. It also shows that the Q-ratio significantly differs across different industries and years as hypothesised.

To summarise, and like the ROA, the results in Column 8 of Table 26 indicate that greater institutional shareholding along with lesser block shareholding, smaller board size and lesser debt usage are statistically significantly associated with higher market valuation. Unlike the ROA, however, the results suggest that allowing for the existence of alternative corporate governance mechanisms, the *SACGI* looses its ability to explain significant differences in the Q-ratio. Overall, the results in Column 8 of Table 26 imply that firms with insignificant block shareholding, smaller boards and lesser debt usage, but significantly greater institutional shareholding can afford to have relatively poor internal corporate governance structures without necessarily being punished by the market with lower market valuation.

The final section below will investigate the relationship between changes in the financial performance and changes in the *SACGI* rather than using actual levels for the analysis.

9.5 OLS REGRESSION RESULTS OF THE LINK BETWEEN CHANGES IN FINANCIAL PERFORMANCE AND CHANGES IN THE SACGI

In line with the prior literature, the results presented in chapter eight and the sensitivity or robustness analyses carried out so far generally suggest that firms with better corporate governance standards tend to be associated with higher financial returns than their counterparts with poor corporate governance standards. However, it is still unclear within the prior literature whether better corporate governance causes better financial performance or vice-versa. This may partly be attributed to data limitations in prior corporate governance studies.

This section attempts to fill this gap within the prior literature by running a regression of changes in the financial performance on changes in the *SACGI*. This will arguably help to directly measure the effect of an improvement or a decline in the quality of firm's corporate governance on its financial performance. The central rationale is that if better-governed firms tend to be associated with superior financial performance than their poorly-governed counterparts, then it can be argued that a stronger test will be to estimate such relationship by using year-on-year changes in the financial performance and the *SACGI* rather than relying on their actual levels.

The changes data is computed for the financial performance, the *SACGI* and the non-dummy control variables, respectively, as follows:

$$\Delta FP = FP_t - FP_{t-1},$$

$$\Delta SACGI = SACGI_t - SACGI_{t-1}, \text{ and}$$

$$\Delta CONTROLS = CONTROLS_t - CONTROLS_{t-1}.$$

where: ΔFP stands for changes in the financial performance proxies, ROA and Q-ratio, $\Delta SACGI$ refers to changes in the *SACGI*, while $\Delta CONTROLS$ refers to changes in all the non-dummy control variables, namely firm size, capital structure, capital expenditure and sales growth. Changes data could not be computed for the dummy variables of industry, year, dual-listing and audit firm size. This also reduces the sample size from 500 to 400 firm-year observations.

The computed changes data as specified above is then used to re-estimate the corporate governance-firm financial performance relationship for the *compliance-index* model (equation 1)[91] as specified in equation 12 in subsection 5.3.1.2 of chapter five and repeated below:

$$\Delta FP_{it} = \alpha_0 + \beta_1 \Delta SACGI_{it} + \sum_{i=1}^{n} \beta_i \Delta CONTROLS_{it} + \varepsilon_{it} \qquad (12)$$

where: ΔFP , $\Delta SACGI$, and $\Delta CONTROLS$ are the same as defined above.

To ascertain the pattern of changes in the *SACGI* and financial performance, Table 27 reports summary descriptive of changes in financial performance and *the SACGI*. Specifically, Panels *A*, *B*, *C*, *D*, and *E* of Table 27 contain summary descriptive statistics of changes in the ROA, the Q-ratio, the *SACGI*, the *Economic-SACGI*, and the *Social-SACGI*, respectively.

The general evidence from Panels *A* to *E* is that the summary year-on-year average changes in the financial performance proxies and the *SACGI* are relatively small. By contrast, absolute changes in the financial performance proxies and the *SACGI* generally show very large spreads. For example, and as Panel *A* of Table 27 suggests, the average change in the ROA for all the 400 firm-year observations is .83 percentage points, which is relatively small.

However, the highest decrease in the ROA in a year is 34 percentage points, whereas the highest increase in the ROA in a year is 40 percentage points, indicating a very large spread. The average change in the ROA for 2003, 2004, 2005, and 2006 are 1.01, -1.60, 2.09, and 1.83 percentage points, respectively. Panel *B* of Table 27 indicates that the overall average

[91]Since the equilibrium-variable model (equation 2) contains a lot of dummy variables, it will be inappropriate to estimate a similar model or relationship.

change in the Q-ratio is .15, with a highest decrease in a year of 2.32, and a highest increase in a year of 2.33. This also shows limited average changes, but a very large spread. The average change in the Q-ratio for 2003, 2004, 2005, and 2006 are -.02, .19, .24, and .18, respectively.

Similarly, Panel *C* of Table 27 shows that the average overall change in the *SACGI* is 5.15 percentage points, which is relatively small. By contrast, the highest decrease in the *SACGI* in a year is 20 percentage points, and a highest increase in the *SACGI* in a year is 64 percentage points, also indicating a very large spread. An example of a sampled firm with such a large spread is Aflease Gold Ltd (AFO). It scored 12% (6 out of 50), 14% (7 out of 50), 18% (9 out of 50) and 22% (11 out of 50) in 2002, 2003, 2004, and 2005, respectively.

Table 27: Summary Descriptive Statistics for Changes in Performance and the SACGI

Dependent/Independent Variables	Mean	Std. Dev.	Skew-ness	Kurt-osis	Mini-mum	Maxi-mum
Panel A: Changes in the ROA All	*.83*	*9.24*	*-.28***	*3.83***	*-34.00*	*40.00*
2003	1.01	9.95	.17**	3.21**	-31.00	35.00
2004	-1.60	9.01	-.43**	3.15**	-30.00	30.00
2005	2.09	9.30	.12**	3.71***	-34.00	31.00
2006	1.83	8.30	.99**	6.19***	-17.00	40.00
Panel B: Changes in the Q-ratio All	*.15*	*.46*	*.33***	*6.32****	*-2.32*	*2.33*
2003	-.02	.39	.62**	9.98***	-1.33	2.32
2004	.19	.45	.80**.	5.89***	-1.09	2.28
2005	.24	.49	.99**	9.27***	-2.32	1.64
2006	.18	.47	.99**	4.75***	-.97	2.33
Panel C: Changes in the SACGI All	*5.15*	*8.42*	*.90***	*9.70****	*-20.00*	*64.00*
2003	9.12	10.25	1.63***	7.64***	-20.00	64.00
2004	5.80	7.49	1.28***	3.09*	-12.00	38.00
2005	2.58	4.78	.43**	.33	-10.00	16.00
2006	3.08	8.67	.97**	.99	-10.00	54.00
Panel D: Changes in Econ.-SACGI All	*5.15*	*8.99*	*1.96****	*7.32****	*-19.51*	*63.41*
2003	9.63	10.80	1.39***	5.38***	-19.51	63.41
2004	5.66	7.9	.98**	2.69	-14.63	39.02
2005	2.32	5.27	.51**	1.13	-14.63	17.07
2006	3.00	9.23	.99**	9.98***	-12.20	51.22
Panel E: Changes in Social-SACGI All	*5.11*	*13.98*	*1.26****	*4.12****	*-44.44*	*66.67*
2003	6.78	16.92	1.12***	3.65**	-44.44	66.67
2004	6.44	14.75	1.11***	1.83	-33.33	55.56
2005	3.78	11.63	.68**	1.75	-22.22	44.44
2006	3.44	11.79	.10*	8.94***	-33.33	66.67

The skewness and kurtosis test statistics in columns 4 and 5, respectively, test for normal distribution. A test statistic with (***), (**), and (*) means that the null hypothesis that a variable is normally distributed is rejected at the 1%, 5%, and 10% significance level, respectively.

However, as a result of a takeover by a US-based mining consortium and a subsequent cross-listing to the US, it scored 76% (38 out of 50) in 2006, an increase of 32 items or 64 percentage points. The average change in the *SACGI* for 2003, 2004, 2005, and 2006 are 9.15%, 5.80%, 2.58%, and 3.08%, respectively. Panels *D* and *E* of Table 27 also suggest

similar limited average changes in the *Economic-SACGI* and the *Social-SACGI*, but very large spreads. As suggested in subsection 9.2.1, the limited year-on-year average changes in the financial performance proxies and the *SACGI* explains the relatively stable results of the *compliance-index* model reported in chapter seven.

Table 28 contains the results of a simple OLS regression of changes in the financial performance on changes in the *SACGI*. Columns 3 and 4 of Table 28 show the results of changes in the ROA and Q-ratio on changes in the *SACGI*, respectively. Columns 5 and 6 contain the results of changes in the ROA and Q-ratio on changes in the *Social-SACGI*, respectively, while Columns 7 and 8 present the results of changes in the ROA and Q-ratio on changes in the *Economic-SACGI*.

The *F-values* of changes in the *SACGI*, changes in the *Social-SACGI* and changes in the *Economic-SACGI* are statistically insignificant. Therefore, the null hypothesis the coefficients on changes in the *SACGI*, changes in the *Social-SACGI*, and changes in the *Economic-SACGI* are equal to zero cannot be rejected. This implies that the regression coefficients on changes in the *SACGI*, the *Social-SACGI* and the *Economic-SACGI* cannot explain significant differences of the changes in the ROA and Q-ratio.

Consistent with the suggestions of the *F-values*, the adjusted R^2 of all six simple regressions are very low. It ranges from 0% in the case of the simple regression of changes in the ROA on changes in the *Social-SACGI* to .3% with regard to the simple regression of changes in the Q-ratio on changes in the *Economic-SACGI*. This suggests that the regression coefficients have no significant explanatory power over variations in the observed changes in the ROA and Q-ratio. This is not empirically too surprising because summary descriptive statistics contained in Table 27 suggest that the ROA, the Q-ratio and the *SACGI* experienced limited year-on-year changes. This implies that while the analysis in chapter eight using the actual levels of the ROA, the Q-ratio and the *SACGI* suggests significant relationship between good corporate governance and financial performance, there is no evidence of a similar statistically significant associations using changes in the ROA, the Q-ratio, and the *SACGI*.

Similarly, the coefficients on changes in the *SACGI*, the *Social-SACGI* and the *Economic-SACGI* under both the ROA and Q-ratio are statistically insignificant. This also fails to offer support to the conclusion in chapter eight that firms with better internal corporate governance structures tend to be associated with higher financial returns than their poorly-governed counterparts. By contrast, the positive signs of the coefficients on the remaining six simple regressions offer empirical support to the positive relationship reported in chapter eight,

although they are all statistically insignificant. The negative and statistically insignificant direction of the coefficients on changes in the *SACGI* under the Q-ratio in Column 4 of Table 28 and changes in the *Economic-SACGI* under the Q-ratio in Column 8 are not theoretically expected.

First, the unexpected negative and statistically insignificant coefficients on changes in the *SACGI* and changes in the *Economic-SACGI* under the Q-ratio suggest that changes in firm financial performance may also be influenced by general market conditions. As has been explained in subsection 5.2.2.2 (*vii*) of chapter five, on average, firms tend to perform financially better during periods of economic boom, for instance, than when there is economic recession. In fact, Panels *A* and *B* of Table 12 of chapter seven indicate that average ROA and Q-ratio was least in 2004 and 2003, respectively.

In contrast, the highest average ROA and Q-ratio were recorded in 2006. This finding has also been supported by the coefficients on the year dummies under both the *compliance-index* model and the *equilibrium-variable* model reported in chapter seven. The least ROA in 2004 and Q-ratio in 2003, also explains the negative average change in the ROA in 2004 and in the Q-ratio in 2003 in Panels A and B of Table 27, respectively.

Second, and as has been explained above, the statistically insignificant coefficient on changes in the *SACGI*, the *Social-SACGI*, and the *Economic-SACGI* under both changes in the ROA and Q-ratio may be explained by the limited changes in the corporate governance proxies. That is, the year-on-year changes in the *SACGI* were not substantial enough to be associated with significant changes in the ROA and Q-ratio. Finally, the lack of statistical significance, as well as the unexpected negative and statistically insignificant coefficients on changes in the *SACGI* and the *Economic-SACGI* under the Q-ratio may also be due to omitted variable(s) bias.

Therefore, to test whether the unexpected negative coefficients and the lack of statistical significance are spuriously caused by some omitted variable(s), the control variables are added to the same set of changes regressions in Table 29. The table shows that after including the control variables, the *F-values* of all 6 changes models are now statistically significant at the 1%. Therefore, the null hypothesis that the coefficients on changes in the *SACGI* and the control variables are jointly equal to zero can be rejected. This implies that the coefficient on changes in the *SACGI* and the control variables can jointly explain significant differences of the changes in the ROA and Q-ratio.

Table 28: OLS Regression Results of Changes in Financial Performance on Changes in the SACGI Alone

Dependent Variable	Exp. Sign	ΔROA	ΔQ-ratio	ΔROA	ΔQ-ratio	ΔROA	ΔQ-ratio
Adjusted R^2		-.002	.001	.000	-.003	-.002	.003
Standard error		.092	.460	.092	.461	.093	.460
Durbin-Watson		2.377	2.236	2.376	2.239	2.378	2.237
F-value		.242(.623)	1.585(.209)	1.199(.274)	.001(.980)	.036(.850)	2.098(.148)
No. of observations		400	400	400	400	400	400
Constant		.007(.202)	.166(.000)***	.006(.190)	.148(.000)***	.008(.144)	.168(.000)***
ΔSACGI	+	.000(.623)	-.003(.209)	-	-	-	-
ΔSocial-SACGI	+	-	-	.000(.274)	.000(.980)	-	-
ΔEconomic-SACGI	+	-	-	-	-	.000(.850)	-.004(.148)

Notes: Coefficients are in front of parenthesis. *** denotes p-value is significant at the 1% level. Δ*SACGI*, Δ*Social-SACGI* and Δ*Economic-SACGI* refer to year-on-year changes in the *SACGI*, the *Social-SACGI* and the *Economic-SACGI*, respectively. Δ*ROA* and Δ*Q-ratio* refer to year-on-year changes in return on assets (ROA) and Tobin's Q (Q-ratio), respectively.

Table 29: OLS Regression Results of Changes in Financial Performance on Changes in the SACGI and Control Variables

Dependent Variable	Exp. Sign	ΔROA	ΔQ-ratio	ΔROA	ΔQ-ratio	ΔROA	ΔQ-ratio
Adjusted R^2		.142	.109	.144	.110	.142	.108
Standard error		.086	.435	.085	.435	.086	.435
Durbin-Watson		2.383	2.070	2.386	2.071	2.382	2.071
F-value		5.730(.000)***	4.503(.000)***	5.792(.000)***	4.535(.000)***	5.713(.000)***	4.458(.000)***
No. of observations		400	400	400	400	400	400
Constant		.001(.965)	-.081(.287)	-.000(.981)	-.073(.323)	.002(.895)	-.073(.333)
ΔSACGI	+	.000(.636)	.003(.295)	-	-	-	-
ΔSocial-SACGI	+	-	-	.000(.332)	.002(.224)	-	-
ΔEconomic-SACGI	+	-	-	-	-	.000(.854)	.002(.455)
ΔFirm size	-/+	-.002(.951)	-.825(.000)***	-.003(.916)	-.814(.000)***	.001(.986)	-.810(.000)***
ΔCapital structure	-/+	-.001(.000)***	.001(.353)	-.001(.000)***	.001(.372)	-.001(.000)***	.001(.369)
ΔSales growth	+	.001(.000)**	-.001(.155)	.001(.000)***	-.001(.141)	.001(.000)***	-.001(.154)
ΔCapital expenditure	+	.001(.466)	.014(.026)**	.001(.468)	.014(.021)**	.001(.438)	.014(.022)**
Dual-listing	+	.004(.717)	-.024(.661)	.005(.671)	-.020(.721)	.004(.719)	-.025(.650)
Audit firm size	-/+	-.005(.633)	-.019(.714)	-.005(.649)	-.017(.748)	-.005(.640)	-.019(.719)
Basic materials		-.005(.728)	.041(.561)	-.004(.749)	.044(.531)	-.005(.731)	.041(.563)
Consumer services		.017(.219)	.097(.159)	.017(.210)	.100(.148)	.017(.218)	.097(.160)
Industrials		.018(.176)	.043(.535)	.019(.166)	.046(.504)	.018(.175)	.043(.537)
Technology		-.022(.089)*	.035(.610)	.022(.098)*	.040(.567)	.022(.084)*	.037(.597)
Year 2004		-.022(.074)*	.236(.000)***	-.023(.061)*	.227(.000)***	-.023(.068)*	.234(.000)***
Year 2005		.022(.885)	.333(.000)***	.001(.449)	.320(.000)***	.001(.954)	.328(.000)***
Year 2006		.010(.451)	.315(.000)***	.010(.332)	.303(.000)***	.009(.508)	.308(.000)***

Notes: Coefficients are in front of parenthesis. ***, ** and * denote p-value is significant at the 1%, 5% and 10% level, respectively. Also, consumer goods industry and year 2003 are excluded from the regression analyses. They are used as base industry and year, respectively, for purposes of comparison. Δ*SACGI*, Δ*Social-SACGI* and Δ*Economic-SACGI* refer to year-on-year changes in the *SACGI*, the *Social-SACGI* and the *Economic-SACGI*, respectively. Δ*ROA* and Δ*Q-ratio*, Δ*firm size*, Δ*capital structure*, Δ*sales growth*, and Δ*capital expenditure* refer to year-on-year changes in return on assets (ROA), Tobin's Q (Q-ratio), firm size, capital structure, sales growth, and capital expenditure, respectively.

Consistent with the improvements in the *F-values*, the adjusted R^2 of all 6 models in Table 29 have also improved substantially. The adjusted R^2 range from 11% in the case of the regression of changes in the Q-ratio on the changes in the *Economic-SACGI* in Column 8 of Table 29 to 14% with regard to the regression of changes in the ROA on the changes in the *Social-SACGI* in Column 5. This suggests that the control variables have contributed substantially to the explanatory power of the models. This also means that the coefficients on the changes in the *SACGI* and the control variables can jointly explain between 11 to 14% of the variations of the changes in the ROA and Q-ratio.

The coefficients on all three compliance corporate governance indices under both the ROA and Q-ratio remain statistically insignificant. The signs of the coefficients on all three compliance corporate governance indices under both the ROA and Q-ratio are now positive. This implies that the unexpected negative and statistically insignificant coefficients on the changes in the *SACGI* and the *Economic-SACGI* under the Q-ratio in Table 29 were spuriously caused by omitted variables. As has already been explained above, the lack of statistical significance of the coefficients on the three composite corporate governance indices indicates that the average changes in them were not substantial enough to be associated with significant changes in the ROA and Q-ratio.

Overall, the positive coefficients on all three compliance corporate governance indices indicate that improvements (decreases) in the quality of firm's corporate governance are associated with similar improvements (decreases) in its financial performance. This offers empirical support to the conclusion in chapter eight. The statistically insignificant coefficients, however, suggest that the improvements (decreases) in financial performance resulting from improvements in (decreases) the quality of corporate governance are not statistically significant. This fails to offer empirical support to the conclusion in chapter eight.

With reference to the control variables in Columns 3 to 8 of Table 29, they generally show the expected signs. For example, the statistically significant negative and positive coefficient on changes in capital structure and sales growth, respectively, under the changes in ROA in Column 3 of Table 29 is consistent with theoretical predictions. Similarly, the statistically significant negative and positive coefficient on changes in firm size and capital expenditure, respectively, under the changes in the Q-ratio in Column 4 are consistent theoretical with expectations. The statistically significant coefficients on the year and industry dummies also indicate that changes in the ROA and the Q-ratio differ across different

industries and financial years. This also supports the findings from the summary descriptive statistics reported in Panels *A* and *B* of Table 27.

In brief, this section has examined whether year-on-year improvements (declines) in the quality of the sampled firms' corporate governance will be associated with similar improvements (declines) in their year-on-year reported financial performance. Generally, the results indicate that improvements (declines) in the sampled firms' corporate governance standards are associated with positive (negative), but statistically insignificant improvements (declines) in their reported financial performance. The lack of statistical significance is not empirically surprising. This is because summary descriptive statistics suggest that the year-on-year changes in the *SACGI* were not substantial enough to to be associated with significant changes in the ROA and Q-ratio. The positive coefficient support the positive coefficient reported in chapter eight. The statistically insignificant coefficient, however fails to support the statistically significant coefficient on the *SACGI* reported in chapter eight.

9.6 **CHAPTER SUMMARY**

This chapter has examined the robustness or sensitivity of the empirical results of the study. Specifically, the main aim of the chapter has been to ascertain the extent to which the results reported in chapter eight are robust or sensitive to alternative empirical and theoretical explanations, as well as estimations. In this regard, the results presented in chapter eight have been subjected to a number of robustness or sensitivity analyses.

Firstly, the *compliance-index* and *equilibrium-variable* models are re-estimated based on a lagged financial performance-corporate governance structure. The aim is to address potential endogeneity problems that may arise due to a time-lag in the financial performance and corporate governance relationship. The results based on the *compliance-index* model remain generally unchanged, that better-governed South African listed firms tend to be associated with higher financial returns than their poorly-governed counterparts.

Similarly, and consistent with the mixed results reported in chapter eight, the results of the *equilibrium-variable* model based on a lagged financial performance-corporate governance structure are conflicting. Generally, the findings from the *equilibrium-variable* model offer support to the earlier conclusion that there is either a statistically weak or no relationship between most of the eleven individual internal corporate governance structures and financial performance, when they are examined as single corporate governance mechanisms in isolation.

On a comparative basis, and consistent with the previous conclusion in chapter eight, the *compliance-index* model appears to produce consistent statistically significant and positive coefficients, as well as possesses better empirical properties than the *equilibrium-variable* model, irrespective of the financial performance proxy used.

Secondly, the presence of potential endogeneity problems among the corporate governance variables is further addressed by re-estimating the *compliance-index* model using instrumental variables (IV) and two-stage least squares (2SLS). The results based on the instrumental variable estimates suggest that there is a statistically significant and positive relationship between financial performance and corporate governance. The tenor of such a positive relationship remains unchanged whether an accounting (ROA) or a market based measure (Q-ratio) of performance is used. Generally, the findings from the instrumental estimates are consistent with the results of the *compliance-index* model based on OLS estimate presented in chapter eight.

The results based on the two-stage least squares (2SLS) indicate that there are significant interdependences among the five corporate governance mechanisms, as well as between the financial performance proxies and the corporate governance structures. Specifically, the results based on the ROA suggest that if alternative corporate governance mechanisms are allowed to co-exist, a higher *SACGI* score, a greater institutional shareholding along with a lesser block shareholding, a smaller board size and a lesser debt usage tend to be associated with higher accounting returns. Generally, allowing for the existence of potential interdependences or endogeneities among the alternative corporate governance mechanisms, the results support the previous conclusion in chapter eight that, on average, better-governed South African listed firms tend to be associated with higher accounting returns than their poorly-governed counterparts.

By contrast, results based on the Q-ratio indicate that allowing for the existence of alternative corporate governance mechanisms, the *SACGI* looses its ability to explain significant differences in the Q-ratio. Overall, the results imply that firms with insignificant block shareholding, smaller boards and lesser debt usage, but significantly greater institutional shareholding can afford to have relatively poor internal corporate governance structures without necessarily being punished by the market with lower market valuation.

Finally, the chapter examined whether year-on-year changes in the quality of the sampled firms' corporate governance are associated with similar changes in their year-on-year reported financial performance. Generally, the results indicate that improvements (declines) in

the sampled firms' corporate governance standards are associated with positive, but statistically insignificant improvements (declines) in their reported financial performance. The positive coefficient on changes in the *SACGI* supports the positive coefficient reported in chapter eight. The statistically insignificant coefficient, however fails to support the statistically significant coefficient on the *SACGI* reported in chapter eight.

The final chapter will provide the conclusions of the thesis. Specifically, it will provide a summary of results, policy implications, limitations, recommendations and potential avenues for further studies.

CHAPTER TEN

CONCLUSIONS: SUMMARY OF FINDINGS, IMPLICATIONS, LIMITATIONS, AND AVENUES FOR FUTURE RESEARCH

10. INTRODUCTION

This chapter discusses the conclusions of the thesis. It seeks to achieve five main objectives. First, it summarises the research findings. In this regard, the research findings based on the: levels of compliance with the South African Corporate Governance Index (the *SACGI*); *compliance-index* and *equilibrium-variable* models; and robustness or sensitivity analyses are summarised. Second, it discusses the policy implications of the research findings, and where applicable, makes appropriate recommendations. Third, the chapter summarises the contributions of the study. Fourth, it highlights the limitations of the study. Finally, the chapter identifies potential avenues for future research and improvements.

The rest of the chapter is organised as follows. Section 10.1 presents a summary of the research findings. Section 10.2 discusses the policy implications of the research findings, and makes recommendations. Section 10.3 briefly summarises the research contributions of the study. Section 10.4 highlights the limitations of the study. Section 10.5 identifies potential avenues for future research and improvements, while section 10.6 summarises the chapter.

10.1 SUMMARY OF RESEARCH FINDINGS

As has been discussed in chapters one, two and three, historically, South Africa's corporate governance model has predominantly been '*shareholding*' or '*Anglo-American*'. Within the '*shareholding*' corporate governance model, firms are primarily expected to advance the interests of shareholders. However, recent corporate governance reforms (i.e., the 1994 or King I Report, and the 2002 or King II Report) formally require firms to comply with a number of affirmative action and stakeholder issues, such as black economic empowerment, and employment equity, amongst others. This compels South African firms to depict some of the key features of both the '*shareholding*' and '*stakeholding*' models of corporate governance.

Arguably, this makes the South African corporate governance framework and environment unique. Critics of King II, however, suggest that it is inappropriate to formally super-impose affirmative action, social and environmental demands on a corporate governance model that predominantly has a '*shareholding*' orientation. Also, as an emerging market,

South African firms have a relatively concentrated corporate ownership, often via complex cross-shareholdings and pyramidical structures (Barr *et al*., 1995, p.18). This can potentially limit the efficiency and effectiveness of the market for corporate control and managerial labour (Haniffa and Hudaib, 2006, p.1035). Moreover, South Africa has a weak record of achieving compliance and enforcement of corporate regulations (Armstrong, 2003, p.2; IIF, 2007, p.7).

These issues together raises two critical local and international policy questions. The first important policy question is whether the current 'hybrid' corporate governance framework is appropriate for South Africa. Specifically, there is the critical local question of whether the current South African corporate governance model is sufficiently robust to effectively pursue the contrasting agenda of maximising shareholder returns and providing a meaningful protection of the interests of a larger stakeholder group (Kakabadse and Korac-Kakabadse, 2002, p.313; Spisto, 2005 p.84; Andreasson, 2009, p.1). The second crucial international policy question is whether a UK-style voluntary corporate governance regime (i.e., 'comply or explain') rather than a US-style mandatory or statutory regime (i.e., 'comply or else') is appropriate for South Africa, given the relative concentration of ownership among listed firms, as well as the poor record of achieving compliance and enforcement of corporate regulations.

It has been contended, however, that ignoring the South African context, and given that King II is predominantly *Anglo-American* with emphasis on shareholder primacy, the *a priori* theoretical expectation will be that '*better-governed*' firms should be associated with higher financial returns than their '*poorly-governed*' counterparts. This has been the central thesis underlying this study.

With no prior evidence on South Africa, it sought to empirically ascertain whether South African listed firms that complied well with King II performed financially better than those that did not. Specifically, using a sample of 100 South African listed firms from 2002 to 2006 (a total of 500 firm-year observations) and corporate governance data collected directly from annual reports, this thesis has mainly examined the relationship between internal corporate governance structures and firm financial performance. Distinct from prior studies, the corporate governance-financial performance nexus is examined by estimating two competing positive methodologies: the *compliance-index* model and the *equilibrium-variable* model. The rationale has been to ascertain whether the choice of research methodology can significantly influence research findings, and any subsequent interpretations.

In this section, the research findings of the study discussed in chapters six, seven, and eight are summarised. Specifically, *subsection* 10.1.1 will summarise the research findings based on the levels of compliance with the South African corporate governance index (the *SACGI*) that have been discussed in chapter six. Subsections 10.1.2 and 10.1.3 will offer a summary of the research findings based on the *compliance-index* and *equilibrium-variable* models reported in chapter eight, respectively. Subsection 10.1.4 will summarise the research findings based on a comparison of the research findings of the *compliance-index* and *equilibrium-variable* models presented in chapter eight, whereas subsection 10.1.5 will provide a summary of the research findings based on the robustness or sensitivity analyses that have been discussed in chapter eight. As has been outlined above, the policy implications of all the research findings presented in the next five subsections will be separately discussed in section 10.2.

10.1.1 **Findings Based on the Levels of Compliance with the SACGI**

As has been discussed in chapters four and five, the prior literature has investigated the relationship between corporate governance and firm financial performance mainly by following either the *compliance-index* model or the *equilibrium-variable* model. Briefly, the use of the *compliance-index* model often involves the construction of a broad corporate governance index that encapsulates an extensive set of corporate governance structures. The association between the compliance corporate governance index and firm financial performance is then investigated.

By contrast, the *equilibrium-variable* model usually involves examining the nexus between single corporate governance mechanisms and firm financial performance. As has also been explained in chapters four and five, and reported in chapters eight and nine, in this study both the *compliance-index* and *equilibrium-variable* models have been estimated. Before summarising the research findings based on the *compliance-index* and *equilibrium-variable* models, this subsection first summarises the levels of compliance with the South African corporate governance index (the *SACGI*) containing 50 corporate governance provisions from King II. Specifically, using a sample 100 South African listed companies from 2002 to 2006 (a total of 500 firm-year observations), this study has assessed the levels of compliance with both conventional corporate governance provisions and South African context specific affirmative action and stakeholder issues (the *SACGI*) among the sampled firms.

Generally, and consistent with prior studies, the findings that have been discussed in chapter six show that there are substantial variations in the levels of compliance with the *SACGI* among the sampled firms. At the aggregate level, the scores range from a minimum of 3 (6%) to a maximum of 49 (98%) with the average South African listed firm complying with 30 (60%) of the 50 corporate governance provisions analysed. For the individual corporate governance provisions, there are variations in the levels of compliance in 48 (96%) of the 50 corporate governance provisions investigated. Overall, an examination of the distribution of the pooled sample shows that despite the expectation that the introduction of the King Reports will speed-up convergence of corporate governance standards, there are still substantial variations in the levels of compliance with the individual corporate governance provisions among South African listed firms.

Despite the substantial variations in the levels of compliance with the *SACGI*, the findings also suggest that corporate governance standards among the sampled firms have improved over the period of examination. Specifically, the average compliance level with the *SACGI* in 2002 was 48% among the sampled firms. It increased to 58%, 63%, 65% and 68% in 2003, 2004, 2005 and 2006, respectively, an increase of 20 percentage points over the five-year sample period. As has been discussed in chapter six, these findings are in line with the results of prior studies that have analysed firms from countries that have adopted the UK-style voluntary ('comply or explain') compliance regime (e.g., Conyon 1994; Conyon and Mallin, 1997; Pellens *et al*., 2001; and Aguilera and Cuervo-Cazura, 2009, amongst others). The results of these studies generally indicate that despite their voluntary nature, corporate governance standards in firms of countries that have adopted codes of corporate governance based on the 'comply or explain' compliance regime have improved substantially.

The *SACGI* is further disaggregated on the basis of firm size and industry to ascertain whether the observed variability in the levels of compliance with the aggregate *SACGI* can be explained by firm size and industry. Consistent with the findings of prior studies (e.g., CLSA, 2000; Deutsche Bank, 2002; Bauer, 2004; Bebenroth, 2005; Werder *et* al., 2005), the analyses indicate that the observed variability in the levels of compliance with the *SACGI* can largely be explained by firm size, and moderately by industry. Specifically, and at the aggregate level, the findings suggest that the average large firm complied with 75% of the 50 corporate governance provisions in comparison with 44% by the average small firm.

A close examination of the individual provisions also shows that in 46 (92%) out of the 50 corporate governance provisions investigated, compliance levels among large firms are

significantly higher than for small firms. The results can be explained by prior theory as have been discussed in chapters five and six. First, and in line with prior studies (e.g., Shockley, 1981; Marston and Shrives, 1991; Deutsche Bank, 2002; Sori *et al*., 2006; Melvin and Valero, 2009), further analyses indicate that larger firms are more likely to be dual-listed and be audited by a big four audit firm. Also, and as theoretically expected, the findings show that the sampled firms with cross-listings to the UK and US stock markets tended to have better corporate governance standards than their non dual-listed counterparts. This is because dual-listed firms are often subjected to additional listings and corporate governance requirements compared with their non cross-listed counterparts.

In a similar vein, the results indicate that the sampled firms audited by a big four audit firm also tended to have better corporate standards than their non big-four audited counterparts. Second, compliance with corporate governance rules has cost implications that larger firms can be expected to better afford than their smaller counterparts (Lang and Lundholm, 19993; Botosan, 1997). Finally, and as has been explained in chapters five to eight, and will be explained further below, prior literature suggests that political costs, such as stringent regulation and nationalisation, are positively associated with firm size (Wattes and Zimmerman, 1978, p.115; Andreasson, 2009, p.22). This means that, on average, larger firms can be expected to disclose more than their smaller counterparts, in order to reduce potential political costs.

Similarly, and in line with prior studies discussed in chapter six (e.g., CLSA, 2000; Deutsche Bank, 2002; Black *et al*., 2006a; Henry, 2008), the results suggest that some of the observed variability in the levels of compliance with the *SACGI* can be explained by industrial groupings, but to a lesser degree when compared with the firm size classifications. Specifically, and at the aggregate level, consumer services firms complied most with the *SACGI*. By contrast, technology firms complied least with the *SACGI*.

The levels of compliance with the nine South African context specific affirmative action and stakeholder corporate governance provisions (the *Social-SACGI*) among the sampled firms were also examined. These are: board diversity on the basis of ethnicity and gender, and policies and practices with respect to black economic empowerment, employment equity, environment, ethics, HIV/Aids, and health and safety. Consistent with the findings based on the full sample, the summary descriptive statistics indicate that there is a considerable amount of variation in the levels of compliance with the social-*SACGI* among the sampled firms.

Similar to the *SACGI*, the analyses suggest that the observed variability in the levels of compliance with the social-*SACGI* could largely be explained by firm size, and moderately by industry. Finally, analyses of the trends in board diversity on the basis of ethinicity and gender show that, irrespective of the measure used, diversity among South African corporate boards has substantially improved over time. Despite the improving board diversity, however, the findings also suggest that board members from diverse backgrounds (ethnic and gender) within South African listed firms are still very small in number.

10.1.2 **Findings Based on the Compliance-Index Model**

The main hypothesis (i.e., hypothesis eight) tested for the *compliance-index* model is that there is a statistically significant and positive relationship between the South African corporate governance Index (the *SACGI*) and firm financial performance. Consistent with the results of prior studies, the findings based on the *compliance-index* model reported in chapter eight generally suggest that there is a statistically significant and positive association between the *SACGI* and firm financial performance. The positive relationship is robust to whether an accounting (i.e., return on assets – ROA) or a market based measure (i.e., Tobin's Q – Q-ratio) of financial performance is used. Therefore, hypothesis eight cannot be rejected.

The statistically significant and positive (.002) nexus between the *SACGI* and the ROA implies that, on average, better-governed South African listed firms tend to be associated with higher accounting returns than their poorly-governed counterparts. Specifically, the findings mean that a one standard deviation improvement in the average firm's internal corporate governance (the SACGI) score from 60% to 82%, may be associated with an increase in its average accounting returns (ROA) by at least 4% (22.03 x .002) from 9% to 13%, *ceteris paribus*.

As has been discussed in subsection 8.1.2.1, this evidience is generally in line with the results of prior studies (e.g., Gompers *et al.*, 2003; Shabbir and Padget, 2005; Cui *et al.*, 2008), but specifically with findings of Klapper and Love (2004). Using a cross-country sample that includes South African listed firms, Klapper and Love (2004) report a statistically significant and positive relationship between good corporate governance and the ROA. A major theoretical implication of this finding is that better-governed firms are able to improve accounting returns by reducing managerial expropriation. Also, it indicates that better-governed firms are able to raise capital at lower cost to better exploit growth opportunities that can boost long-term accounting returns.

Similarly, the significant positive (.009) association between the *SACGI* and the Q-ratio suggests that South African listed firms with better corporate governance trade at a significant valuation premium to those with poor corporate governance standards. Specifically, a one standard deviation improvement in the average firm's internal corporate governance (the *SACGI*) score from 60% to 82%, can be expeted to be associated with an increase in its average market valuation (Q-ratio) by at least 20% (22.03 x .009) from 1.49 to 1.79, all else equal.

As has also been discussed in subsection 8.1.2.2, this evidence is generally consistent with the results of prior studies (e.g., Gompers *et al*., 2003; Beiner *et al*., 2006; Black *et al*., 2006a; Henry, 2008), but specifically with the findings of Klapper and Love (2004), Durnev and Kim (2005), and Morey *et al*. (2009). Using cross-country samples that include South African listed firms, Klapper and Love (2004), Durnev and Kim (2005), and Morey *et al*. (2009) report a statistically significant and positive relationship between good corporate governance and the Q-ratio.

Theoretically, the statistically significant and positive relationship between the *SACGI* and the Q-ratio, is expected. This is because, by complying with the recommendations of good corporate practice, a firm will essentially be signalling to prospective investors that it is better-governed. With better corporate governance credentials, investors can be expected to bid-up the share price for similar ownership portions of the firm. This is because with better corporate governance they are likely to receive a greater portion of the firm's profits as opposed to being expropriated by managers.

In addition, the associations between the nine South African context specific affirmative action and stakeholder corporate governance provisions (the *Social-SACGI*), and 41 conventional corporate governance provisions (the *Economic-SACGI*), and firm financial performance are investigated. In line with the results of the *SACGI*, but contrary to theoretical expectations, the findings also suggest a statistically significant and positive relationship between the *Social-SACGI* and firm financial performance (i.e., both ROA and Q-ratio). It is theoretically expected that the inclusion of the South African context specific affirmative action and stakeholder provisions as part of the general corporate governance provisions for firms to comply by King II will impose extra costs burden on the firms (e.g., Kakabadse and Korac-Kakabadse, 2002; LSE, 2007). This implies that unlike the *SACGI*, compliance with the *Social-SACGI* would, therefore, be expected to impact negatively on the sampled firms'

financial performance. By contrast, compliance with the *Economic-SACGI* could be expected to impact positively on the sampled firms' financial performance.

Contrary to theoretical predictions, the findings suggest that compliance with the *Social-SACGI* impacts positively on the sampled firms' financial performance. Despite being contrary to the theoretical expectations, evidence that firms that comply better with the *Social-SACGI* are valued (Q-ratio) higher by investors or tend to be associated with higher accounting returns (ROA) is, however, less surprising. Within the South African context, securing and renewing profitable government and mining contracts, for instance, are normally linked to satisfying black economic empowerment and employment equity targets (e.g., Murray, 2000; Malherbe and Segal, 2003). This means that compliance with the *Social-SACGI* may be a major way by which firms can gain access to valuable resources, including securing profitable government backed black economic empowerment deals and contracts. This may facilitate growth and improve long-term financial performance.

Consistent with theoretical predictions, the results indicate that compliance with the *Economic-SACGI* impacts positively on the sampled firms' financial performance. Evidence of a positive nexus between the *Economic-SACGI* and financial performance (i.e., both ROA and Q-ratio) offers further empirical support to the results based on the *SACGI*. That is, on average, better-governed firms tend to be associated with higher financial performance than their poorly-governed counterparts.

10.1.3 **Findings Based on the Equilibrium-Variable Model**

As has been discussed in subsection 4.2.2 of chapter four and reported in subsection 8.1.1 of chapter eight, seven main hypotheses are tested for the *equilibrium-variable* model. These hypotheses relate to board diversity, board size, role or CEO duality, the percentage of non-executive directors, the frequency of board meetings, the presence of key board committees (namely, audit, nomination and remuneration), and director shareownership (including director shareownership squared and director shareownership cubed).

The first hypothesis tested is that there is a statistically significant and positive relationship between board diversity and firm financial performance (i.e., both ROA and Q-ratio). The coefficient on board diversity under the ROA is positive, but statistically insignificant. This is not consistent with the recommendations of King II that encourage diversity among South African corporate boards. This evidence also does not offer empirical support to prior studies that report a statistically significant and positive relationship between

the ROA and board diversity (e.g., Adler, 2001; Swartz and Firer, 2005). It is, however, in line with the findings of prior studies that suggest that board diversity has no significant impact on ROA (e.g., Zahra and Stanton, 1988; Shader *et al*., 1997; Rose, 2007).

By contrast, the coefficient on board diversity under the Q-ratio is negative, but similarly statistically insignificant. This is also not in line with the recommendations of King II that encourage diversity among South African corporate boards.This means that hypothesis one is not empirically supported. This finding does not support the result of Carter *et al*. (2003) that suggest a statistically significant and positive association between board diversity and the Q-ratio. It is, however, consistent with the finding of Rose (2007), which indicates that board diversity has no statistically significant association with the Q-ratio. Evidence of a statistically insignificant board diversity-financial performance nexus is less surprising. As have been discussed in chapters six and eight, the number of board members from diverse backgrounds on the boards of South African listed firms is still substantially small. This means that they may not be able to impact significantly on firm financial performance.

Also, and as have been discussed in chapters five and eight, there are differences in the associations between board diversity, as well as some of the remaining corporate governance mechanisms that will be summarised below towards the ROA and Q-ratio. These differences may be explained by variations in their respective effects, weaknesses, and strengths. For example, as a historical accounting base measure, ROA may not be able to reflect current changes in market valuation. By contrast, as a market based measure, Q-ratio reflects expected future developments that may be masked by current fluctuations in business conditions. It also offers empirical support to previous evidence, which indicates that insiders (managers – ROA) and outsiders (investors – Q-ratio) value corporate governance differently (e.g., Black *et al*., 2006a; Haniffa and Hudaib, 2006). Overall, it may justify the use of both accounting and market based measures of financial performance, allowing each measure to complement the weaknesses of the other.

The second hypothesis examined is that there is a statistically significant and positive association between board size and firm financial performance (i.e., both ROA and Q-ratio). The coefficient on board size under the ROA is negative and statistically insignificant, whereas the coefficient on board size under the Q-ratio is positive and statistically significant. The statistically insignificant negative coefficient on board size under the ROA means that hypothesis two is not supported, whilst the statistically significant positive coefficient on board size under the Q-ratio offers empirical support to hypothesis two.

Empirically, the statistically significant and positive relationship between board size and the Q-ratio offers empirical support to the results of Adams and Mehran (2005), Beiner *et al*. (2006), Henry (2008), and Mangena and Tauringana (2008). In contrast, it is not in line with the results of prior studies that suggest a statistically significant and negative association between board size and the Q-ratio (e.g., Yermack, 1996; Haniffa and Hudaib, 2006; Coles *et al*., 2008; Cheng, 2008; Guest, 2009).

Theoretically, the statistically significant and positive association between the Q-ratio and board size indicates that the market appears to perceive larger boards as more effective. This may stem from the fact that larger boards tend to offer greater access to their firms' external environment. This can reduce uncertainties and facilitates the securing of critical resources, such as finance. It also implies that the market seems to value the ability of South African corporate boards to secure more resources, which is often associated with larger boards higher than their ability to effectively advice and monitor managers that is usually associated with smaller boards. For example, and within the South African context, prior evidences suggests that larger boards are more likely to secure profitable government backed black economic empowerment contracts that may help larger firms to receive higher market valuation than their smaller counterparts.

The third hypothesis investigated is that there is a statistically significant negative relationship between role or CEO duality and firm financial performance (i.e., both ROA and Q-ratio). The findings suggest that there is a statistically significant and positive association between the ROA and CEO duality, but a statistically insignificant and negative relationship between the Q-ratio and CEO duality. This means that hypothesis three can be rejected. It does not also lend empirical support to the recommendations of King II that the roles of board chairman and CEO should be split. Empirically, this finding is different from the results of previous studies that report a statistically significant and negative relationship between ROA and role duality (e.g., Rechner and Dalton, 1991; Haniffa and Hudaib, 2006). Specifically, it does not lend empirical support to the results of Ho and Williams (2003) that document a statistically significant and negative association between CEO duality and the intellectual capital performance of 84 South African listed firms.

In contrast, the result offers empirical support to the findings of Donaldson and Davis (1991) and Boyd (1995) that there is a statistically significant and positive nexus between role duality and ROA. A major theoretical implication of the statistically significant and positive ROA-CEO duality relationship is that role duality allows a visionary and charismatic CEO the

opportunity to have a sharper focus on firm objectives without excessive board interference. By contrast, the statistically insignificant and negative association between the Q-ratio and CEO duality shows that role duality has no significant impact on the sampled firms' market value. This also does support the recommendations of King II that discourage role duality.

Empirically, this finding is in line with prior studies that report a statistically insignificant link between the Q-ratio and CEO duality (e.g., Vefeas and Theodorou, 1998; Sanda *et al*., 2005; Haniffa and Hudaib, 2006). Specifically, the finding offers further empirical support to the results of Ho and Williams *(*2003), and Mangena and Chamisa (2008) that role 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 negative coefficient, however, suggests that the market perceives CEO duality as a bad corporate governance practice. This is because role duality tends to give too much power to one person who can choose to engage in opportunistic activities.

The fourth hypothesis tested is that there is a statistically significant and positive association between the percentage of non-executive directors and firm financial performance (i.e., both ROA and Q-ratio). The findings indicate that the percentage of non-executive directors is statistically significant and negatively related to ROA, but statistically insignificant and positively associated with the Q-ratio. This implies that hypothesis four is not empirically supported. The result also contradicts the recommendations of King II that encourage a higher percentage of NEDs on South African corporate boards.

The findings are also not consistent with the results of prior South African studies of Ho and Williams (2003), and Mangena and Chamisa (2008). For example, Ho and Williams (2003) report a statistically significant and positive association between the percentage of NEDs and intellectual capital performance of 84 South African listed firms. By contrast, the result in this study offers empirical support to the findings of prior studies that document a statistically significant and negative relationship between ROA and the percentage of NEDs (e.g., Weir and Laing, 2000; Fich and Shivdasani, 2006).

Theoretically, the statistically significant and negative association between the percentage of non-executive directors and ROA supports the stewardship theory. It suggests that non-executive directors often command less knowledge about the business, and find it difficult to understand the complexities of the firm. Also, corporate boards dominated by non-executive directors tend to stifle managerial initiative and delay strategic action, which arise

from excessive managerial monitoring. This can impact negatively on a firm's ability to generate higher accounting returns.

The statistically insignificant and positive relationship between the percentage of non-executive directors and the Q-ratio means that the non-executive directors have no impact on the sampled firms' market value. This also implies that hypothesis four is not empirically supported. The result is also not consistent with the recommendations of King II that encourage a higher percentage of NEDs on South African corporate boards. Empirically, the statistically insignificant nexus between the percentage of NEDs and the Q-ratio is consistent with the results of Vefeas and Theodorou (1998), Weir and Laing (2000), and Haniffa and Hudaib (2006). The positive coefficient, however, shows that the market views the appointment of non-executive directors to corporate boards as a positive corporate governance practice. This is because the presence of non-executive directors can potentially improve the independence of a corporate board and its decisions.

The fifth hypothesis analysed is that there is a statistically significant and positive association between the frequency of board meetings and firm financial performance (i.e., both ROA and Q-ratio). The findings suggest that there is a statistically insignificant and negative relationship between the frequency of board meetings and the ROA, but a statistically insignificant and positive nexus between the frequency of board meetings and the Q-ratio.

This means that the null hypothesis that there is no statistically significant and positive relationship between the frequency of board meetings and firm financial performance cannot be rejected. It also implies that the recommendation of King II that South African corporate boards must hold a minimum of four meetings in a year is not empirically supported. Empirically, this finding is consistent with the result of El Mehdi (2007) who reports a statistically insignificant association between the frequency of board meetings and the ROA for a sample of 24 Tunisian listed firms from 2000 to 2005.

By contrast, it does not support the results of Mangena and Tauringana (2006) who document a statistically significant and positive relationship between the frequency of board meetings and the ROA in sample of 157 Zimbabwean listed firms from 2001 to 2003. Theoretically, the negative nexus between the frequency of board meetings and the ROA supports the idea that frequent board meetings are not necessarily beneficial. A higher frequency of board meetings, for example, can result in higher costs in the form of managerial time, travel expenses, refreshment, and directors' meetings fees.

The statistically insignificant and positive nexus between the frequency of board meetings and the Q-ratio indicates that hypothesis five is not empirically supported. It also implies that the recommendation of King II that South African corporate boards must hold a minimum of four meetings in a year is not empirically supported. It is also not in line with the results of prior studies that report a statistically significant and negative association between the frequency of board meetings and the Q-ratio (e.g., Vefeas 1999a; Carcello *et al*., 2002; Fich and Shivdasani, 2006).

By contrast, the positive coefficient supports the results of Karamanou and Vefeas (2005) and Mangena and Tauringana (2006) that document a positive relationship between the frequency of board meetings and the Q-ratio. Unlike the finding of this study, however, the results of Karamanou and Vefeas (2005) and Mangena and Tauringana (2006) were statistically significant. The positive, but a statistically insignificant nexus between the frequency of board meetings and the Q-ratio also indicates that even though the frequency of board meetings has no valuation implications for the sampled firms, the market perceives it as a good corporate governance practice. This is because a higher frequency of board meetings can lead to enhanced managerial monitoring.

The sixth hypothesis tested is that there is a statistically significant and positive relationship between the presence of audit, nomination and remuneration committees and firm financial performance (i.e., both ROA and Q-ratio). The findings regarding the nexus between the existence of board committees and firm financial performance are generally mixed. On the one hand, the results show that the establishment of a nomination committee is statistically significant and positively related to the ROA. This implies that hypothesis six is empirically supported. It supports the recommendation of King II for South African firms to set up nomination committees. Further, it implies that the establishment of a nomination committee helps in improving the sampled firms' accounting returns.

Empirically, it rejects the results of Bozec (2005) that suggest a statistically insignificant relationship between the ROA and the establishment of a nomination committee in a sample of 25 Canadian listed firms from 1976 to 2005. Theoretically, the establishment of a nomination committee can improve the process by which directors are appointed, as well as the independence of the board and its decisions. Arguably, this can potentially impact positively on firm financial performance by enhancing the effectiveness with which the board carries out its monitoring and advisory functions.

On the other hand, while the results suggest that the presence of audit and remuneration committees are also positively related to the ROA, neither are statistically significant. This does not support hypothesis six, as well as the recommendations of King II. Given the high adoption rate of audit and remuneration committees, their insignificance in explaining the ROA is not empirically too surprising. This is because, and as has been discussed in chapter six, less than 10% of the sampled firms do not have audit and remuneration committees, which results in less variation among the sampled firms.

Similarly, the existence of an audit committee is statistically insignificant and positively associated with the Q-ratio, whilst the establishment of nomination and remuneration committees are statistically insignificant and negatively related to the Q-ratio. This does not lend empirical support to hypothesis six and the recommendations of King II. Empirically, the findings are consistent with the results of prior studies that report a statistically insignificant relationship between board committees and the Q-ratio (e.g., Vefeas and Theodorou, 1998; Weir and Laing, 2000; Weir *et al*., 2002). Vefeas and Theodorou (1998), for example, report a statistically insignificant nexus between the presence of audit, nomination, and remuneration committees and the Q-ratio. By contrast, the finding is not in line with the results of previous studies that report statistically significant and positive or negative association between board committees and the Q-ratio (e.g., Vefeas, 1999a; Karamanous and Vefeas, 2005). The finding is also not consistent with the results of Mangena and Chamisa (2008), who report the presence of an audit committee significantly reduces the possibility of a firm being suspended from listing on the JSE in sample of 81 South African listed firms.

Generally, the evidence of no statistically significant relationship between the three board committees and the Q-ratio is empirically less surprising. As has been explained above, the adoption rate of board committees is very high (more than 90% of the sampled firms, for example, have established audit and remuneration committees), which leads to limited variation among the sampled firms. This seems to limit the ability of the three board committees to explain significant differences in the Q-ratio.

The seventh and final hypothesis examined is that there is a statistically significant and positive relationship between director shareownership and firm financial performance. To replicate the results of Morck *et al*. (1988) and McConnell and Servaes (1990) that document a statistically significant non-linear relationship between director shareownership and the Q-ratio, two new ownership variables – director ownership squared and director shareownership

cubed – are introduced. The findings show that director shareownership is statistically insignificant and negatively related to ROA, whereas director shareownership is statistically significant and negatively associated with the Q-ratio. This indicates that hypothesis seven can be rejected.

Theoretically, the statistically significant and negative relationship between the Q-ratio and director shareownership supports the entrenchment hypothesis. The hypothesis states that at high levels of shareholding, directors may hold sufficient voting power to protect themselves against any disciplinary actions from minority shareholders. This motivates managers to engage in opportunistic behaviour, including the consumption of more perquisites, which impacts negatively on firm financial performance.

Further, director shareownership squared and director shareownership cubed are positively and negatively related to ROA, respectively. However, both are statistically insignificant. Similarly, director shareownership squared and director shareownership cubed are positively and negatively associated with the Q-ratio, respectively, but both are statistically insignificant except in year 2005. The findings generally do not support the statistically significant non-monotonic relationship between director ownership and firm value reported by Morck *et al*. (1988) and McConnell and Servaes (1990). Overall, the statistically significant and negative coefficient on director ownership suggests director entrenchment with no evidence of a reversal to interest alignment even at higher levels of director ownership.

10.1.4 **Findings Based on a Comparison of the Results of the Compliance-Index and Equilibrium-Variable Models**

As have been discussed in subsections 4.2.1 and 5.2.1 of chapters four and five, respectively, a supplementary objective of this study has been to offer a methodological comparison. Specifically, the study has attempted to ascertain whether the use of the *equilibrium-variable* model or the *compliance-index* model has the potential to influence the empirical findings. This has been done by simply comparing the regression results and summary diagnostics based on the *equilibrium-variable* model to the regression results and summary diagnostics based on the *compliance-index* model.

A number of interesting findings emerge when the results based on the *compliance-index* model are compared with the results based on the *equilibrium-variable* model. First, the findings show that, regardless of the performance measure used, the coefficient on the *SACGI* is consistently positive over the entire sample period. Second, the *SACGI* is statistically

significant over the entire sample period with regard to the ROA. It is also statistically significant for the pooled sample, and in 2003 and 2006, but statistically insignificant in 2002, 2004 and 2005 with respect to the Q-ratio.

However, and even in 2002, 2003 and 2005 where the *SACGI* is statistically insignificant under the Q-ratio, the *p-values* are relatively close to becoming statistically significant. Overall, and consistent with the results of recent researchers (e.g., Gompers *et al*., 2003; Klapper and Love, 2004; Durnev and Kim, 2005; Beiner *et al*., 2006; Black *et al*., 2006a; and Morey *et al*., 2009, amongst others) who also constructed some measure of 'compliance' or 'composite' corporate governance index, the findings suggest that a firm's internal corporate governance structures significantly positively impact on its financial performance.

By contrast, and in line with previous evidence (e.g., Morck *et al*., 1988; Aggrawal and Knoeber, 1996; Weir *et al*., 2002; Haniffa and Hudaib, 2006; and Guest, 2009, amongst others), the results based on the *equilibrium-variable* model as summarised above are highly mixed. Irrespective of the financial performance proxy used, most of the corporate governance variables are statistically insignificant, and even where they are found to be significant, the sign of the coefficients are not consistent across the two performance measures used. Overall, and consistent with past evidence, the results based on the *equilibrium-variable* model indicate either a statistically weak or insignificant relationship between the selected single internal corporate governance structures and firm financial performance.

Similar conclusions are drawn when the summary regression diagnostics based on the *compliance-index* model are compared with the summary regression diagnostics based on the *equilibrium-variable* model. First, computed Cook's distances, tolerance statistics, condition indices, eigenvalues, variance proportions, VIF, studentised residuals and normal distribution plots, indicate that the findings based on the *compliance-index* model generally possess better normal distributional properties than the *equilibrium-variable* model.

Second, and in line with the better normal distributional properties shown by the *compliance-index* model, regardless of the performance measure used, they indicate that the *compliance-index* model possesses better summary regression diagnostics than the *equilibrium-variable* model. For example, results based on the *compliance-index* model generally show better adjusted R^2, *F-values*, standard errors and Durbin-Watson statistics compared with the results based on the *equilibrium-variable* model. Overall, and irrespective of the summary regression diagnostics used, on average, the findings based on the

compliance-index model possess better empirical properties than the findings based on the *equilibrium-variable* model.

This evidence has important methodological implications for future research. First, it implies that methodological choice can potentially influence the research findings. The second implication is that despite its costly and labour intensive nature, on average, it may be value relevant to construct some measure of a 'compliance or composite' corporate governance index when examining the corporate governance-performance nexus rather than to use single corporate governance mechanisms in isolation. A major explanation is that because the construction of composite or compliance-indices involves the use of several corporate governance variables, it is better able to capture actual qualitative differences in corporate governance disclosures across firms. This appears to make compliance or composite corporate governance indices more likely to achieve better variation in the quality of corporate governance across the sampled firms with higher explanatory power than using single corporate governance variables in isolation.

10.1.5 **Findings Based on the Robustness/Sensitivity Analyses**

As has been discussed in chapter five and reported in chapter nine, four main robustness or sensitivity analyses were carried out to address potential endogeneity problems. The main objective of the sensitivity or robustness analyses has been to ascertain the extent to which the results reported in chapter eight are robust or sensitive to alternative empirical and theoretical explanations, as well as estimations. These analyses include estimating: a lagged financial performance-corporate governance structure; an instrumental variable model; a two-stage least squares model; and a changes model.

Firstly, the *compliance-index* and *equilibrium-variable* models are re-estimated based on a lagged financial performance-corporate governance structure. The aim is to address potential endogeneity problems that may arise due to a time-lag in the financial performance and corporate governance nexus. On average, the results based on the *compliance-index* model remain essentially the same as those reported in chapter eight that better-governed South African listed firms tend to be associated with higher financial performance than their poorly-governed counterparts.

Similarly, and in line with the mixed results reported in chapter eight, the results of the *equilibrium-variable* model based on a lagged financial performance-corporate governance structure are conflicting. The findings from the *equilibrium-variable* model generally offer

support to the earlier conclusion that there is either a statistically weak or no relationship between most of the eleven[92] individual internal corporate governance structures and financial performance, when they are examined as single corporate governance mechanisms in isolation.

Secondly, the presence of potential endogeneity problems among the corporate governance variables is further addressed by re-estimating the *compliance-index* model using instrumental variables (IV) and two-stage least squares (2SLS). The results based on the instrumental variable estimates suggest that there is a statistically significant and positive relationship between financial performance and corporate governance. The tenor of such a statistically significant and positive relationship remains mainly unchanged whether an accounting (ROA) or a market based measure (Q-ratio) of financial performance is used. The main implication of this finding is that the results of the *compliance-index* model based on the OLS estimates presented in chapter eight are robust to the presence of endogenity.

The results based on the two-stage least squares (2SLS) indicate that there are statistically significant interdependences among the five[93] alternative corporate governance mechanisms, as well as between the financial performance proxies and the corporate governance structures. Specifically, the results based on the ROA suggest that if alternative corporate governance mechanisms are allowed to co-exist, then a higher *SACGI* score, a greater institutional shareholding along with a lesser block shareholding, a smaller board size, and a lesser debt usage are associated with higher accounting returns. Generally, allowing for the existence of potential interdependences or endogeneities among the alternative corporate governance mechanisms, the results support the conclusion in chapter eight that, on average, better-governed South African listed sample firms tend to be associated with higher accounting returns than their poorly-governed counterparts.

By contrast, results based on the Q-ratio indicate that allowing for the existence of alternative corporate governance mechanisms, the *SACGI* looses its ability to explain significant differences in the Q-ratio. Overall, the findings imply that firms with insignificant block shareholding, smaller boards, and lesser debt usage, but significantly greater institutional shareholding can afford to have relatively poor internal corporate governance structures without necessarily being punished by the market with lower market valuation. This

[92]The eleven internal corporate governance mechanisms are: board diversity, board size, role or CEO duality, the percentage of non-executive directors, the frequency of board meetings, the presence of audit, nomination, and remuneration committees, director shareownership, director shareownership squared, and director ownership cubed.

[93]The five alternative corporate governance mechanisms are: the South African Corporate Governance Index (the *SACGI*), leverage, block shareownership, institutional shareownership, and board size.

appears to suggest that alternative corporate governance mechanisms can interact or can be combined to produce similar financial performance outcomes.

For example, firms with significant institutional or block shareholding can afford to have relatively poor internal corporate governance practices, such as having less non-executive directors. The presence of significant block or institutional shareholders, for instance, could arguably carry out the function of monitoring and advising of managers that non-executive directors would have been expected to perform. This may result in similar financial performance outcomes as the monitoring that would have been carried out by non-executive directors.

Finally, the robustness or sensitivity analyses examined whether year-on-year changes in the quality of the sampled firms' corporate governance scores result in similar changes in their year-on-year reported financial performance. Generally, the results indicate that increases (decrease) in the sampled firms' corporate governance standards are associated with positive, but statistically insignificant increase (decrease) in their reported financial performance. The positive coefficient on changes in the *SACGI* supports the positive coefficient reported in chapter eight. The statistically insignificant coefficient, however, fails to support the statistically significant coefficient on the *SACGI* reported in chapter eight.

The next section will discuss the policy implications of the research findings summarised above. Specifically, subsection 10.2.1 will discuss the policy implications of the levels of compliance with the *SACGI*. Subsection 10.2.2 will examine the policy implications of the research findings based on the *compliance-index* model, whereas subsection 10.2.3 will present the policy implications of the research findings based on the *equilibrium-variable* model. Also, and where applicable, recommendations expected to bring about improvements will be made.

10.2 **POLICY IMPLICATIONS OF THE RESEARCH FINDINGS AND RECOMMENDATIONS**

10.2.1 **Compliance with the *SACGI*, Policy Implications and Recommendations**

Several implications can be drawn from the level of compliance with the *SACGI*. First, analyses of the levels of compliance with the SACGI indicate that corporate governance standards have generally improved over the period of examination. This implies that efforts by the various stakeholders, notably the Institute of Directors (IoD) of South Africa, the JSE Ltd,

and the Financial Services Board (FSB), amongst others, at improving corporate governance standards among South African listed firms are at least beginning to yield good outcomes.

Specifically, and as summarised above, the findings indicate that the introduction of the King Reports (King I, 1994 and King II, 2002) alongside the Companies Act, 1973, the JSE's Listings Rules, and the Insider Trading Act, 1998, have helped in substantially improving corporate governance practices among South African listed firms. The evidence of improving corporate governance standards among listed firms also implies that, contrary to expectations, the UK-style voluntary compliance regime (i.e., 'comply or explain') appears to be working to some extent, and thus may be appropriate for South African listed firms[94].

As have been discussed in chapter six and summarised above, this conclusion is very consistent with the conclusions of prior studies that have examined corporate governance standards in firms of countries that have adopted the UK-style voluntary compliance regime (e.g., Conyon, 1993; Conyon and Mallin, 1997; Werder *et al*., 2005; Aguilera and Cuervo-Cazurra, 2009; Filatotchev and Boyd, 2009). Specifically, and in reviewing prior studies that have examined corporate governance standards in firms of countries that have adopted the 'comply or explain' regime, Aguilera and Cuervo-Cazurra (2009, p.376) concludes that "*Despite the criticisms that the codes' voluntary nature limits their ability to improve governance practices, codes of good governance appear to have generally improved the governance of countries that have adopted them, although there is the need for additional reforms"*.

A major feature of the UK-style voluntary compliance regime is that it encourages codes of good corporate governance to be appended to general listings rules for listed firms to comply with. Arguably, and in effect, this feature makes the UK-style codes of corporate governance largely mandatory for listed firms. They are, however, considered to be voluntary because: (1) their provisions are not normally enforceable in the law courts; (2) the provisions can only possibly become mandatory for listed firms; and (3) listed or non-listed firms may not necessarily be punished for not complying with a particular provision if they are able to offer a reasonable explanation. This may serve as a major explanation for the general evidence of encouraging levels of compliance among listed firms that have been found for South Africa

[94]It is acknowledged that this conclusion is only applicable to South African listed firms. Since the study examined only listed firms, it could not ascertain whether non-listed or private companies in South Africa have also voluntarily complied with the provisions of King II or that corporate governance standards in non-listed firms have similarly improved or are improving since the introduction of King II.

and also for the findings of prior studies on other countries with similar voluntary compliance regimes.

For example, appending the King Code to the JSE's Listings Rules seems to have enhanced compliance, especially among listed firms. This is because non-compliance by listed firms could result in severe punishments. These include the possibility of suspension and de-listing from the stock exchange, thereby making the market the primary compliance and enforcement 'officer' in a 'comply or explain' corporate governance regime (e.g., Malherbe and Segal, 2003; Armstrong *et al*., 2006; Mangena and Chamisa, 2008).

Second, and despite the improving corporate governance standards, however, the findings also indicate that there are still substantial differences in corporate practices among the sampled firms. A further examination of the levels of compliance suggests that the observed variability in corporate governance standards among the sampled firms can mainly be explained by firm size, and moderately by industry. This is theoretically expected because compliance with corporate governance provisions is costly both in terms of time and money, which larger firms can be expected to better afford compared with their smaller counterparts.

Also, it can be argued that governance needs are likely to differ between smaller and larger firms. As has been discussed in chapters five and six, prior literature suggests, for instance, that agency problems tend to be greater in larger firms compared to smaller firms. This implies that there should be some level of judgement and flexibility in the applicability of the provisions of King II to avoid excessive monitoring and redundant costs to smaller firms.

In the case of the UK's 2006 Combined Code, for example, some of the corporate governance provisions are explicitly stated to be inapplicable to smaller and newly listed firms (i.e., firms below the FTSE 350) (Combined Code, 2006, para. 6). For instance, the requirement that half of the board should be independent non-executive directors is relaxed for smaller firms (Combined Code, 2006, para. A.3.2). Smaller firms are allowed to have only two independent non-executive directors. Similarly, smaller firms are exempted from the requirement to establish audit and remuneration committees with memberships of at least three independent non-executive directors (Combined Code, 2006, para. B.2.1, C.3.1). Smaller firms can establish audit and remuneration committees with memberships of only two independent non-executive directors.

Similar judgement and flexibilities can be incorporated into the on-going review of King II ('King III') for smaller firms (for instance, firms below the top 100 listed firms on the JSE Ltd). For example, and given that South Africa is generally classified as an emerging

market with relatively high ownership concentration (for example, and as has been discussed in chapter seven, block ownership ranges from 7% to 99% with an average of 60%), it may not be relevant for smaller firms to have the same internal corporate governance structures as larger firms. The findings (see Table 24 in chapter nine) show that block shareholding, for instance, is statistically significant and negatively associated with firm size and the *SACGI*.

One implication of this finding is that governance needs among the sampled firms appear to differ on the basis of ownership and firm size. This seems to suggest that there may be the need for some level of judgement and flexibility in the applicability of the governance provisions of the forthcoming 'King III', especially for smaller firms. Arguably, this may help smaller firms to meet their governance needs and also avoid incurring excessive costs. Based on the evidence that the observed variability in compliance with the provisions of King II or governance standards can largely be explained by size, it may arguably not be relevant for a smaller firm[95] with a board size of three directors, for example, to establish a separate nomination committee or to have a majority of independent non-executive directors, to mention but a few.

Third, the findings indicate that firms that are cross-listed to the UK and US stock markets tend to have better corporate governance standards than do firms only listed on the JSE. This is consistent with theory because reputable UK and US stock markets, such as the London and New York Stock Exchanges, often maintain more rigorous corporate governance requirements. This means that South African firms that list their shares on those stock markets are likely to be compelled to meet higher corporate governance standards.

This implies that the JSE may need to further upgrade or enhance its listings rules to bring them up-to-date with international listings standards, especially to match those of the UK and US stock markets as an important part of the general efforts at improving corporate governance standards in South African listed firms. This may arguably help meet the listings needs of its larger firms in particular, which may reduce loss of trade or business to the JSE and also deepen the market.

Fourth, the low or zero compliance with some of the corporate governance provisions suggests that they may be either inappropriate within the South African context or is an indication of weak compliance and enforcement. For example, the zero compliance with the

[95]As has been summarised above, the robustness analysis conducted in chapter nine indicate that firms can afford to have relatively poor internal corporate governance practices, such as having less independent non-executive directors, if they have stronger alternative governance mechanisms, like a significant block or institutional shareholding, and still able to be associated with similar higher financial performance outcomes like their relatively better-governed counterparts.

requirement for firms to contribute to development of financial journalism indicates that it may be inappropriate within the South African corporate environment. South Africa, for example, appears to already possess a well-developed free and vibrant financial press such that there may be no need for firms to spend additional resources to help develop financial journalism (King Report, 2002, pp.162-163).

In contrast, the low levels of compliance with some of the corporate governance provisions regardless of firm size, such as the requirement to: have independent board chairpersons; appraise the chairperson and CEO performance; and establish a nomination committee; amongst others, implies that enforcement of these provisions might have been weak. Given that some of these provisions are also critical in achieving board *independence, transparency, responsibility* and *accountability*, the JSE Ltd may further strengthen its monitoring of the levels of compliance among listed firms. The JSE may, for example, set-up a special '*compliance and enforcement*' committee to regularly monitor the levels of compliance with the governance provisions of the King Code among listed firms.

As has been discussed in chapters seven and nine (see Tables 12 and 24 to 26), the findings show that institutional shareholding significantly improves compliance with the provisions of King II or improves corporate governance standards. A major implication of this evidence appears to be that greater shareholder activism, especially by institutional investors (both local and foreign), as well as granting external auditors greater monitoring powers may also help in improving compliance with the provisions. The JSE may also encourage greater media and public scrutiny by making available to the general public official corporate filings and documentations. For example, as a standard practice by other stock exchanges, the JSE may publish interim and annual reports filed by listed firms on its official website to facilitate greater public access and scrutiny.

Similarly, and based on the evidence of poor compliance with some of the provisions of King II as discussed above, effective co-operation and co-ordination among all the corporate and financial regulatory bodies, such as the Department of Trade and Industry, the Financial Services Board, the South African Reserve-Bank, and the JSE Ltd may enhance monitoring and improve compliance. Further, and in line with international developments, all listed firms may be encouraged to set-up official websites to increase online-reporting to improve transparency. Currently, only a small number of listed firms have official website for online-reporting.

Finally, the findings suggest that the levels of compliance with the South African context specific affirmative action and stakeholders corporate governance provisions (the *Social-SACGI*) are relatively high among the sampled firms. Specifically, and for example, the average sampled firm complied with 60% of the 50 corporate governance provisions investigated (the *SACGI*), while the average sampled firm complied with 67% of the 9 South African context affirmative action and stakeholder corporate governance provisions (the *Social-SACGI*).

Compliance with the individual affirmative action and stakeholder provisions, including board diversity has generally improved substantially over the period of examination. This is contrary to theoretical expectations and the suggestions of critics of King II that because compliance with these social provisions imposes extra costs, firms will not *voluntarily* comply with them unless they are backed by legislation or the corporate governance structure is fundamentally changed from a '*shareholding*' to '*stakeholding*' one.

Apart from being appended to the JSE's Listings Rules, the relatively high levels of compliance with the affirmative action and stakeholder provisions observed among the sampled firms in particular may be explained by political costs and resource dependence theories. Political costs theory suggests that the political system has the power (i.e., through taxation, regulation, nationalisation, expropriations, and break-ups) to redistribute wealth between various societal groups (Watts and Zimmerman, 1978, p.115; Andreasson, 2009, p.22). Corporations, and especially large companies, are particularly susceptible to wealth transfers.

Therefore, firms will voluntarily comply with provisions if it will lead to an improvement in the relationships with governments and the public sector. This will not only help to decrease political costs, but also offer greater access to resources (resource dependence), such as subsidies, tax-rebates, and government contracts, amongst others. Within the South African context, compliance with the *Social-SACGI* may reduce the potential political cost of stringent legislation being introduced. More importantly, and as has been explained above, compliance with the *Social-SACGI* may be a major way by which access to valuable resources, such as profitable black economic empowerment deals, mining, and government contracts may be gained. This may also explain the encouraging levels of compliance with the *Social-SACGI*.

Despite the improving levels of compliance with the affirmative action and stakeholder provisions, there are still room for improvements. As will be recommended further below, the

monitoring of the levels of compliance with the social or affirmative action and stakeholder provisions may need to be strengthened to encourage meaningful compliance. In this case, the proposed '*compliance and enforcement*' committee to be set-up by the JSE to specifically monitor compliance levels among listed firms and make appropriate recommendations to the JSE board for improvement may be useful.

10.2.2 **The Compliance-Index Model, Policy Implications and Recommendations**

The findings generally suggest that, irrespective of the financial performance measure used (i.e., whether an accounting measure – ROA or a market measure – Q-ratio), there is a statistically significant and positive relationship between the *SACGI* and firm financial performance. This implies that, on average, better-governed South African listed firms tend to be associated with higher financial returns than their poorly-governed counterparts. Similarly, and contrary to theoretical expectations, the findings also indicate that compliance with the *Social-SACGI* impact positively on the financial performance of South African listed firms.

These findings have major implications for the on-going policy debate in South Africa. First, and as has been explained above, there is a serious policy debate as to whether the current 'hybrid' corporate governance model in which substantial '*stakeholder*' demands are super-imposed on a predominantly '*shareholding*' structure is appropriate for South Africa. The second important policy debate is that with a relatively concentrated ownership and a weak record of enforcement, there is a question of whether a UK-style voluntary corporate governance regime (i.e., 'comply or explain') rather than a US-style mandatory or statutory regime (i.e., 'comply or else') is appropriate for South Africa.

The positive relationship between the *SACGI* and firm financial performance suggests that South African listed firms are still able to deliver significant financial value to shareholders after accounting for the costs of complying with affirmative action and stakeholder provisions. Consistent with prior studies, this implies that corporate governance is an important determinant of firm financial performance in South Africa. The significant positive associations between the Q-ratio and the *SACGI*, and between the ROA and the *SACGI*, indicate that good corporate governance is not only rewarded by investors with a higher valuation multiple, but can also impact positively on the sampled firms' accounting returns. This is presumably because good corporate governance can enhance monitoring and reduce managerial expropriation.

As an emerging market, good corporate governance practices are particularly important as this may not only help reduce corporate failures, but may also help companies to attract significant capital inflows or foreign direct investments (FDI). This may facilitate faster economic growth and development in South Africa. In this respect, efforts by the Institute of Directors (IoD) of South Africa, the King Committee, the JSE, and the Financial Services Board (FSB), amongst other stakeholders, at improving governance standards in South African companies, may be seen as a step in the right direction.

The significant positive relationship between the *Social-SACGI* and firm financial performance implies that South African listed firms may need to pay serious attention to complying with the affirmative action and stakeholder provisions and in preparing the integrated sustainability report. This is because within the South African context, compliance with the affirmative action and stakeholder corporate governance provisions appears to be a major way by which access to valuable resources may be gained to facilitate growth and improve long-term accounting returns. This may also be translated into higher share price by the market, and thereby resulting in higher market valuation.

From shareholders' perspective, the findings also imply that the current 'hybrid' corporate governance model seems to be appropriate for South Africa, and that there may be no serious need for a radical change. Similarly, and as has been discussed above, the findings suggest that compliance levels with good corporate governance practices have generally improved substantially since the King Reports were introduced. This also implies that the UK-style voluntary corporate governance framework appears to be working to some extent in South Africa, and that there may be no urgent need to effect fundamental changes.

Despite evidence that South African listed companies are positively embracing corporate governance reforms, the significant variation observed in the levels of compliance among the sampled firms indicates that there are still substantial room for improvements. In particular, based on the evidence that compliance with the South African context specific affirmative action and stakeholder provisions help to significantly improve financial performance, there may be the need for South Africa to further strengthen its current 'hybrid' corporate governance model. Specifically, there are several ways by which the current 'hybrid' corporate governance framework may be strengthened for shareholders, and made more relevant to the South African corporate context that may be incorporated into the forthcoming 'King III'.

First, the integrated sustainability reporting (stakeholder issues reporting) may be renewed and strengthened to clear lingering scepticisms among civil society (i.e., various stakeholders and general public) as to the true intentions and practices of listed firms. To achieve effective and meaningful contribution to the sustainability of local communities and other identified legitimate stakeholders, the current integrated sustainability report may be made to form part of the annual financial statement and report.

This may mean that a typical financial report may be made up of: (1) a financial statement (profit and loss accounts); (2) a balance sheet; and (3) an integrated sustainability report. Like the financial statement and balance sheet, the integrated sustainability report may be both backward- and forward-looking in terms of the information it provides. That is, the companies may in the least be required to record in both quantitative and qualitative terms the contribution that they have made towards sustaining their identified stakeholders in the previous year, current year, and what they plan to do in the next financial year.

In terms of the content of the integrated report, it may be rich enough to state how a firm has both positively and negatively affected the social, economic and environmental life of its identified stakeholders, especially the local community within which it operated in the financial year under review. In addition, the forward-looking part of the integrated report may record how the company intends to improve on the positive impacts and minimise the negative aspects that affected the social, economic and environmental life of its identified stakeholders, including the local community within which it operates.

This form of integrated sustainability reporting may arguably offer several advantages over the current method of integrated sustainability reporting recommended by King II. First, it may imply that instead of being a mere ‘add-on’ (as has been observed from reading the annual reports) as economic, social and environmental information in the annual report currently, the integrated sustainability report may be seen as truly embedded in the activities of listed firms. Secondly, by formally becoming part of the financial report, the integrated sustainability may fall directly under the remit of the external auditor. The external auditor may officially be required to directly audit all aspects of the report and to pass his/her ‘true and fair’ view as to the veracity or otherwise of statements or figures provided in the integrated sustainability report. This may help improve confidence in the integrated sustainability report and reduce public scepticism.

Thirdly, requiring firms to provide sustainability information on previous year’s, current year’s and next year’s basis may arguably result in a better and meaningful compliance

with stakeholder provisions. This is because it may prevent companies from being vague or repeating the same sustainability contribution in different financial years. Finally, making the integrated sustainability report part of the financial report may also not have substantial additional costs implications (some amount of increase in auditing fees, however, may be expected) as it may be similar to the current sustainability report. It is expected to only elevate its importance so that greater care and priority may be placed on its preparation. This may make the integrated sustainability report more valuable or useful to potential investors and other stakeholders.

The second major way by which the 'hybrid' corporate governance framework may be improved is to discourage the incidence of concentrated ownerships and reduce the low levels of compliance with some of the provisions of King II as has been discussed above. This is because diffused or dispersed ownership enhances the effectiveness of the managerial labour and corporate control markets (Haniffa and Hudaib, 2006, p.1035). However, and as have been explained in chapters one, two and three, prior literature suggests that effective and efficient market for corporate control can improve voluntary compliance as poorly-governed or performing firms can easily be acquired by their better-governed or performing counterparts. In this regard, recent efforts by the JSE at reducing concentrated ownerships and cross-shareholdings via complex pyramidical structures, such as the introduction of more rigorous listing rules (in 1995, 2000, 2003, 2005 and 2007) and the de-listing of pyramids may be seen as a step in the right direction. It may help improve voluntary compliance and enforcement with good corporate governance practices among South African listed firms.

Finally, and as has been discussed above, another major way by which the 'hybrid' corporate governance model may be improved is to strengthen the current hybrid regulatory structures. Statutory corporate laws, such as the Companies Act 1973 and Insider Trading Act 1998 may support the voluntary corporate rules, including the King Code and the JSE Listing Rules. This may also enhance compliance and enforcement. As has been recommended above, these suggestions may be incorporated into the provisions of the forthcoming 'King III'.

10.2.3 **The Equilibrium-Variable Model, Policy Implications and Recommendations**

There are several implications of the findings based on the *equilibrium-variable* model. First, the findings suggest that regardless of the firm financial performance measure used, board diversity has no statistically significant impact on firm financial performance in South Africa. This does not lend support to the recommendations of King II and the general efforts

in South Africa to diversify corporate boards. As has been explained above, this is empirically less surprising given the small number of women and non-whites that are currently on South African corporate boards. For example, the average firm in the sample with approximately a mean board size of 10 has only one non-white or female member.

The small number of women and non-whites on corporate boards implies that women and non-white board appointments may be made for symbolic reasons or as a form of token rather than for their contribution to the decision-making process in the boardroom. It may also be possible that due to the negative lingering legacies of Apartheid, board members from diverse backgrounds, especially non-whites, tend to lack the necessary qualifications, skills and experience to contribute effectively to boardroom decision-making.

This appears to suggest that board diversity may need to be meaningfully improved before it can be expected to impact positively on the sampled firms' financial performance. This may be done by significantly increasing the number of board members from diverse backgrounds. Additionally, companies may conduct special training, education and development programmes for new board members from diverse backgrounds with limited or no board experience. This may facilitate effective contribution of diverse board members by making them better aware of their rights and responsibilities. In this regard, the Institute of Directors (IoD) of South Africa may be of immense help by regularly conducting training workshops and conferences for existing and new members.

Second, the findings indicate that market returns (Q-ratio) are significantly higher if a firm has a larger board, but this is not reflected in any significant measure in its accounting returns (ROA). As summarised above, the significant positive association between board size and the Q-ratio is contrary to much of the UK and US evidence, which report a significant negative relationship between board size and the Q-ratio. This appears to imply that unlike the UK and US context, 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 than the capacity of the board to effectively monitor and advise managers that is usually associated with smaller boards.

Another implication seems to be that the valuation consequences of board size differ across firms and performance measures. In this regard, the decision by King II not to prescribe an 'ideal' (i.e., '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.

It may also imply that the choice of a performance measure has important implications for understanding the effect of corporate governance structures on financial performance. As have been explained above, this seems to suggest that insiders (managers) and outsiders (investors) differ in their valuation of corporate governance. It may also reflect differences in weaknesses and strengths of market and accounting based measures of performance. The overall implication appears to be that for robust research results, future researchers may need to use both accounting and market based performance proxies rather than a single financial performance measure.

Third, the findings indicate that firms that combine the roles of board chairman and CEO tend to be associated with higher accounting returns than their counterparts that split the roles. However, it has no significant impact on market valuation even though role or CEO duality is generally considered by the market as a negative corporate governance practice. This appears to imply that the policy of King II and the JSE's Listing Rules for South African firms to follow Cadbury-style suggestion to split the two roles may not be appropriate. Within the South African context, and especially for small firms, CEO duality appears to allow a visionary and charismatic CEO the opportunity to have a sharper focus on firm objectives without excessive board interference.

Fourth, the findings indicate that boards with a higher percentage of non-executive directors tend to be associated with lower accounting returns. Further, even though having more non-executive directors on the board is perceived positively by the market, it has no significant impact on market valuation. This seems to indicate that the Cadbury-style recommendation of King II and the JSE's Listing Rules that South African boards should comprise of a majority of non-executive directors may not necessarily be applicable in South Africa.

One reason may be that as a developing country, non-executive directors, especially those from diverse backgrounds, may lack the necessary qualifications, knowledge and experience to subject managerial decisions to proper scrutiny. Organising regular training and development workshops for existing and new non-executive directors to educate them about their rights and responsibilities may be a step in the right direction.

Fifth, the findings suggest that the frequency of board meetings has no statistically significant impact on firm financial performance, regardless of the measure used. This appears to imply that the suggestion of King II that every board must at least meet four times in a year may not have any significant positive financial effect. Since firms may differ in the challenges

and problems that they face, it may be appropriate to allow for judgement and flexibility in the frequency of board meetings. For example, while it may be valuable for a board to meet regularly in a period of crisis, such as when a firm is facing a hostile take-over bid, there may be no need for a board to meet frequently if such problems are non-existent. Judgement and Flexibility may allow corporate boards to meet in response to specific needs and challenges.

Sixth, the findings are mixed when it comes to board subcommittees. The findings indicate that firms that have established a nomination committee tend to be associated with higher accounting returns. By contrast, the findings suggest that firms with audit and remuneration committees have no impact on accounting returns. Further, the market seems not to put any significant value on whether firms that have established any of three board committees: audit, nomination, and remuneration. This generally implies that the Cadbury-style suggestion of King II and the JSE's Listing Rules that South African listed firms should establish audit, nomination, and remuneration committees may not be applicable.

As has been argued above, firms may differ in terms of size, agency problems, and thus governance needs. While an independent nomination committee may be relevant for a larger firm, it may be argued that a smaller firm of three directors may not necessarily need to have an independent nomination committee. As has been suggested above, the on-going review of King II may incorporate such judgement and flexibilities into its recommendations, especially for smaller firms.

The seventh and final finding indicates that the market values firms with higher director shareownership significantly lower, but higher director ownership appears to have no significant impact on accounting returns. This seems to imply that higher director shareownership tend to be associated with director entrenchment and expropriation to the disadvantage of minority shareholders. In this regard, and as has been discussed above, the on-going attempts by the JSE to encourage diffused ownerships of listed firms may be seen as a positive development.

The next section will summarise the contributions of the study to the extant corporate governance literature.

10.3 **RESEARCH CONTRIBUTION**

As has already been discussed in chapters one and four, prior cross-country studies whose samples include some South African listed firms make use of corporate governance

ratings based purely on analysts' perceptions rather than a direct examination of company 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, p.210). The Credit Lyonnais Securities Asia (CLSA) 2000 corporate governance rankings that has mainly been used by prior studies, for example, includes only nine of the biggest South African listed firms. Arguably, this makes the sample used by prior studies less representative, and thus limits the generalisation of their findings for South Africa. Similarly, the extant literature suggests that corporate governance structures and systems vary across different countries (West, 2006, p.435, 2009, p.11; Andreasson, 2009, p.22). However, and as has been discussed in chapters two, four and five, subjective analysts' corporate governance rankings are standardised such that they are unable to reflect institutional, cultural and contextual differences in corporate governance structures across different countries.

This study makes several new contributions, as well as extensions to the extant corporate governance literature. First, using corporate governance data collected directly from company annual reports, the study offers for the first time direct evidence on the relationship between internal corporate governance structures and firm financial performance in South Africa. As has already been explained, the sample is constructed in such a way that there is a balance between large and small firms, which arguably enhances the generalisation of the findings. Unlike prior studies, the compliance-index (the *SACGI*) used incorporates conventional, as well as affirmative action and stakeholder corporate governance provisions that are unique to the South African context. Consistent with the results of prior studies (e.g., Gompers *et al*., 2003; Klapper and Love, 2004; Durnev and Kim, 2005; Beiner *et al*., 2006; Black *et al*., 2006a; and Morey *et al*., 2009, amongst others), the findings indicate that there is a statistically significant relationship between the quality of a firm's corporate governance and financial performance.

Second, it offers for the first time evidence on the economic consequences of complying with affirmative action and stakeholder corporate governance provisions for South African listed firms. Contrary to theoretical expectations, the findings suggest that compliance with the *Social-SACGI* impact positively on financial returns of South African listed firms. Third, the Institute of International Finance (IIF) 2007 report on Corporate Governance in South Africa suggests that even though the King Code is voluntary, no study has been done to ascertain the levels of compliance among listed firms. Specifically, it states "…*However, to date, no study has been conducted to assess the level of compliance with corporate*

governance-related requirements among listed companies or to verify the reasons for non-compliance", (IIF, 2007, p.1). Malherbe and Segal (2003, p.193) have also expressed similar concerns.

This study fills this gap in the existing literature by offering for the first time direct evidence on the levels of compliance with the corporate governance provisions recommended by King II among South African listed firms. Specifically, it shows that while compliance with the recommendations of King II has generally improved, substantial variations in governance standards still exist among South African listed firms. These differences, however, can largely be explained by size, and moderately by industry.

Fourth, the study makes for the first time a comparison of findings based on estimating the *compliance-index* model and the *equilibrium-variable* model. Generally, it shows that methodological choice can potentially influence research findings with important implications for future research. Finally, and unlike most prior studies, problems that the potential presence of endogeneity may cause have been comprehensively addressed. These include estimating: a lagged corporate governance-financial performance structure; an instrumental variable; a two-stage least squares; and a changes model. This has arguably improved the reliability of the findings.

The next section will summarise the limitations of the study to serve as a guide for any interpretations of the research findings.

10.4 **RESEARCH LIMITATIONS**

While the research findings are important, like any other empirical research, it may suffer from several limitations which need to be acknowledged. Most of these potential limitations have already been discussed in detail in chapter five. First, there may be problems with the sample selection procedure and size. The sample size of 100 listed firms is relatively small. As has been explained in subsection of 5.1.3 of chapter five, however, the 100 sampled firms were larger compared with the samples of prior South African studies (e.g., Firer and Meth, 1986; Ho and Williams, 2003; April *et al*., 2003; Mangena and Chamisa, 2008). For example, April *et al.* (2003) received only 20 annual reports for examining intellectual capital disclosures among South African mining firms. Also, in investigating corporate governance and incidences of listing suspension by the JSE, Mangena and Chamisa (2008) obtained data on 81 out of a possible 538 suspended firms identified over the period 1999-2005.

The five year period also seems to be short. This is, however, longer than most of the prior evidence, which is based on one year cross-sectional samples (e.g., Klapper and Love, 2004; Durnev and Kim, 2005; Beiner *et al*., 2006; Black *et al*., 2006a). Also, the final 100 stratified sampled firms, which generate a total of 500 firm-year observations, form a significant percentage of the total possible sample, as well as the JSE population. It constitutes approximately 60% and 34% of the useable final sample of 169 and the possible JSE sample of 291 firms, respectively, which statistical sampling (central limit theorem) theory suggests is a sufficiently large sample (Whatsham, and Parramore, 1997, pp.136-140; Anderson *et al*., 2007, pp.239-241).

Further, and for practical considerations, the sample was restricted to 100 companies. In particular, the corporate governance variables were manually extracted, which is a highly labour-intensive activity (Hussainey *et al*., 2003, p.276; Beattie *et al*., 2004, pp.232-233). As a result, practical limitations of time, effort and finance meant that the sample had to be reduced to a number that is statistically large enough to make a significant contribution, while at the same time ensuring that the study is completed within the scheduled time-frame of a PhD.

Arguably, limiting the analysis to a balanced panel introduces survivorship bias. However, and as has been explained above, the criteria generated comparatively larger sample size in relation to those of prior South African studies to the extent that the generalisation of the research results may not be substantially impaired. For regulatory and capital structure reasons, the sample also excludes financial and utility firms. As has been explained in subsection 5.1.1 of chapter five, this is generally in line with prior studies (e.g., Ho and Williams, 2003; Haniffa and Hudaib, 2006; Mangena and Chamisa, 2008), which facilitated drawing comparisons with the results of these studies. Together, these weaknesses may potentially limit the generalisation of the research findings.

Second, and as has been explained in subsection 5.2.2.1 of chapter five, there may be validity and reliability problems with the constructed compliance-index, the *SACGI*. The *SACGI* was constructed based on a binary rather than an ordinal coding scheme. It has been argued that binary coding is less informative (Barako *et al*., 2006a and b; Hassan and Marston, 2008). Similarly, the *SACGI* is an un-weighted index. However, un-weighted indices have been heavily criticised for treating all corporate governance provisions to be of equal importance, a view which is inconsistent with both theory and practice (Barako *et al*., 2006a, p.115).

As has been explained in subsection 5.2.2.1 of chapter five, there is a general lack of a rigorously developed theoretical basis on which weights could be accurately assigned to the various corporate governance provisions (Black *et al*., 2006a, p.375). In this case, the use of unweighted index avoids the necessity of making subjective value judgements as to the relative importance or efficacy of each corporate governance provision (Owusu-Ansah, 1998, p.609). Also, an associated advantage of an unweighted index is that it does not involve arbitrarily or subjectively assigning weights. This obviates creating a situation whereby the constructed index is unnecessarily dominated by or biased towards a particular set of corporate governance provisions.

Further, rigorously established empirical evidence from the accounting disclosure literature suggests that the use of weighted and unweighted indices tend to give the same results, especially where the number of corporate governance provisions is relatively large (e.g., Robbins and Austin, 1986; Chow and Wong-Boren, 1987; Beattie *et al*., 2004; and Barako *et al*., 2006a and b, amongst others). Moreover, in line with much of the prior corporate governance-performance relationship literature (Gompers *et al*., 2003; Black *et al*., 2006a; Henry, 2008; and Morey *et al*., 2009, amongst others), an unweighted index is constructed, which made it easier for direct comparisons to be drawn with their results.

Also, the *SACGI* was not coded by a different person in order to ascertain inter-coder consistency. As has been explained in subsection 5.2.2.1 of chapter five, the coding was done twice over a fourteen month period with high levels of stability between the first and second rounds of coding. For example, the stability between the first round SACGI and the second round SACGI is .8948. For the individual corporate governance provisions, the stability between the first and second round of coding ranges between .7614 in the case of board composition (COM1) to .9056 with respect to the disclosure of individual directors' attendance of board meetings (IDMA).

Beattie and Thompson (2007, p.220) suggest that the cut-off level for acceptability ranges from .70 to .80. Thus, the levels of stability achieved were generally highly satisfactory. Similarly, and unlike much of the prior literature, for each corporate governance provision and annual report, a detailed spreadsheet (see Appendices 3a and b) containing the page number(s) of what was coded, where it was coded from, and where applicable, why it was coded in that way, was developed to accompany the coding scheme. Arguably, this makes the constructed index easy and simple to replicate.

The corporate governance data was collected only from annual reports. It could have been cross-checked with other sources, such as questionnaire survey and face-to-face interviews. However, and as have been discussed in subsection 5.2.2.1 of chapter five, 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 (e.g., Lang and Lundholm, 1993; Botosan, 1997). This is because a firm can be sued for providing misleading information.

Also, prior evidence suggests that annual report disclosure levels are positively correlated with the amount of disclosure provided via other media (Lang and Lundholm, 1993, p.258; Botosan, 1997, p.329). Further, and for practical reasons, only company annual reports were consistently available in *Perfect Information* where the annual reports were mainly collected from. Moreover, using company annual reports is also in line with prior studies, which facilitated drawing direct comparisons with their results (e.g., Yermack, 1996; Shabbir and Padget, 2005; Cheung *et al*., 2007).

Third, there may be definitional problems with some of the corporate governance variables. For example, board diversity was coded as a binary variable rather than using actual percentage of board members from diverse backgrounds. Board size was defined to exclude 'shadow' or 'grey' directors. Non-executive directors were not distinguished into 'independent' and 'non-independent'. Similarly, due to data [96] limitations, director shareownership could not be separated into ownerships held by executive and non-executive directors, directly and indirectly, and beneficially and non-beneficially.

In the case of block shareownership, no distinctions are made in terms of internal and external, and institutional and non-institutional block shareownerships. Institutional shareownership could not be categorised into local and foreign institutional ownerships. Further, the director shareownership-financial performance non-linear nexus is tested by merely squaring and cubing director shareownership. Director shareownership levels could have, for example, been properly classified into low (0%-5%), medium (5%-25%), and high (25% and above). These definitional limitations may potentially influence the research findings.

[96]The ownership data was collected from the company annual reports. However, they were not clearly classified. For example, there were no proper or explicit classifications of shareownerships as to those with cash flow rights and those with voting rights. Director ownership was not explicitly classified into those owned by exectutive directors and those owned by non-exective directors. Block ownership was not classified into those owned by outsiders or institutions and those owned by individuals or insiders. Also, institutional ownership was also not classified into those owned by foreign institutions and those owned by local institutions.

Finally, the study may suffer from potential omitted variables bias. In the case of the financial performance proxies, they may fail to capture informal personal interactions among directors, management, and employees that may potentially impact on a firm's financial performance. With regard to the corporate governance variables, they may not be able to capture the true intentions for which they may be instituted by managers. For example, even though managers may know that non-executive directors may be practically ineffective in monitoring their actions, they may still appoint them just to merely signal their intentions of treating outsiders or shareholders fairly.

Similarly, it can be argued that the provisions contained in King II have nothing to do with good corporate governance. Rather, they are meant to achieve *accountability, discipline, fairness, independence, responsibility, social responsibility,* and *transparency*. Firm financial performance may mainly be determined by macro-economic variables and the general state of the economy. For instance, in a state of economic boom, all firms perform financially well. By contrast, in a state of economic recession, all firms perform poorly. An anecdotal example of this is the current global financial crisis and the associated economic downturn (e.g., Turner Review, 2009; Walker Review, 2009). Therefore, corporate governance may not be the main determinant of firm financial performance.

The research findings must, therefore, be interpreted in light of the above limitations. Also, these limitations potentially represent avenues for future research. Therefore, the next section points out potential avenues for future research and improvements.

10.5 **AVENUES FOR FUTURE RESEARCH AND IMPROVEMENTS**

There are several potential avenues for future research and improvements. First, since there is a general dearth of corporate governance studies that make use of African listed firms, this study can be extended by using data from a cross-section of African stock markets. This may improve current understanding of the internal corporate governance-financial performance association across different African markets.

Second, the study has mainly examined the association between internal corporate governance structures and firm financial performance. Future studies can investigate how external corporate governance mechanisms, such as the market for corporate control, the managerial labour market, and the law, amongst others, affect firm financial performance.

Future research can also analyse interactions or interdependences between internal and external corporate governance mechanisms and their impact on firm financial performance.

Third, given the current global financial crisis and its association with director pay and bonuses, it will be interesting for future research to focus on the relationship between director (i.e., CEO, executive, and non-executive) pay and company performance among South African listed firms. Also, the association between multiple (i.e., 'busy directors') directorships and financial performance can be explored by future research. Fourth, future studies can examine the relationship between internal corporate governance structures and cost of equity capital or risk. This is because if better-governed firms tend to be associated with higher financial returns, then such firms will theoretically be expected to be associated with lower cost of equity capital or risk.

Fifth, future studies can examine the determinants of corporate governance or compliance with the King Code, the ownership-corporate disclosure nexus, the relationship between corporate disclosure and cost of equity capital or risk, as well as the valuation consequences of voluntary disclosure of corporate governance among South African listed firms. Sixth, and in terms of improvement to the current study, future research can re-examine the corporate governance-financial relationship by expanding the sample size and over a longer period of time (say from 1990 or 1993 to 2001; from 2001 to 2009; or from 1990 or 1993 to 2009). Such a study can estimate both balanced and un-balanced panels to avoid survivorship bias. It can also examine only financial firms or both financial and non-financial firms to ascertain whether the current findings are sensitive or robust to different sample specifications.

Seventh, future research can improve the construction of the compliance corporate governance index to enhance validity and reliability. This can be done by examining the sensitivity or robustness of the results to: weighted and un-weighted indices; and binary and ordinal coding schemes. The reliability of the index can be improved if future research uses more than one coder so that inter-coder consistency can be measured. Future studies can also collect the corporate governance data via a questionnaire survey (i.e., postal and electronic) to either supplement those provided in company annual reports or to be used to supplant those provided in company annual reports.

Eighth, definitions of variables could be improved and made more precise. Board diversity could be measured in percentages, while board size can be defined to include 'shadow' or 'grey' directors. Non-executive directors can be distinguished into 'independent'

and ‘non-independent’. Similarly, director shareownership can be separated into ownerships held by executive and non-executive directors, directly and indirectly, and beneficially and non-beneficially.

In the case of block shareownership, distinctions can be made in terms of internal and external, and institutional and non-institutional block shareownerships. Institutional shareownership can be categorised into local and foreign institutional ownerships. Further, the director shareownership-financial performance non-monotonic relationship can be re-examined by properly classifying director ownership levels into low, medium, and high.

Finally, and with regard to the research design, event study methodology can be used by future researchers to investigate share price reaction to the adoption of the corporate governance provisions of King II. Future research can also examine share price reaction to board changes, including appointments, resignations, dismissals, deaths, and retirements of directors (i.e., chairpersons, CEOs, executive, non-executive, and independent non-executive directors).

Also, there are some pressing corporate governance issues that may be better addressed by future researchers via a qualitative methodology. For instance, the importance of corporate governance in corporate decision-making and performance can be explored by future research by observing boardroom interactions or by conducting interviews (i.e., structured, semi-structured, and un-structured) with key company stakeholders, such as executive and non-executive directors, company secretaries, senior management, and institutional investors. The interviews with company management can also explore the reasons why firms comply or do not comply with the provisions of King II.

Further, future studies can focus on the motivations and central drivers of corporate governance reforms in South Africa. This can be done by conducting face-to-face interviews with some of the key stakeholders of corporate governance reforms in South Africa. These may include the King Committee chairman and commissioners, key members of the Institute of Directors of South Africa, the JSE Ltd, and the South African Department of Trade and Industry, amongst others. This may help enhance current understanding of how corporate governance structures and systems evolve in a developing country setting.

10.6 **CHAPTER SUMMARY**

This chapter has focused on providing conclusions to the thesis. Specifically, it sought to achieve five main objectives. First, it attempted to summarise the research findings of the study. In this regard, the research findings based on the: levels of compliance with the South African Corporate Governance Index (the *SACGI*); *compliance-index* and *equilibrium-variable* models; and robustness or sensitivity analyses. The findings suggest the levels of compliance with the *SACGI* have significantly improved over the period of examination. However, substantial differences in the standards of corporate governance among South African listed firms still exist. Research findings based on the *compliance-index* model indicate that regardless of the measure used, better-governed firms, on average, tend to be associated with higher financial returns than their poorly-governed counterparts.

By contrast, findings based on the *equilibrium-variable* model are generally mixed. Irrespective of the measure used, board diversity and the frequency of board meetings appear to have no impact on firm financial performance. With the exception of the presence of a nomination committee, board subcommittees do not seem to have any significant effect on firm financial performance, regardless of the measure used. Board size is significantly positively associated with the Q-ratio, but insignificantly negatively related to the ROA. The coefficient on role or CEO duality under the ROA is significant and positive, but the coefficient on CEO duality under the Q-ratio is negative and insignificant. The final finding based on the *equilibrium-variable* model is that director shareownership is statistically insignificant and negatively related to ROA, but statistically significant and negatively associated with the Q-ratio.

Second, the chapter has discussed the policy implications of the research findings. With the respect to the levels of compliance with the *SACGI*, evidence of increasing levels of compliance implies that efforts at improving corporate governance standards by the various stakeholders within South African listed firms are beginning to pay-off. It also implies that the Cadbury-style voluntary compliance regime appears to be working to some extent in South Africa. Evidence of substantial variations in the levels of compliance among the sampled firms, however, implies that compliance and enforcement may need to be further strengthened. To encourage meaningful compliance, the on-going review of King II may consider introducing some level of judgement and flexibility in the applicability of the corporate governance provisions, especially for small listed firms.

The statistically significant and positive relationship between firm-level corporate governance and financial performance implies that corporate governance is an important determinant of firm financial performance in South Africa. In this respect, efforts by the Institute of Directors (IoD) of South Africa, the King Committee, the JSE, and the Financial Services Board (FSB), amongst other stakeholders, at improving corporate governance standards in South African companies may be seen as a step in the right direction. The significant positive relationship between the *Social-SACGI* and firm financial performance implies that South African listed firms may need to pay serious attention to complying with the affirmative action and stakeholder provisions and in preparing the integrated sustainability report. From shareholders' perspective, the findings also imply that the current 'hybrid' corporate governance model seems to be appropriate for South Africa, and that there may be no serious need for a radical change.

Despite the evidence that South African listed companies are positively embracing corporate governance reforms, the significant variability observed in the levels of compliance among the sampled firms indicates that there are still substantial room for improvements. The 'hybrid' corporate governance may be improved by renewing and strengthening integrated sustainability reporting (stakeholder issues reporting). To achieve effective and meaningful contribution to the sustainability of local communities and other identified legitimate stakeholders, the current integrated sustainability report may be made to form part of the annual financial statement and report. Disperse corporate shareholdings may be encouraged in addition to proper co-ordination among regulatory bodies to promote effective monitoring, compliance and enforcement of corporate governance provisions. The current hybrid regulatory structure may also be strengthened.

Third, the chapter sought to summarise the contributions of the study. The study makes several new contributions, as well as extensions to the extant corporate governance literature. First, it offers for the first time direct evidence on the relationship between internal corporate governance structures and firm financial performance in South Africa. Second, it documents for the first time evidence on the economic consequences of complying with affirmative action and stakeholder provisions for South African listed firms. Third, the study presents direct evidence on the levels of compliance with the corporate governance provisions recommended by King II among South African listed firms. Fourth, it makes for the first time a comparison of findings based on estimating a *compliance-index* model and an *equilibrium-variable* model.

Finally, and unlike most prior studies, the study comprehensively addresses problems that the potential presence of endogeneity may cause.

The fourth objective of the chapter has been to highlight the limitations of the study. First, there may be problems with the sample selection procedure and size. The sample size of 100 listed firms is relatively small. The five year period examined is also comparatively short. Limiting the analysis to a balanced panel possibly introduces survivorship bias. The sample also excludes financial and utility firms. These weaknesses may potentially limit the generalisability of the research findings.

Second, there may validity and reliability problems with the constructed *compliance-index*, the *SACGI*. The *SACGI* was constructed based only on a binary coding scheme. The corporate governance variables were equally weighted. Also, the *SACGI* was not coded by a different person in order to ascertain inter-coder consistency. The corporate governance data was collected purely from annual reports. These weaknesses may limit the validity and reliability of the results.

Third, there may be definitional problems with some of the corporate governance variables. For example, board diversity was coded as a binary variable rather than using actual percentage of board members from diverse backgrounds. Board size was defined to exclude 'shadow' or 'grey' directors. Non-executive directors were not distinguished into 'independent' and 'non-independent'. Further, the study may suffer from potential omitted variables bias. In the case of the financial performance proxies, they may fail to capture informal personal interactions among directors, management, and employees that may potentially impact on a firm's financial performance. With regard to the corporate governance variables, they may not be able to capture the true intentions for which they may be instituted by managers.

The final objective the chapter has been to point out potential avenues for future research and improvements. First, since there is a general dearth of corporate governance studies that make use of African listed firms, this study can be extended by using data from a cross-section of African stock markets. Second, the study has mainly examined the association between internal corporate governance structures and firm financial performance. Future studies can investigate how external corporate governance mechanisms, such as the market for corporate control, the managerial labour market, and the law, amongst others, affect firm financial performance.

Third, given the current international financial crisis and its association with director pay and bonuses, it will be interesting for future research to focus on the relationship between director (i.e., CEO, executive, and non-executive) pay and company performance among South African listed firms. Also, the association between multiple (i.e., 'busy directors') directorships and financial performance can be explored by future research. Fourth, future studies can examine the relationship between internal corporate governance structures and cost of equity capital or risk. This is because if better governed firms generate significantly higher financial returns, then such firms will theoretically be expected to have significantly lower cost of equity capital or risk.

Fifth, and in terms of improvement to the current study, future research can re-examine the corporate governance-financial relationship by expanding the sample size and over a longer period of time. Such a study can estimate both balanced and un-balanced panels to avoid survivorship bias. It can also examine only financial firms or both financial and non-financial firms to ascertain whether the current findings are sensitive or robust to different sample specifications. Finally, future studies can adopt different research methodology, such as qualitative and event study research designs to examine the corporate governance-financial performance nexus.

APPENDICES:

Appendix 1**: A List of the Names and Industries of the 100 Sampled Firms**

Full Company Name	JSE Code	Chosen Code	Industry	ISIN Code
1. Amalgamated Appliance Holdings Ltd	AMA	AAH	Consumer Goods	ZAE000012647
2. Anglogold Ashanti Ltd	ANG	AAS	Basic Materials	ZAE000043485
3. AECI Ltd	AFE	ACI	Basic Materials	ZAE000000220
4. Advtech Ltd	ADH	ADV	Consumer Services	ZAE000031035
5. Allied Electronics Corporation Ltd	ATN	AEC	Industrials	ZAE000029658
6. Afgri Ltd, aka, OTK Holdings Ltd	AFR	AFI	Consumer Goods	ZAE000040549
7. Aflease Gold Ltd, aka, Sub Nigel Gold Co.	AFO	AFO	Basic Materials	ZAE000075867
8. Adcorp Holdings Ltd	ADR	AHO	Industrials	ZAE000000139
9. AG Industries Ltd	AGI	AIN	Industrials	ZAE000039467
10. All Joy Foods Ltd	ALJ	AJF	Consumer Goods	ZAE000017240
11. African Media Entertainment Ltd	AME	AME	Consumer Services	ZAE000055802
12. African and Overseas Enterprises Ltd	AOO	AOE	Consumer Services	ZAE000000485
13. African Oxygen Ltd	AFX	AOX	Basic Materials	ZAE000067120
14. Aspen Pharmacare Holdings Ltd	APN	APH	Health Care/C. Serv.	ZAE000066692
15. Anglo Platinum Ltd	AMS	APL	Basic Materials	ZAE000013181
16. Astral Foods Ltd	ARL	ASF	Consumer Goods	ZAE000029757
17. Allied Technologies Ltd (South Africa)	ALT	ATE	Tellecomm./Techn.	ZAE000015251
18. Aveng Ltd	AEG	AVE	Industrials	ZAE000018081
19. Avi Ltd, aka, Anglovaal Industries Ltd	AVI	AVI	Consumer Goods	ZAE000049433
20. Barloworld Ltd	BAW	BAR	Industrials	ZAE000026639
21. Business Connexion Group, aka, Comparex	BCX	BCG	Technology	ZAE000054631
22. Bidvest Group Ltd	BVT	BGR	Industrials	ZAE000050449
23. Beige Holdings Ltd	BEG	BHO	Consumer Goods	ZAE000034161
24. Brandcorp Holdings Ltd	BRC	BRH	Consumer Services	ZAE000013611
25. Bytes Technology Group Ltd	BTG	BTG	Technology	ZAE000029526
26. Buildmax Ltd	BDM	BUI	Industrials	ZAE000011250
27. Crookes Brothers Ltd	CSK	CBR	Consumer Goods	ZAE000001434
28. Compu-Clearing Outsourcing Ltd	CCL	CCO	Technology	ZAE000016564
29. Command Holdings Ltd	CMA	CHO	Industrials	ZAE000023131
30. Comair Ltd	COM	COM	Consumer Services	ZAE000029823
31. Cullinan Holdings Ltd	CUL	CUH	Consumer Services	ZAE000013710
32. Datatec Ltd	DTC	DAT	Technology	ZAE000017745
33. Distell Group Ltd	DST	DGR	Consumer Goods	ZAE000028668
34. Datacentrix Holdings Ltd	DCT	DHO	Technology	ZAE000016051
35. Don Group Ltd	DON	DOG	Consumer Services	ZAE000008462
36. Dorbyl Ltd	DLV	DOR	Consumer Goods	ZAE000002184
37. Dynamic Cables Rsa Ltd	DYM	DYM	Technology	ZAE000028270
38. ERP.Com Holdings Ltd	ERP	ECH	Technology	ZAE000043493
39. Edgars Consolidated Stores Ltd	ECO	ECO	Consumer Services	ZAE000068649
40. Faritec Holdings Ltd	FRT	FHO	Technology	ZAE000016838
41. Foneworx holdings Ltd, aka, Interconnective	FWX	FOH	Technology	ZAE000086237
42. Foschini Ltd	FOS	FOS	Consumer Services	ZAE000031019
43. Gijima AST Group Ltd	GIJ	GAG	Technology	ZAE000064606
44. Gold Fields Ltd	GFI	GFI	Basic Materials	ZAE000018123
45. House of Busby	BSB	HBU	Consumer Goods	ZAE000013637
46. Harmony Gold Mining Company Ltd	HAR	HGM	Basic Materials	ZAE000015228
47. Imperial Holdings Ltd	IPL	IHO	Industrials	ZAE000067211
48. Infowave Holdings Ltd	IFW	INH	Technology	ZAE000016440
49. Intertrading Ltd	ITR	INT	Consumer Goods	ZAE000015566
50. Impala Platinum Holdings Ltd	IMP	IPH	Basic Materials	ZAE000083648

Continuation: **Appendix 1**

Full Company Name	JSE Code	Chosen Code	Industry	ISIN Code
51. ISA Holdings Ltd, aka, Y3K Group Ltd	ISA	ISH	Technology	ZAE000067344
52. Illovo Sugar Ltd	ILV	ISU	Consumer Goods	ZAE000083846
53. JD Group Ltd	JDG	JGR	Consumer Services	ZAE000030771
54. Kairos Industrial Holdings Ltd	KIR	KIH	Industrials	ZAE000011284
55. Labat Africa Ltd	LAB	LAF	Industrials	ZAE000018354
56. MTN Group Ltd, aka, M-Cell Ltd	MTN	MGR	Tellecomm.	ZAE000042164
57. Massmart Holdings Ltd	MSM	MHO	Consumer Services	ZAE000029534
58. Metmar Ltd, aka, Heritage Collection Ltd	MML	MML	Basic Materials	ZAE000078747
59. Moneyweb Holdings Ltd	MNY	MOH	Consumer Services	ZAE000025409
60. Murray and Roberts Holdings Ltd	MUR	MRH	Industrials	ZAE000073441
61. Mittal Steel South Africa Ltd, aka, Iscor	MLA	MSA	Basic Materials	ZAE000064044
62. Mustek Ltd	MST	MUS	Technology	ZAE000012373
63. Nampak Ltd	NPK	NAM	Industrials	ZAE000071676
64. Naspers Ltd	NPN	NAS	Consumer Services	ZAE000015889
65. Network Healthcare Holdings Ltd	NTC	NHH	Health Care/C. Ser.	ZAE000011953
66. Nu-World Holdings Ltd	NWL	NWH	Consumer Goods	ZAE000005070
67. Oceana Group Ltd	OCE	OGR	Consumer Goods	ZAE000025284
68. Onelogix Group Ltd	OLG	ONG	Industrials	ZAE000026399
69. Petmin Ltd	PET	PET	Basic Materials	ZAE000076014
70. Phumelela Gaming and Leisure Ltd	PHM	PGL	Consumer Services	ZAE000039269
71. Primeserv Group Ltd	PMV	PGO	Industrials	ZAE000039277
72. Paracon Holdings Ltd	PCN	PHO	Technology	ZAE000029674
73. Pinnacle Technology Holdings Ltd	PNC	PNC	Technology	ZAE000022570
74. Pretoria Portland Cement Company Ltd	PPC	PPC	Industrials	ZAE000005559
75. Pick n Pay Stores (Holdings) Ltd,	PIK	PPH	Consumer Services	ZAE000005443
76. Remgro Ltd	REM	REM	Industrials	ZAE000026480
77. Reunert Ltd	RLO	REU	Industrials	ZAE000057428
77. Sabmiller Plc	SAB	SAB	Consumer Goods	GB0004835483
78. Sallies Ltd	SAL	SAL	Basic Materials	ZAE000022588
79. Sappi Ltd	SAP	SAP	Basic Materials	ZAE000006284
80. Sasol Ltd	SOL	SAS	Oil and Gas/B. Mat.	ZAE000006896
81. Seardel Investment Corporation Ltd	SER	SER	Consumer Goods	ZAE000029815
82. Sovereign Food Investments Ltd	SOV	SFI	Consumer Goods	ZAE000009221
84. Shoprite Holdings Ltd	SHP	SHH	Consumer Services	ZAE000012084
85. Steinhoff International Holdings Ltd	SHF	SIH	Consumer Goods	ZAE000016176
86. Simmer and Jack Mines Ltd	SIM	SJM	Basic Materials	ZAE000006722
87. Stella Vista Technologies Ltd	SLL	SLL	Industrials	ZAE000018198
88. Scharrig Mining Ltd	SCN	SMI	Basic Materials	ZAE000006474
89. Square One Solutions Group Ltd	SQE	SOS	Technology	ZAE000023768
90. Spanjaard Ltd	SPA	SPA	Basic Materials	ZAE000006938
91. Spescom Ltd	SPS	SPE	Technology	ZAE000017919
92. Spectrum Shipping Ltd, aka, Santova Log.	SUM	SUM	Consumer Services	ZAE000037446
93. Tiger Brands Ltd	TBS	TBR	Consumer Goods	ZAE000071080
94. Thabex Exploration Ltd	TBX	TEX	Basic Materials	ZAE000013686
95. Tongaat-Hulett Group Ltd	TNT	THG	Consumer Goods	ZAE000007449
96. Telkom SA Ltd	TKG	TSA	Tellecomm./Techn.	ZAE000044897
97. Village Main Reef Gold Mining Co. (1934)	VIL	VGM	Basic Materials	ZAE000007720
98. Woolworths Holdings Ltd	WHL	WHL	Consumer Services	ZAE000063863
99. York Timber Organisation Ltd	YRK	YTO	Basic Materials	ZAE000008108
100. Zaptronix Ltd	ZPT	ZPT	Industrials	ZAE000070934

Appendix 2: **The Composite-Index Model – Definition of the South African Corporate Governance Index (*the SACGI*) Variables and Measurement**

Internal Corporate Governance Variable	*Acronym/ Code*	*King II Sub/Section(s)/ (Page Number(s))*	*Measurement*
1. **Board and Directors**		2 (pp.21-30)	
Board Structure		2.1-2.10.6 (pp.21-30)	
Role duality	DUAL1	2.3.3 (p.23)	*A binary* number of 1 if the roles of chairperson and CEO/MD of a firm are split at the end of its financial year, 0 otherwise.
Board composition	COM1	2.2.1 (p.23)	*A binary* number of 1 if a majority of a firm's board of directors are non-executive directors at the end of its financial year, 0 otherwise.
Board chairperson	BCP	2.3.2 (p.23)	*A binary* number of 1 if the chairperson of a firm is an independent non-executive director at the end of its financial year, 0 otherwise.
Frequency of board meetings	FBM1s	2.6.1 (pp.27-28)	*A binary* number of 1 if a firm's board of directors meets at least 4 times in a financial year, 0 otherwise.
Individual directors meetings attendance	IDMA	2.6.1 (p.27-28)	*A binary* number of 1 if individual directors' meetings attendance of a firm is disclosed in the firm's annual report at the end of its financial year, 0 otherwise.
Disclosure of directors' biography	DDB	2.1.1.6 (p.22)	*A binary* number of 1 if a narrative on current directors' as well as directors' standing for re-elections' brief curriculum vitae or biography such as name, official address, age, qualifications, experience, responsibilities and status is disclosed in the annual report at the end of its financial year, 0 otherwise.
Disclosure of director classification	DDC	2.4.3 (p.24)	*A binary* number of 1 if a clear narrative that classifies directors into executive, non-executive and independent non-executive direc-

			tors is disclosed in the firm's annual report at the end of its financial year, 0 otherwise.
Board and Director Evaluation		2.8 (p.29)	
Evaluation of chairperson performance and effectiveness	ECPE	2.3.5 (p.23)	*A binary* number of 1 if a narrative on the evaluation of a firm's chairperson's performance and effectiveness is disclosed in its annual report at the end of its financial year, 0 otherwise.
Appraisal of CEO/MD performance and effectiveness	ACEOPE	2.3.6 (p.24)	*A binary* number of 1 if a narrative on the appraisal of a firm's CEO/MD's performance and effectiveness is disclosed in the annual report at the end of its financial year, 0 otherwise.
Evaluation of board performance and effectiveness	EBPE	2.8.1 (p.29)	*A binary* number of 1 if a narrative on the evaluation of the performance and effectiveness of a firm's board as whole and individual directors is disclosed in the firm's annual report at the end of its financial year, 0 otherwise.
Evaluation of board subcommittees performance and effectiveness	EBSCPE	2.7.10 (p.29)	*A binary* number of 1 if a narrative on the evaluation of the performance and effectiveness of a firm's board subcommittees' is disclosed in the firm's annual report at the end of its financial year, 0 otherwise.
Dealings and Securities		2.9 (p.29)	
Director/officer dealings and securities	DDS	2.9.1 (p.29)	*A binary* number of 1 if a narrative on the policy or the practice of prohibiting dealings in a firm's shares or securities by directors, officers and other senior internal employees for a designated period preceding the announcement of financial results or in any other period considered price sensitive, and have regard to the listings requirements of the JSE Ltd South Africa in respect of share dealings of directors is disclosed in the annual report, 0

			otherwise.
Company Secretary		2.10 (p.29)	
Office of the company secretary	COSEC1	2.10.1 (p.29)	*A binary* number of 1 if a narrative on the existence of a strong and supportive office of a company secretary, which ensures effective functioning of the board, such as conducting induction sessions for new or inexperienced directors, facilitating the taking of free independent professional advice by board members when necessary, assisting the Chair-person or CEO/MD in convening meetings and performing other statutory duties is disclosed in the annual report of a firm at the end of its financial year, 0 otherwise.
Internal Board Sub-Committees		2.7 (pp.28-29)	
Nomination		2.2/2.4 (pp.23, 25)	
Existence	NCOM1	2.2.2/2.4.8 (pp.23, 25)	*A binary* variable of 1 if a firm has a nomination committee at the end of its financial year, 0 otherwise. If the remit of this committee includes ensuring co-mpliance with corporate rules and regulations or governance rules, then such a committee will be deemed to have been duly set-up.
Composition	COMP2	2.2.2/2.7.9 (pp.23,29)	*A binary* number of 1 if this committee is composed of by a majority of independent non-executive directors at the end of a firm's financial year, 0 otherwise.
Chairperson	NCCP	2.2.2/2.7.7 (pp.23, 29)	*A binary* number of 1 if the chairperson of this committee is an independent non-executive di-rector at the end a firm's financial year, 0 otherwise.
Disclosure of membership	DM1	2.7.9 (p.29)	*A binary* number of 1 if the membership of the committee is disclosed in a firm's annual report for the financial year, 0 otherwise.
Disclosure of individual meetings	INCMMA	2.6.1/2.7.9 (pp.27, 29)	*A binary* number of 1 if a record of individual members att-

attendance			endance of meetings is disclosed in a firm's annual report for the financial year, 0 otherwise.
Remuneration		2.5 (pp.26-27)	
Existence	RCOM1	2.5.2/2.7.5 (pp.26, 28)	*A binary* number of 1 if a firm has a remuneration committee at the end of its financial year, 0 otherwise.
Composition	COM3	2.5.2/2.7.9 (pp.26, 29)	*A binary* number of 1 if the remuneration committee of a firm is formed only by independent non-executive directors at the end of its financial year, 0 otherwise.
Chairperson	RCCP	2.5.2/2.7.7 (pp.26, 29)	*A binary* number of 1 if the chairperson of this committee of a firm is an independent non-executive director at the end of its financial year, 0 otherwise.
Disclosure of membership	DM2	2.5.3/2.7.9 (pp.26, 29)	*A binary* number of 1 if the membership of this committee of a firm is disclosed in the firm's annual report at the end of its financial year, 0 otherwise.
Disclosure of individual members meetings attendance	IRCMMA	2.6.1/2.7.9 (pp.27, 29)	*A binary* number of 1 if a record of individual members attendance of meetings is disclosed in a firm's annual report for the financial year, 0 otherwise.
Disclosure of directors' remuneration, interests, and share options	DDR	2.5.4/2.5.8 (pp.26-27)	*A binary* number of 1 if a firm's directors' remuneration, interests, and share options are disclosed in its annual report for a financial year, 0 otherwise.
Disclosure of director remuneration philosophy (procedure) and performance-linked executive director remuneration	DPLR	2.5.5/2.5.10 (pp.26-27)	*A binary* number of 1 if the performance-related elements of executive directors' remuneration such as share options and bonuses do constitute substantial portion of the total package in order to align their interests with shareholders, and this is supported by a narrative on the specific procedure and the underpinning philosophy in a firm's annual report at the end of its financial year, 0 otherwise.
Director Access to Free Independent		2 (pp.22, 23)	

Professional Legal Advice			
Director/subcommittee access to free professional independent advice	DAFIPA	2.1.9/2.7.8 (pp.22, 29)	*A binary* number of 1 if a firm has a narrative on the existence of a formal procedure, which allows directors/subcommittees to seek independent professional legal advice on any matters (i.e., legislative, regulatory or procedural) affecting the firm, when they deem it to be necessary, at the firm's own expense is disclosed in its annual report at the end of its financial year, 0 otherwise.
2. **Accounting and Auditing**		6.1 (pp.38-40) 6.3 (pp.39-40)	
Auditing committee			
Existence	ACOM1	2.7.5/6.3.1 (pp.28, 39)	*A binary* number of 1 if a firm has an internal audit committee at the end of its financial year, 0 otherwise. If the remit of this committee includes those performed by a Risk or Corporate Governance committee, then such committees will be deemed to have been duly constituted.
Composition	COM4	6.3.1 (p.39)	*A binary* number of 1 if a firm's audit committee is composed of by at least two independent non-executive directors of whom majority are financially literate at the end of its financial year, 0 otherwise.
Chairperson	ACCP	2.7.7/6.3.2 (pp.29, 39)	*A binary* number of 1 if the chairperson of this committee is an independent non-executive director, who is also not the same as the chairperson of the main board at the end of a firm's financial year, 0 otherwise.
Disclosure of membership	DM3	2.7.9/6.3.5 (pp.29, 39)	*A binary* number of 1 if a firm discloses the membership of this committee in its annual report for a financial year, 0 otherwise.
Disclosure of	IACMMA	2.6.1/2.7.9	*A binary* number of 1 if a

individual members meetings attendance		(pp.27, 29)	record of individual members attendance of meetings is disclosed in a firm's annual report for a financial year, 0 otherwise.
Board Statement on the Going-Concern Status of the Firm		5.1/6.2/8.4 (pp.36, 38-39, 41)	
Narrative on the 'Going-Concern'	NGC	5.1.3/6.2.3/8.4.6 (pp.36, 39, 41)	*A binary* number of 1 if a clear narrative by the directors of a firm on the possibility of the firm operating as a 'going-concern' is disclosed in its annual report for the financial year, 0 otherwise.
3. **Risk Management and Internal Audit**		3-4 (pp.30-35)	
Disclosure of company risks	DCR	3.1.3/3.1.5/3.2.2 /3.2.6 (pp.30-33)	*A binary* number of 1 if a firm provides a narrative on both actual and potential future non-systematic (firm-specific) risks like union/labour disruptions, adverse incidents (fire outbreaks), cases of litigation as well as systematic (economy wide) such as inflation, exchange rates, politics, currency re(de)valuation, interest rates, economic recession, intense business or market competition, among others, that it is facing in its annual report for a financial year, 0 otherwise.
Disclosure of policy on risks management	DPM	3.1.1/3.1.2/3.1.7 3.2.3/3.2.5 (pp.30-33)	*A binary* number of 1 if a firm provides a narrative on how current and future assessed risks will be managed in its annual report for a financial year, 0 otherwise.
Disclosure policy on internal control systems	DPI	3.1.4/3.1.7-3.2.1/4.1.1-4.2.5 (pp.30-35)	*A binary* number of 1 if a firm provides a narrative on existing internal control systems(including internal audit) in its annual report for a financial year, 0 otherwise.
Risk management committee	RISCOM1	3.1.6 (p.31)	*A binary* number of 1 if a firm has a risk management committee dedicated to assisting the board in reviewing the risk management process and the significant risks that it is facing in its annual report for a financial year, 0

			otherwise.
Disclosure of individual members attendance of risk management committee meetings	IRISCMA	2.6.1/2.7.9 (pp.27, 29)	*A binary* number of 1 if a firm provides a record of individual members attendance of risk committee meetings in its annual report for a financial year, 0 otherwise.
4. **Ownership Structure**		2.5 (pp.26-27)	
Internal Ownership	INON1	2.5.6-2.5.7 (pp.26-27)	*A binary* number of 1 if the total value of issued ordinary equity that is directly or indirectly held (including through a firm or a holding firm with either a beneficial or a non-beneficial interests) by all directors, officers and internal employees of a firm is less than 50% of the firm's total book value of issued ordinary equity, 0 otherwise.
5. **Integrated Sustainability Reporting/Non-Financial Information**		5 (pp.35-37)	
Black economic empowerment and empowerment of women	BEE	5.1.1-5.1.4 (pp.35-37)	*A binary* number of 1 if a firm provides a narrative on how it is complying with, and implementing the broad-based black economic empowerment and empowerment of women laws in its annual report for a financial year, 0 otherwise.
Policy on HIV/Aids	HIV	5.1.4 (p.36)	*A binary* number of 1 if a firm provides a narrative on how it is addressing the threat posed by HIV/AIDS pandemic in South Africa in its annual report at the end of a financial year, 0 otherwise.
Policy on health and safety	PHS	5.1.1-5.1.4 (pp.35-37)	*A binary* number of 1 if a firm provides a narrative on measures taken to address the occupational health and safety of its employees in its annual report at the end of its financial year, 0 otherwise.
Policy on employment equity	PHQ	5.1.1-5.1.4 (pp.35-37)	*A binary* number of 1 if a firm provides a narrative on how it is complying with employment equity laws in terms of gender, age,

			ethnicity and disabilities in its annual report for a financial year, 0 otherwise.
Policy on good environmental practices	PEP	5.1.1-.51.4 (pp.35-37)	*A binary* number of 1 if a firm provides a narrative on how it is complying with, and implementing the rules and regulations on the environment in its annual report for a financial year, 0 otherwise.
Offering Community Support/Corporate Social Investment	CSI	5.1.1-5.1.4 (pp.35-37)	*A binary* number of 1 if a firm provides a narrative on community support and other corporate social responsibilities (e.g., constructing/supporting schools, local hospitals/clinics, supplying portable water, etc) in its annual report for a financial year, 0 otherwise.
Disclosure of a code of ethics	DCE	5.2.1-5.2.4 (pp.37-38)	*A binary* number of 1 if a firm provides a narrative on the existence of a code of ethics and its adherence to in its annual report for a financial year, 0 otherwise.
Board diversity on the basis of ethnicity	BDIVE1	2.1.2/2.1.10/ 2.2.1 (pp.21-23)	*A binary* number of 1 if a firm's board is formed by at least 1 white and 1 non-white person at the end of a financial year, 0 otherwise.
Board diversity on the basis of gender	BDIVG1	2.1.2/2.1.10/ 2.2.1 (pp.21-23)	*A binary* number of 1 if a firm's board is formed by at least 1 male and 1 female person at the end of a financial year, 0 otherwise.
6. **<u>Encouraging a Culture of Voluntary Compliance and Enforcement</u>**		7-8/6 (pp.40-41, 162-165)	
Contribution to the development of financial journalism	CDFJ	6 (p.162)	*A binary* number of 1 if a firm provides a narrative on how it is contributing towards the development of financial journalism, recognising the financial media as an appropriate monitor of corporate conduct in its annual report for a financial year, 0 otherwise.
Policy on encouraging shareholder	PSA	7-8/6 (pp.40-41, 163-165)	*A binary* number of 1 if a firm provides a narrative on what it is doing to encourage shareholder

activism			activism such as having investor relations department, the institution of proxy voting, encouraging shareholder attendance of AGMs in its annual report for a financial year, 0 otherwise.
Narrative on compliance/non-compliance with the 2002 King Report on Corporate Governance for South Africa	CNC	8.4.7 (p.41)	*A binary* number of 1 if a firm provides a positive statement on the compliance or non-compliance with the provisions of the 2002 King Report on Corporate Governance for South Africa in its annual report at the end of its financial year, 0 otherwise.

Appendix 3*a* –

A Spreadsheet of Coded Corporate Governance Variables for the First Six Sampled Firms in Alphabetical Order

YEAR	COMPANY CODE	DUAL1	COM1	BCP	FBMs1	IDMA	BDIVE	BDIVG	EBPE	EBSCPE	ACPE	ECEOPE
2002	AAH	0	1	0	1	0	0	0	0	0	0	0
2003	AAH	0	1	0	1	0	0	0	0	0	0	0
2004	AAH	0	1	0	1	1	0	0	0	0	0	0
2005	AAH	0	1	0	1	1	0	0	0	0	0	0
2006	AAH	0	0	0	1	1	0	0	0	0	0	0
2002	AAS	1	1	0	1	1	1	1	0	1	0	0
2003	AAS	1	1	1	1	1	1	1	0	0	0	0
2004	AAS	1	1	1	1	1	1	1	1	1	1	1
2005	AAS	1	1	1	1	1	1	1	1	1	1	1
2006	AAS	1	1	1	1	1	1	1	1	1	1	1
2002	ACI	1	1	1	1	1	1	1	0	0	0	0
2003	ACI	1	1	1	1	1	1	1	1	0	0	0
2004	ACI	1	1	1	1	1	1	1	0	0	0	0
2005	ACI	1	1	1	1	1	1	0	0	0	0	0
2006	ACI	1	1	1	1	1	1	0	1	0	0	0
2002	ADV	1	1	0	1	1	1	0	0	0	0	0
2003	ADV	1	1	0	1	1	0	0	1	0	0	0
2004	ADV	1	1	0	1	1	1	0	1	0	0	0
2005	ADV	1	0	0	1	1	1	0	0	0	0	0
2006	ADV	1	0	0	1	1	1	0	0	0	0	0
2002	AEC	1	1	0	0	0	1	1	1	0	0	0
2003	AEC	1	0	0	1	1	1	1	1	0	0	0
2004	AEC	1	0	0	1	1	1	1	1	0	0	0
2005	AEC	1	0	0	1	1	1	1	1	0	0	0
2006	AEC	1	0	0	1	1	1	1	0	0	0	0
2002	AFI	1	1	0	1	0	0	0	0	0	0	0
2003	AFI	1	1	0	1	1	0	0	0	0	0	0
2004	AFI	1	1	0	1	1	0	0	0	0	0	0
2005	AFI	1	1	0	1	1	1	1	0	0	0	0
2006	AFI	1	1	0	1	1	1	1	0	0	0	0

Appendix 3*b* –

A Sample Spreadsheet of Coded Corporate Governance Variables with Data Sources and Page Numbers

YEAR	COMPANY CODE	DUAL1	COM1	BCP	FBMs1	IDMA
2002	AAH	p8	pp8;13;20	p8	p14	n/a
2003	AAH	pp4;5;15;44	pp4;5;12;44	p4;5;15;44	p12	n/a
2004	AAH	pp6;7;20;23	pp6;7;20;23	pp6;7;20;23	p23	p23
2005	AAH	pp6;20;24;69	pp6;20;24	pp6;20;24	p27	p27
2006	AAH	pp6;26;86	pp6;26;85;86	pp6;85	p30	p30
2002	AAS	pp54;55;57;143	pp54;55;57	pp54;57	p58	p58
2003	AAS	pp4;37;43	pp37;38;43	pp37;43;44	pp42;43	p43
2004	AAS	pp4;5;15;16;66;68;189	pp4;5;15;16;68;69;70;189	pp4;5;15;16;68;189	pp72;	pp72
2005	AAS	pp5;22;23;87;268	pp22;23;87;88;90;268	pp5;22;23;87;268	pp87;91	pp91
2006	AAS	pp6;7;9;20-21;95	pp6;7;9;20-21;95;98	pp6;7;9;20-21;95	pp95;100	pp95;100
2002	ACI	pp5-7;11;12;38	pp5-7;11;12	pp5-7;11;12	p12	p12
2003	ACI	pp6-7;15;19	pp6-7	pp6-7;15;44	pp8-9	p9
2004	ACI	pp18-19;25	pp18-19;50	pp18-19;25;50	pp21	p21
2005	ACI	pp6-7;8;9;13;17;47	pp6-7;8;9;13;48	pp6-7;8;9;13;47	pp8-9	p9
2006	ACI	pp6-7;10;32;33;56	pp6-7;9;33;57	pp6-7;8;10;33;56	pp6-7;33-34	p34
2002	ADV	pp2;3;6;16;21	pp2;3;6;16;21;23	pp2;3;6;16;21	p16	p16
2003	ADV	pp2;3;6-7;16;21	pp2;3;6-7;16	pp2;3;6-7;16;21	p16	p16
2004	ADV	pp10;28	pp6;7;10;28	pp10;28	p28	p28
2005	ADV	pp9;01-02;06-07	pp9;01-02;06	pp9;01-02;06-07	pp9;01-02	p02
2006	ADV	pp09-10;01;06;43	pp09-10;01;06;43	pp09-10;01;06;43	p01	p01
2002	AEC	pp6;10;34	pp6;10;34;40;82-83	pp6;10;34;82-83	n/a	n/a
2003	AEC	pp9;15;43;19;52;88-89	pp12;43;47;88-89	pp9;43;88	pp43;47	pp43;47
2004	AEC	pp6-7;10-11;17;35	pp6-7;35;95-96	pp7;10;35;95-96	pp36;39	pp36;39
2005	AEC	pp11;17;54;110-112;63	pp48;54;110-112	pp11;48;54	pp49;54	pp54
2006	AEC	pp11;17;114	pp91	pp11;17;114	pp93;101	pp101
2002	AFI	pp03;06	pp30;41;43;90-92	pp03;41	p30	n/a
2003	AFI	pp8-9;17;38;51;102	pp8-9;38-39	pp13;51	pp38;39	p39
2004	AFI	pp08-09;013;025;040	pp08-09;013;031;043	pp011;040	pp028-031	p031
2005	AFI	pp06-07-013;021;038	pp06-07;012-013;026;030;041	pp013;038	pp026;030	p030
2006	AFI	pp06-07;08	pp06-07;10;22;26	pp06-07;08;22;26;34	pp22;26	pp26

Appendix 4: **The Equilibrium-Variable Model - Variables Definitions and Measurements**

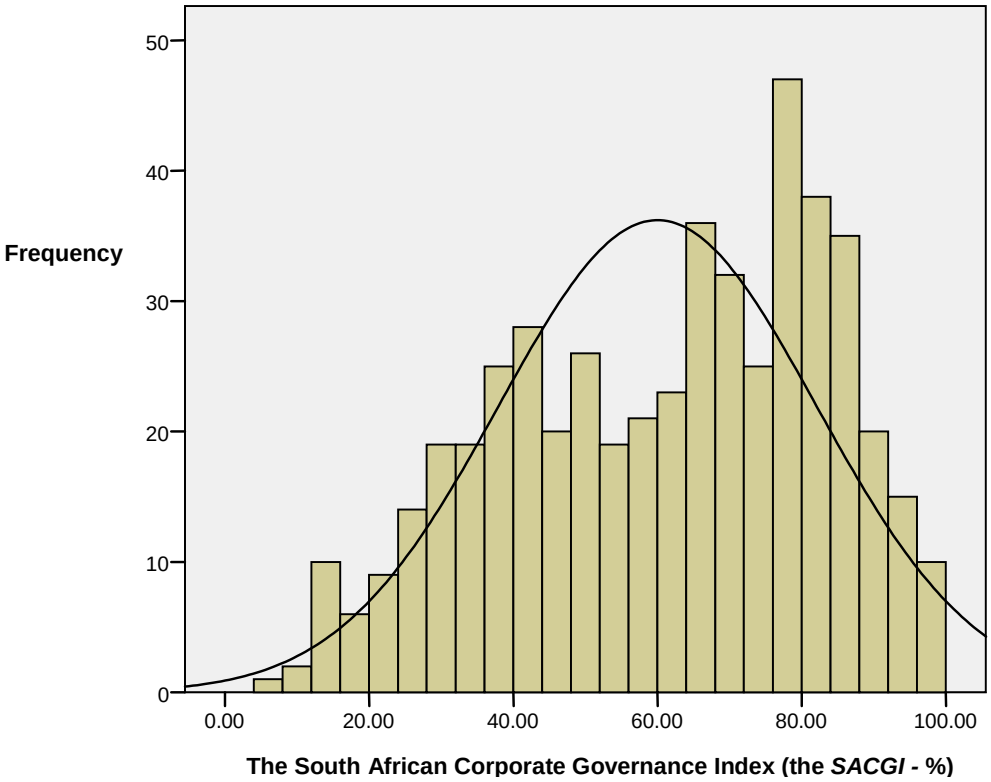
Variable	*Acronym/Code*	*Measurement*
1. **Dependent/Financial Performance**	FP	
Accounting Measure: Return on Assets (%)	ROA	*Operating* profit (WC01250) of a firm divided by the book value of its total assets (WC02999) at the end of its financial year.
Market Measure: Tobin's Q	Q-RATIO	*The* ratio of a firm's total assets (WC02999) minus its total book value of ordinary equity (WC03501+WC03451) plus total market value of equity (MV) divided by its total assets (WC02999) at the end of its financial year.
DataStream items		
Accounting Variables:		
Capital expenditure	WC04601	
Operating profit (993)	WC01250	
Total assets (WS)	WC02999	
Total debt	WC03255	
Total sales (104)	WC01001	
Total share capital and reserves (307)	(WC03501+ WC03451)	
Market Variable:		
Market value	MV	
2. **Internal Corporate Governance/Independent *Board Structure***		
Board size	BSIZE	*The* total number of directors on the board of a firm at the end of its financial year. Alternate/shadow directors are not counted as part of the board for the year.
Non-executive directors (%)	NEDs	*The* number of non-executive directors divided by the total number of directors on the board of a firm at the end of its financial year.
Role or CEO duality	DUAL	*A* binary number that takes the value of 1 if the roles of chairperson and CEO of firm are combined at the end of its financial year, 0 otherwise.
Board diversity	BDIV	*A* binary number that takes the value of 1 if a firm's board is composed of by at least 1 white, 1 non-white, 1 male and 1 female at the end of its financial year, 0 otherwise.

Frequency of board meetings	FBMs	*The* total number of meetings held by a firm's board of directors over a full financial year.
3. **Key Internal Board Committees**		
Audit committee	ACOM	*A* binary number that takes the value of 1 if a firm has an audit committee established at the end of its financial year, 0 otherwise.
Nomination committee	NCOM	*A* binary number that takes the value of 1 if a firm has a nomination committee established at the end of its financial year, 0 otherwise.
Remuneration committee	RCOM	*A* binary number that takes the value of 1 if a firm has a remuneration committee established at the end of its financial year, 0 otherwise.
Compliance/corporate governance committee	CGCOM	*A* binary number that takes the value of 1 if a firm has a compliance/corporate governance committee established at the end of its financial year, 0 otherwise.
4. **Ownership Structure**		
Director Share-ownership (%)	DTON	*The* total number of ordinary shares held by all directors of the board of scaled by the total number of ordinary shares of a firm at the end of its financial year.
5. **Alternative Corporate Governance Mechanisms**		
Block Shareholding (%)	BLKSHDNG	*The* total number of ordinary shares held by shareholders with at least 5% holding divided by the total number of ordinary shares of a firm at the end of its financial year.
Institutional share-holding (%)	INSTHDNG	*The* total number of ordinary shares held by both financial and non-financial institutions scaled by the total number of ordinary shares of a firm at the end of its financial year.
Leverage (%)	LEV	*The* percentage of total debt (WC032-55) to total assets (WC02999) of a firm at the end of its financial year.
6. **Controls**		
Capital expenditure (%)	CAPEX	*The* percentage of total capital expenditure (WC04601) to total assets (WC0-2999) of firm at the end of its financial year.
Foreign-listing/Dual-listing	DUALLIST	*A* binary number that takes the value of 1 if a firm maintains a secondary

		listing on a UK/US stock market at the end of its financial year, 0 otherwise
Capital Structure/ Gearing (%)	GEAR	*The* percentage of total debt (WC032-55) to total ordinary equity (WC03501 + WC03501) of a firm at the end of its financial year.
Firm Size	LNTA	*Natural* log of the book value of a firm's total assets (WC02999) at the end of its financial year.
Sales Growth (%)	SGROWTH	*The* percentage of the difference between current year's sales (WC01001) and previous year's sales (WC01001) divided by previous year's sales (WC01001) of a firm at the end of its financial year.
Industry	INDUST	*A* dummy variable for each of the 5 industries: basic materials (BMAT), consumer goods (CGOODS), consumer services (CSERVICES), industrials (IN-DUSTRIALS) and technology (TECHN).
Year	YD	*Five* year dummies for each of the five years from 2002 to 2006 inclusive.
Audit firm size	BIG4	*A dummy* variable that takes a value of '1' if a sampled firm is audited by any of the big four auditing firms (namely, Deloitte & Touche, Ernst & Young, KPMG, and PricewaterhouseCoopers), zero otherwise.

Appendix 5 –

A Normal Histogram of the Distribution of the SACGI



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